

PROSPECTUS



6,509,677 Shares

Common Stock

This prospectus relates to the sale or other disposition from time to time of up to 6,509,677 shares of our common stock, \$0.001 par value per share, issued and issuable to Lincoln Park Capital Fund, LLC, the selling stockholder named in this prospectus, also referred to as Lincoln Park. We are not selling any shares of common stock under this prospectus and will not receive any of the proceeds from the sale of shares of common stock by the selling stockholder.

The shares of common stock being offered by the selling stockholder have been or may be issued pursuant to the purchase agreement dated December 22, 2016 that we entered into with Lincoln Park, which we refer to in this prospectus as the Purchase Agreement. Please refer to the section of this prospectus entitled "The Lincoln Park Transaction" for a description of the Purchase Agreement and the section entitled "Selling Stockholder" for additional information regarding Lincoln Park. The prices at which Lincoln Park may sell the shares will be determined by the prevailing market price for the shares or in negotiated transactions.

The selling stockholder may sell or otherwise dispose of the shares of common stock covered by this prospectus in a number of different ways and at varying prices. We provide more information about how the selling stockholder may sell or otherwise dispose of their shares of common stock in the section entitled "Plan of Distribution." The selling stockholder will pay all brokerage fees and commissions and similar expenses. We will pay all expenses (except brokerage fees and commissions and similar expenses) relating to the registration of the shares with the Securities and Exchange Commission.

Our common stock is listed on the NASDAQ Capital Market under the ticker symbol "CYTX." On March 29, 2017, the closing price of our common stock as reported on the NASDAQ Capital Market was \$1.61.

Lincoln Park is an underwriter within the meaning of Section 2(a)(11) of the Securities Act of 1933, as amended.

Investing in our common stock involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading "Risk Factors" beginning on page 11 of this prospectus, and under similar headings in any amendments or supplements to this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is March 30, 2017.

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ABOUT THIS PROSPECTUS

The registration statement of which this prospectus forms a part that we have filed with the Securities and Exchange Commission, or SEC, includes exhibits that provide more detail of the matters discussed in this prospectus. You should read this prospectus and the related exhibits filed with the SEC, together with the additional information described under the headings “Where You Can Find More Information” and “Incorporation by Reference” before making your investment decision.

You should rely only on the information provided in this prospectus or in any prospectus supplement or any free writing prospectuses or amendments thereto. Neither we, nor the selling stockholder, have authorized anyone else to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. You should assume that the information in this prospectus is accurate only as of the date hereof. Our business, financial condition, results of operations and prospects may have changed since that date.

Neither we, nor the selling stockholder, are offering to sell or seeking offers to purchase these securities in any jurisdiction where the offer or sale is not permitted. Neither we, nor the selling stockholder, have done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the securities as to distribution of the prospectus outside of the United States.

Unless the context otherwise requires, references in this prospectus to “Cytori,” “the Company,” “we,” “us” and “our” refer to Cytori Therapeutics, Inc. Solely for convenience, our trademarks and tradenames referred to in this registration statement, such as Cytori Cell Therapy, Celution, Celase and Intravase, may appear without the ® or ™ symbols, but such references are not intended to indicate in any way that we will not assert, to the fullest extent under applicable law, our rights to these trademarks and tradenames. All other trademarks, service marks and trade names included or incorporated by reference into this prospectus are the property of their respective owners.

Unless the context otherwise requires, references in this prospectus to shares of our common stock, including prices per share of our common stock, reflect the 1-for-15 reverse split that was approved by our stockholders and board of directors on May 10, 2016. Our common stock commenced trading on a split-adjusted basis on May 12, 2016.

PROSPECTUS SUMMARY

This summary contains basic information about us and this offering. Because it is a summary, it does not contain all of the information that you should consider before investing. Before you decide to invest in our common stock, you should read this entire prospectus carefully, including the section entitled “Risk Factors” and any information incorporated by reference herein.

Overview

Our strategy is to build a profitable and growing specialty therapeutics company focused on rare and niche opportunities often overlooked by larger companies but requiring breadth of scope, expertise and focus often not possessed by, or available to, smaller companies. To meet this objective, we have, thus far, identified two therapeutic development platforms and candidate therapeutics in our pipeline that hold promise for millions of patients and significant market potential.

Our current corporate activities fall substantially into one of two key areas related to our two technical therapeutic development platforms: Cytori Cell Therapy™ and Cytori Nanomedicine™. Our Cytori Cell Therapy, or CCT platform, is based on the scientific discovery that the human adipose or fat tissue compartment is a source of a unique mixed population of stem, progenitor and regenerative cells that may hold substantial promise in the treatment of numerous diseases. To bring this promise to patients, we are developing the processes and procedures via proprietary hardware- and software-based devices and single-use reagents and consumable sets, to enable doctors to have access to a variety of therapies at the bedside derived fundamentally from each patient’s own adipose tissue. Our lead product candidate is for the treatment of hand manifestations of scleroderma, and we have recently completed a U.S. pivotal clinical trial for this indication using our Habeo™ Cell Therapy product. We have additional CCT treatments in various stages of development. Further, our CCT platform is the subject of investigator-initiated trials conducted by our partners, licensees and other third parties, some of which are supported by us and/or funded by government agencies and other funding sources. Currently, we internally manufacture or source our CCT-related products from third parties. We also have obtained regulatory approval to sell some of our CCT products in certain markets outside the United States. In those markets, we have been able to further develop and improve our core technologies, gain expanded clinical experience and data and generate sales.

Our Cytori Nanomedicine platform features a versatile and novel protein-stabilized liposomal nanoparticle technology for drug encapsulation that has thus far provided the foundation to bring two promising drugs into early/late stage clinical trials. By encapsulating certain drugs, we can create both novel compounds and improve the performance via reformulated versions of existing drugs. Nanoparticle encapsulation is promising because it can help improve the trafficking and metabolism of many drugs, thus potentially enhancing the therapeutic profile and patient benefits. Our lead drug candidate, ATI-0918 is a generic version of liposomal encapsulated doxorubicin. Liposomal encapsulated doxorubicin is a heavily relied upon chemotherapeutic used in many cancer types on a global basis. Data from a 60-patient European trial indicated that ATI-0918 is bioequivalent to the existing reference listed drug in Europe. The second drug in clinical trials is ATI-1123, a new chemical entity which is a nanoparticle encapsulated form of docetaxel, also a standard chemotherapeutic drug used for many cancers. A phase I clinical trial has been completed, and we plan to expand this trial to phase II, most likely in conjunction with a development partner. In addition, we are early in the long-term research and development of encapsulated regenerative medicine drugs, focused first on the treatment of scleroderma and related connective disorders. Finally, in connection with our acquisition of the ATI-0918 and ATI-1123 drug candidates, we have acquired know-how (including proprietary processes and techniques) and a scalable nanoparticle manufacturing plant in San Antonio, Texas, that we intend to employ to test, validate and eventually manufacture commercial quantities of our nanoparticle drugs

Corporate Information

We were initially formed as a California general partnership in July 1996, and incorporated in the State of Delaware in May 1997. We were formerly known as MacroPore Biosurgery, Inc., and before that as MacroPore, Inc. Our corporate offices are located at 3020 Callan Road, San Diego, CA 92121. Our telephone number is (858) 458-0900. We maintain an Internet website at www.cytori.com. The information contained on, or that can be accessed through, our website is not part of this prospectus. Through this site, we make available free of charge our annual reports on

Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. In addition, we publish on our website all reports filed under Section 16(a) of the Exchange Act by our directors, officers and 10% stockholders. These materials are accessible via the Investor Relations—Reports and Filings section of our website within the “SEC Filings” link. Some of the information is stored directly on our website, while other information can be accessed by selecting the provided link to the section on the SEC website, which contains filings for our company and its insiders.

THE OFFERING

This prospectus relates to the resale by Lincoln Park Capital Fund, LLC, the selling stockholder identified in this prospectus, of up to 6,509,677 shares of our common stock, as follows:

- 127,419 shares of common stock issued in December 2016 upon the entry into the Purchase Agreement with the selling stockholder, as an initial commitment fee;
- up to 6,000,000 shares of common stock that may be issued and sold to the selling stockholder pursuant to the Purchase Agreement; and
- up to 382,258 shares of common stock required to be issued proportionally in the future, as an additional commitment fee, if and when we sell shares to Lincoln Park pursuant to the Purchase Agreement.

Common stock offered by the selling stockholder	6,509,677 shares
Common stock outstanding before the offering ⁽¹⁾	23,568,403 shares
Common stock to be outstanding after the offering ⁽²⁾	30,078,080 shares
NASDAQ Capital Market Symbol	CYTX

(1) Based on the number of shares outstanding as of February 28, 2017 and includes the 127,419 shares issued to Lincoln Park in December 2016.

(2) Assumes the issuance of all of the shares issuable under the Purchase Agreement that are being offered by this prospectus.

On December 22, 2016, we entered into the Purchase Agreement, pursuant to which we can sell to Lincoln Park an aggregate of up to \$20.0 million of our common stock, together with a registration rights agreement, which we refer to in this prospectus as the Registration Rights Agreement. In connection with the execution of the Purchase Agreement, we issued to Lincoln Park 127,419 shares of our common stock as an initial commitment fee. Furthermore, for each additional purchase by Lincoln Park, additional commitment shares in commensurate amounts up to a total of 382,258 shares will be issued as an additional commitment fee based upon the relative proportion of the aggregate amount of \$20.0 million of shares of our common stock purchased by Lincoln Park.

Under the terms and subject to the conditions of the Purchase Agreement, we have the right to sell to Lincoln Park and Lincoln Park is obligated to purchase up to \$20.0 million of shares, as described below, of our common stock, subject to certain limitations, from time to time, over the 30-month period commencing on the date that the registration statement, of which this prospectus is a part, is declared effective by the SEC, and a final prospectus in connection therewith is filed. We may direct Lincoln Park, in our sole discretion and subject to certain conditions, to purchase up to 100,000 shares of our common stock on any business day (such purchases, Regular Purchases), provided that at least one business day has passed since the most recent purchase, and provided that the amount we may sell to Lincoln Park under a single Regular Purchase may increase under certain circumstances as described in the Purchase Agreement but in no event will the amount of a single Regular Purchase exceed \$1.0 million. The purchase price of shares of our common stock related to the future funding will be based on the prevailing market prices of such shares at the time of sales. In addition, we may direct Lincoln Park to purchase other amounts as “accelerated purchases” and “additional purchases” under certain circumstances. Our sales of shares of common stock to Lincoln Park under the Purchase Agreement are limited to the number of shares that would result in the beneficial ownership by Lincoln Park and its affiliates, at any single point in time, of no more than 9.99% of the then outstanding shares of our common stock.

Under the rules of the NASDAQ Capital Market, in no event may we issue more than 19.99% of our shares outstanding (which is approximately 4,315,814 shares based on 21,579,071 shares outstanding prior to the signing of the Purchase Agreement and which we refer to as the Exchange Cap) under the Purchase Agreement unless we obtain stockholder approval or an exception pursuant to the rules of the NASDAQ Capital Market is obtained to issue more than 19.99%. This limitation will not apply if, at any time the Exchange Cap is reached and at all times thereafter, the average price paid for all shares issued and sold under the Purchase Agreement is equal to or greater than \$1.6674, which was the consolidated closing bid price of our common stock on December 22, 2016 including an increment for the commitment shares we issued and may issue to Lincoln Park. We are not required or permitted

to issue any shares of common stock under the Purchase Agreement if such issuance would breach our obligations under the rules or regulations of the NASDAQ Capital Market.

We have the right to terminate the Purchase Agreement at any time, at no cost or penalty. Actual sales of shares of common stock to Lincoln Park under the Purchase Agreement will depend on a variety of factors to be determined by us from time to time, including, among others, market conditions, the trading price of the common stock and determinations by us as to the appropriate sources of funding for us and our operations. Lincoln Park has no right to require any sales by us, but is obligated to make purchases from us as we direct in accordance with the Purchase Agreement. Lincoln Park has covenanted not to cause or engage in any manner whatsoever, any direct or indirect short selling or hedging of our shares.

For a more detailed description of the Purchase Agreement, see “The Lincoln Park Transaction.”

The net proceeds under the Purchase Agreement to us will depend on the frequency and prices at which we sell shares of our stock to Lincoln Park. We expect that any proceeds received by us from such sales to Lincoln Park under the Purchase Agreement will be used for working capital and general corporate purposes.

Under the Purchase Agreement we may sell up to \$20.0 million of our common stock to Lincoln Park. While we do not know what the purchase price for our common stock will be, and therefore cannot be certain as to the number of shares we might issue to Lincoln Park in the future under the Purchase Agreement, a total of 6,509,677 shares of our common stock are being offered under this prospectus, which is less than the amount of shares issuable under the Purchase Agreement. If all of the 6,509,677 shares issuable to and offered by Lincoln Park under this prospectus were issued and outstanding as of February 28, 2017, such shares would represent approximately 22% of the total number of shares of our common stock outstanding and approximately 22% of the total number of outstanding shares held by non-affiliates, in each case as of February 28, 2017; however, these percentages do not give effect to the prohibition contained in the Purchase Agreement that prevents us from selling and issuing to Lincoln Park shares such that, after giving effect to such sale and issuance, Lincoln Park and its affiliates would beneficially own, at any single point in time, more than 9.99% of the then outstanding shares of our common stock. If we elect to issue and sell more than the 6,509,677 shares issuable in the future to and offered under this prospectus to Lincoln Park, which we have the right, but not the obligation, to do, we must first register for resale under the Securities Act of 1933, as amended, or the Securities Act, any such additional shares, which could cause additional substantial dilution to our stockholders. The number of shares ultimately offered for resale by Lincoln Park is dependent upon the number of shares we sell to Lincoln Park under the Purchase Agreement.

Issuances of our common stock in this offering will not affect the rights or privileges of our existing stockholders, except that the economic and voting interests of each of our existing stockholders will be diluted as a result of any such issuance. Although the number of shares of common stock that our existing stockholders own will not decrease, the shares owned by our existing stockholders will represent a smaller percentage of our total outstanding shares after any such issuance to Lincoln Park.

SUMMARY CONSOLIDATED FINANCIAL DATA

The following summary consolidated balance sheets and statements of operations as of December 31, 2016 and 2015 and for the years ended December 31, 2016, 2015 and 2014, respectively, have been derived from our audited consolidated financial statements that are included in the documents incorporated by reference into this prospectus. The historical financial data presented below is not necessarily indicative of our financial results in future periods. You should read the summary consolidated financial data in conjunction with those financial statements and the accompanying notes and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in the documents incorporated by reference into this prospectus. Our consolidated financial statements are prepared and presented in accordance with United States generally accepted accounting principles, or U.S. GAAP. All share and per share information presented herein has been retroactively restated to reflect a 1-for-15 reverse split that was approved by our stockholders and board of directors on May 10, 2016.

CYTORI THERAPEUTICS, INC.
CONSOLIDATED CONDENSED BALANCE SHEETS

	As of December 31,		
	2016	2015	2014
Assets			
Current assets:			
Cash and cash equivalents	\$ 12,560,000	\$ 14,338,000	\$ 14,622,000
Accounts receivable, net of reserves of \$167,000, \$797,000 and \$1,523,000 as of December 31, 2016, 2015 and 2014, respectively	1,242,000	1,052,000	1,243,000
Restricted cash and cash equivalents	350,000	—	—
Inventories, net	3,725,000	4,298,000	4,829,000
Other current assets	870,000	1,555,000	992,000
Total current assets	18,747,000	21,243,000	21,686,000
Property and equipment, net	1,157,000	1,631,000	1,583,000
Restricted cash and cash equivalents	—	350,000	350,000
Other assets	2,336,000	1,521,000	1,763,000
Intangibles, net	8,447,000	9,031,000	9,415,000
Goodwill	3,922,000	3,922,000	3,922,000
Total assets	\$ 34,609,000	\$ 37,698,000	\$ 38,719,000
Liabilities and Stockholders' Equity (Deficit)			
Current liabilities:			
Accounts payable and accrued expenses	\$ 5,872,000	\$ 6,687,000	\$ 5,546,000
Current portion of long-term obligations, net of discount	6,629,000	—	7,363,000
Joint Venture purchase obligation	—	1,750,000	3,008,000
Total current liabilities	12,501,000	8,437,000	15,917,000
Warrant liability	—	—	9,793,000
Deferred revenues	97,000	105,000	112,000
Long-term deferred rent and other	17,000	269,000	558,000
Long-term obligations, net of discount, less current portion	11,008,000	16,681,000	18,041,000
Total liabilities	23,623,000	25,492,000	44,421,000
Commitments and contingencies			
Stockholders' equity:			
Series A 3.6% convertible preferred stock, \$0.001 par value; 5,000,000 shares authorized; 13,500 shares issued and no shares outstanding as of December 31, 2016 and 2015; 13,500 shares issued and 5,311 outstanding as of December 31, 2014	—	—	—
Common stock, \$0.001 par value; 75,000,000 shares authorized; 21,707,890, 13,003,893 and 6,623,226 shares issued and outstanding as of December 31, 2016, 2015 and 2014, respectively	22,000	13,000	7,000
Additional paid-in capital	388,769,000	368,214,000	331,864,000
Accumulated other comprehensive income	1,258,000	996,000	700,000
Accumulated deficit	(379,063,000)	(357,017,000)	(338,273,000)
Total stockholders' equity (deficit)	10,986,000	12,206,000	(5,702,000)
Total liabilities and stockholders' equity (deficit)	\$ 34,609,000	\$ 37,698,000	\$ 38,719,000

CYTORI THERAPEUTICS, INC.
CONSOLIDATED CONDENSED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS

	Years Ended December 31,		
	2016	2015	2014
Product revenues	\$ 4,656,000	\$ 4,838,000	\$ 4,953,000
Cost of product revenues	2,715,000	3,186,000	2,940,000
Gross profit	<u>1,941,000</u>	<u>1,652,000</u>	<u>2,013,000</u>
Development revenues:			
Government contracts and other	6,724,000	6,821,000	2,645,000
	<u>6,724,000</u>	<u>6,821,000</u>	<u>2,645,000</u>
Operating expenses:			
Research and development	16,197,000	19,000,000	15,105,000
Sales and marketing	3,611,000	2,662,000	6,406,000
General and administrative	8,563,000	9,765,000	15,953,000
Change in fair value of warrants	—	(7,668,000)	(369,000)
Total operating expenses	28,371,000	23,759,000	37,095,000
Operating loss	<u>(19,706,000)</u>	<u>(15,286,000)</u>	<u>(32,437,000)</u>
Other income (expense):			
Loss on debt extinguishment	—	(260,000)	—
Interest income	19,000	9,000	6,000
Interest expense	(2,592,000)	(3,379,000)	(4,371,000)
Other income (expense), net	233,000	172,000	(566,000)
Total other (expense) income	<u>(2,340,000)</u>	<u>(3,458,000)</u>	<u>(4,931,000)</u>
Net loss	<u>(22,046,000)</u>	<u>(18,744,000)</u>	<u>(37,368,000)</u>
Beneficial conversion feature for convertible preferred stock	—	(661,000)	(1,169,000)
Net loss allocable to common stockholders	<u>(22,046,000)</u>	<u>(19,405,000)</u>	<u>(38,537,000)</u>
Basic and diluted net loss per share allocable to common stockholders	\$ (1.28)	\$ (2.07)	\$ (7.15)
Basic and diluted weighted average shares used in calculating net loss per share allocable to common stockholders	17,290,933	9,386,488	5,388,714
Comprehensive loss:			
Net loss	\$ (22,046,000)	\$ (18,744,000)	\$ (37,368,000)
Other comprehensive income – foreign currency translation adjustments	262,000	296,000	444,000
Comprehensive loss	<u>\$ (21,784,000)</u>	<u>\$ (18,448,000)</u>	<u>\$ (36,924,000)</u>

RISK FACTORS

Investing in our securities involves a high degree of risk. Before making an investment decision with respect to our securities, we urge you to carefully consider the risks described in the “Risk Factors” sections of our most recent Annual Report on Form 10-K and our Quarterly Reports on Form 10-Q filed with the SEC and incorporated by reference into this prospectus. These risk factors relate to our business, intellectual property, regulatory matters, and ownership of our common stock. In addition, the following risk factors present material risks and uncertainties associated with this offering. The risks and uncertainties incorporated by reference into this prospectus or described below are not the only ones we face. Additional risks and uncertainties not presently known or which we consider immaterial as of the date hereof may also have an adverse effect on our business. If any of the matters discussed in the following risk factors were to occur, our business, financial condition, results of operations, cash flows or prospects could be materially adversely affected, the market price of our securities could decline and you could lose all or part of your investment in our securities.

Risks Related to the Offering

We may not be able to access the full amounts available under the Lincoln Park Purchase Agreement, which could prevent us from accessing the capital we need to continue our operations, which could have an adverse effect on our business.

We intend to rely on the Purchase Agreement that we entered into with Lincoln Park in December 2016 for our near-term capital needs. We may direct Lincoln Park to purchase up to \$20.0 million of shares of our common stock over a 30-month period, commencing upon the satisfaction of certain conditions, including that the registration statement is declared effective by the SEC. Thereafter, on any trading day selected by us, we may sell shares of common stock to Lincoln Park in amounts up to 100,000 shares per regular sale (such purchases, Regular Purchases) up to the aggregate commitment of \$20.0 million. If the market price of our common stock is not below \$2.00 per share on the purchase date, then the Regular Purchase amount may be increased to 150,000 shares. If the market price is not below \$3.00 per share on the purchase date, then the Regular Purchase amount may be increased to 300,000 shares. Although there are no upper limits on the per share price Lincoln Park may pay to purchase our common stock, we may not sell more than \$1.0 million in shares of common stock to Lincoln Park per any individual Regular Purchase. The purchase price of Regular Purchases will be based on the prevailing market prices of shares of our common stock, which shall be equal to the lesser of the lowest sale price of the common shares during the purchase date and the average of the three lowest closing sale prices of the common shares during the 10 business days prior to the purchase date.

In addition to Regular Purchases, we may in our sole discretion direct Lincoln Park on each purchase date to make accelerated purchases on the following business day up to the lesser of (i) three times the number of shares purchased pursuant to such Regular Purchase or (ii) 30% of the trading volume on the accelerated purchase date at a purchase price equal to the lesser of (i) the closing sale price on the accelerated purchase date and (ii) 97% of the accelerated purchase date’s volume weighted average price (such purchases, Accelerated Purchases). We cannot submit an Accelerated Purchase notice if the market price of our common stock is below \$1.00.

In addition to Regular Purchases and Accelerated Purchases described above, we may also direct Lincoln Park, on any business day that the closing price of our common stock is not below \$1.00, to purchase additional amounts of our common stock, which we refer to as an Additional Purchase whereby, pursuant to each Additional Purchase we may sell up to \$1.0 million of common stock in each Additional Purchase notice, provided, however, that (i) we may not deliver to Lincoln Park more than two separate Additional Purchase notices and (ii) at least 30 business days must pass between the Company’s delivery of the first Additional Purchase notice to Lincoln Park and our delivery of the second Additional Purchase notice. The purchase price for each such Additional Purchase shall be equal to the lower of (i) 97% of the purchase price under a Regular Purchase on the date we give notice for the related Additional Purchase, or (ii) \$2.00 per share.

Depending on the prevailing market price of our common stock, we may not be able to sell shares to Lincoln Park for the maximum \$20.0 million over the term of the Purchase Agreement. For example, under the rules of the NASDAQ Capital Market, in no event may we issue more than 19.99% of our shares outstanding (which is approximately 4,315,814 shares based on 21,579,071 shares outstanding prior to the signing of the Purchase

Agreement) under the Purchase Agreement unless we obtain stockholder approval or an exception pursuant to the rules of the NASDAQ Capital Market is obtained to issue more than 19.99%. This limitation will not apply if, at any time the Exchange Cap is reached and at all times thereafter, the average price paid for all shares issued and sold under the Purchase Agreement is equal to or greater than \$1.6674, which was the consolidated closing bid price of our common stock on December 22, 2016 including an increment for the commitment shares we issued and may issue to Lincoln Park. We are not required or permitted to issue any shares of common stock under the Purchase Agreement if such issuance would breach our obligations under the rules or regulations of the NASDAQ Capital Market. In addition, Lincoln Park will not be required to purchase any shares of our common stock if such sale would result in Lincoln Park's beneficial ownership exceeding 9.99% of the then outstanding shares of our common stock. Our inability to access a portion or the full amount available under the Purchase Agreement, in the absence of any other financing sources, could have a material adverse effect on our business.

The sale or issuance of our common stock to Lincoln Park may cause dilution and the sale of the shares of common stock acquired by Lincoln Park, or the perception that such sales may occur, could cause the price of our common stock to fall.

On December 22, 2016, we entered into the Purchase Agreement with Lincoln Park, pursuant to which Lincoln Park has committed to purchase up to \$20.0 million of our common stock. Concurrently with the execution of the Purchase Agreement, we issued 127,419 shares of our common stock to Lincoln Park as an initial fee for its commitment to purchase shares of our common stock under the Purchase Agreement. Furthermore, for each additional purchase by Lincoln Park, additional commitment shares in commensurate amounts up to a total of 382,258 shares will be issued based upon the relative proportion of the aggregate amount of \$20.0 million purchased by Lincoln Park. The purchase shares that may be sold pursuant to the Purchase Agreement may be sold by us to Lincoln Park at our discretion from time to time over a 30-month period commencing after the SEC has declared effective the registration statement that includes this prospectus. The purchase price for the shares that we may sell to Lincoln Park under the Purchase Agreement will fluctuate based on the price of our common stock. Depending on market liquidity at the time, sales of such shares may cause the trading price of our common stock to fall.

We generally have the right to control the timing and amount of any sales of our shares to Lincoln Park. Additional sales of our common stock, if any, to Lincoln Park will depend upon market conditions and other factors to be determined by us. Lincoln Park may ultimately purchase all, some or none of the shares of our common stock that may be sold pursuant to the Purchase Agreement and, after it has acquired shares, Lincoln Park may sell all, some or none of those shares. Therefore, sales to Lincoln Park by us could result in substantial dilution to the interests of other holders of our common stock. Additionally, the sale of a substantial number of shares of our common stock to Lincoln Park, or the anticipation of such sales, could make it more difficult for us to sell equity or equity-related securities in the future at a time and at a price that we might otherwise wish to effect sales.

FORWARD-LOOKING STATEMENTS

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

All statements, other than statements of historical fact, included or incorporated herein regarding our strategy, future operations, financial position, future revenues, projected costs, plans, prospects and objectives are forward-looking statements. Words such as “expect,” “anticipate,” “intend,” “plan,” “believe,” “seek,” “estimate,” “think,” “may,” “could,” “will,” “would,” “should,” “continue,” “potential,” “likely,” “opportunity” and similar expressions or variations of such words are intended to identify forward-looking statements, but are not the exclusive means of identifying forward-looking statements. Additionally, forward-looking statements include statements concerning future matters such as our anticipated expenditures, including those related to clinical research studies and general and administrative expenses, the potential size of the market for our products, future development and/or expansion of our products and therapies in our markets, our ability to generate product revenues or effectively manage our gross profit margins, our ability to obtain regulatory clearance, expectations as to our future performance, liquidity and capital resources, including our potential need for additional financing and the availability thereof, and the potential enhancement of our cash position through development, marketing, and licensing arrangements. Such statements are based on currently available operating, financial and competitive information and are subject to various risks, uncertainties and assumptions that could cause actual results to differ materially from those anticipated or implied in our forward-looking statements due to a number of factors including, but not limited to, our need and ability to raise additional cash, our joint ventures, risks associated with laws or regulatory requirements applicable to us, market conditions, product performance, potential litigation, competition within the regenerative medicine field, and other factors set forth above under the section entitled “Risk Factors” in this prospectus. Given these risks, uncertainties and other factors, many of which are beyond our control, you should not place undue reliance on these forward-looking statements.

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

THE LINCOLN PARK TRANSACTION

General

On December 22, 2016, we entered into the Purchase Agreement and the Registration Rights Agreement with Lincoln Park. Pursuant to the terms of the Purchase Agreement, Lincoln Park has agreed to purchase from us up to \$20.0 million in the aggregate of our common stock (subject to certain limitations) from time to time over a 30-month period from the date the registration statement of which this prospectus forms a part is declared effective by the SEC. Pursuant to the terms of the Registration Rights Agreement, we have filed with the SEC the registration statement that includes this prospectus to register for resale under the Securities Act the shares that have been or may be issued to Lincoln Park under the Purchase Agreement. The registration statement of which this prospectus is a part, does not register all of the shares issuable pursuant to the Purchase Agreement. To sell additional shares to Lincoln Park under the Purchase Agreement, we will have to file one or more additional registration statements for those additional shares.

Other than 127,419 shares of our common stock that we have already issued to Lincoln Park pursuant to the terms of the Purchase Agreement as consideration for its commitment to purchase shares of our common stock under the Purchase Agreement, we do not have the right to commence any sales to Lincoln Park under the Purchase Agreement until the SEC has declared effective the registration statement of which this prospectus forms a part. Thereafter and upon satisfaction of the other conditions set forth in the Purchase Agreement, we may, from time to time and at our sole discretion, direct Lincoln Park to purchase shares of our common stock in amounts up to 100,000 shares on any single business day so long as at least one business day has passed since the most recent purchase. We can also increase the amount of our common stock to be purchased under certain circumstances to up to 300,000 shares but not exceeding \$1.0 million per purchase plus additional “accelerated amounts” and “additional amounts” under certain circumstances. The purchase price per share is based on the market price of our common stock immediately preceding the time of sale as computed under the Purchase Agreement. Lincoln Park may not assign or transfer its rights and obligations under the Purchase Agreement.

Purchase of Shares Under the Purchase Agreement

Under the Purchase Agreement, on any business day selected by us, we may direct Lincoln Park to purchase up to 100,000 shares of our common stock on any such business day so long as one business day has passed since the last purchase. On any day that the closing sale price of our common stock is not below (a) \$2.00, the purchase amount may be increased, at our sole discretion, to up to 150,000 shares of our common stock per purchase, and (b) \$3.00, the purchase amount may be increased, at our sole discretion, to up to 300,000 shares of our common stock per purchase, provided in each instance that the amount cannot exceed \$1.0 million (such purchases, Regular Purchases). Lincoln Park will not be required to purchase any shares of our common stock if such sale would result in Lincoln Park’s beneficial ownership exceeding 9.99% of the then outstanding shares of our common stock. The purchase price per share for each such Regular Purchase will be equal to the lower of:

- the lowest sale price for our common stock on the purchase date of such shares; or
- the arithmetic average of the three lowest closing sale prices for our common stock during the 10 consecutive business days ending on the business day immediately preceding the purchase date of such shares.

In addition to Regular Purchases described above, we may also direct Lincoln Park, on any business day on which we have properly submitted a Regular Purchase notice and the closing price of our common stock is not below \$1.00 per share, to purchase an additional amount of our common stock (such purchase, an Accelerated Purchase), not to exceed the lesser of:

- 30% of the aggregate shares of our common stock traded during normal trading hours on the purchase date; and

- three times the number of purchase shares purchased pursuant to the corresponding Regular Purchase.

The purchase price per share for each such Accelerated Purchase will be equal to the lower of:

- 97% of the volume weighted average price during (i) the entire trading day on the purchase date, if the volume of shares of our common stock traded on the purchase date has not exceeded a volume maximum calculated in accordance with the Purchase Agreement, or (ii) the portion of the trading day of the purchase date (calculated starting at the beginning of normal trading hours) until such time at which the volume of shares of our common stock traded has exceeded such volume maximum; or
- the closing sale price of our common stock on the purchase date.

In addition to Regular Purchases and Accelerated Purchases described above, we may also direct Lincoln Park, on any business day that the closing price of our common stock is not below \$1.00, to purchase additional amounts of our common stock, which we refer to as an Additional Purchase whereby, pursuant to each Additional Purchase we may sell up to \$1.0 million of common stock in each Additional Purchase notice, provided, however, that (i) we may not deliver to Lincoln Park more than two separate Additional Purchase notices and (ii) at least 30 business days must pass between the Company's delivery of the first Additional Purchase notice to Lincoln Park and our delivery of the second Additional Purchase notice. The purchase price for each such Additional Purchase shall be equal to the lower of (i) 97% of the purchase price under a Regular Purchase on the date we give notice for the related Additional Purchase, or (ii) \$2.00 per share.

In the case of Regular Purchases, Accelerated Purchases and Additional Purchases, the purchase price per share will be equitably adjusted for any reorganization, recapitalization, non-cash dividend, stock split, reverse stock split or other similar transaction occurring during the business days used to compute the purchase price.

Other than as set forth above, there are no trading volume requirements or restrictions under the Purchase Agreement, and we will control the timing and amount of any sales of our common stock to Lincoln Park.

Events of Default

Events of default under the Purchase Agreement include the following:

- the effectiveness of the registration statement of which this prospectus forms a part, or any future registration statement relating to the resale of shares issuable pursuant to the Purchase Agreement, lapses for any reason (including, without limitation, the issuance of a stop order), or any required prospectus supplement and accompanying prospectus are unavailable for the resale by Lincoln Park of our common stock offered hereby, and such lapse or unavailability continues for a period of 10 consecutive business days or for more than an aggregate of 30 business days in any 365-day period;
- suspension by our principal market of our common stock from trading for a period of one business day;
- the de-listing of our common stock from the NASDAQ Capital Market, provided our common stock is not immediately thereafter trading on the New York Stock Exchange, the NYSE MKT, the NYSE Arca, the NASDAQ Global Market, the NASDAQ Global Select Market, the OTC Bulletin Board or OTC Markets (or nationally recognized successor thereto);
- the transfer agent's failure for three business days to issue to Lincoln Park shares of our common stock which Lincoln Park is entitled to receive under the Purchase Agreement;

- our breach of any representation, warranty, covenant, or other term or condition contained in the Purchase Agreement or any related agreement which has or which would reasonably be expected to have a material adverse effect on us subject to a cure period of five business days;
- any voluntary or involuntary participation or threatened participation in insolvency or bankruptcy proceedings by or against us;
- if at any time we are not eligible to transfer our common stock electronically; or
- if at any time the Exchange Cap is reached (to the extent the Exchange Cap is applicable).

Lincoln Park does not have the right to terminate the Purchase Agreement upon any of the events of default set forth above. During an event of default, all of which are outside of Lincoln Park's control, we cannot initiate any Regular Purchases or Accelerated Purchases under the Purchase Agreement.

Our Termination Rights

We have the unconditional right, at any time, for any reason and without any payment or liability to us, to give notice to Lincoln Park to terminate the Purchase Agreement. In the event of bankruptcy proceedings by or against us, the Purchase Agreement will automatically terminate without action of any party.

No Short-Selling or Hedging by Lincoln Park

Lincoln Park has agreed that neither it nor any of its affiliates shall engage in any direct or indirect short-selling or hedging of our common stock during any time prior to the termination of the Purchase Agreement.

No Variable Rate Transactions

We agreed with Lincoln Park that we will not enter into any "variable rate" transactions with any third party from the date of the Purchase Agreement until the 30-month anniversary of the date of the Purchase Agreement, subject to certain exceptions set forth in the Purchase Agreement. Additionally, we agreed with Lincoln Park that we will not effect any issuance of shares of our common stock in any "continuous offering" in which we enter into any agreement, including, but not limited to, an equity line of credit, whereby we may sell securities at a future determined price until the expiration of the 30-month period following the date of the Purchase Agreement.

Effect of Performance of the Purchase Agreement on Our Stockholders

All shares of common stock registered in this offering are expected to be freely tradable. It is anticipated that shares registered in this offering will be sold over a period of up to 30 months commencing on the date that the registration statement including this prospectus becomes effective. The sale by Lincoln Park of a significant amount of shares registered in this offering at any given time could cause the market price of our common stock to decline and to be highly volatile. Lincoln Park may ultimately purchase all, some or none of the shares of common stock not yet issued but registered in this offering. If we sell these shares to Lincoln Park, Lincoln Park may sell all, some or none of such shares. Therefore, sales to Lincoln Park by us under the Purchase Agreement may result in substantial dilution to the interests of other holders of our common stock. In addition, if we sell a substantial number of shares to Lincoln Park under the Purchase Agreement, or if investors expect that we will do so, the actual sales of shares or the mere existence of our arrangement with Lincoln Park may make it more difficult for us to sell equity or equity-related securities in the future at a time and at a price that we might otherwise wish to effect such sales. However, we have the right to control the timing and amount of any sales of our shares to Lincoln Park and the Purchase Agreement may be terminated by us at any time at our discretion without any cost to us.

Pursuant to the terms of the Purchase Agreement, we have the right, but not the obligation, to direct Lincoln Park to purchase up to \$20.0 million of our common stock. We have registered only a portion of the shares issuable under the Purchase Agreement and, therefore, we may seek to issue and sell to Lincoln Park under the Purchase Agreement more shares of our common stock than are offered under this prospectus. If we choose to do so, we must first register for resale under the Securities Act any such additional shares, which could cause additional substantial dilution to our stockholders. The number of shares ultimately offered for resale by Lincoln Park under this

prospectus is dependent upon the number of shares we direct Lincoln Park to purchase under the Purchase Agreement.

The following table sets forth the amount of proceeds we would receive from Lincoln Park from the sale of shares at varying purchase prices:

Assumed Average Purchase Price Per Share⁽¹⁾⁽²⁾	Number of Registered Shares to be Issued if Full Purchase⁽³⁾⁽⁴⁾	Percentage of Outstanding Shares After Giving Effect to the Issuance to Lincoln Park⁽⁴⁾	Additional Proceeds from the Sale of Registered Shares to Lincoln Park Under the Purchase Agreement
\$1.00	6,000,000	20.29%	\$6,000,000
\$1.36	6,000,000	20.29%	\$8,160,000
\$2.00	6,000,000	20.29%	\$12,000,000
\$3.00	6,000,000	20.29%	\$18,000,000
\$4.00	5,000,000	17.50%	\$20,000,000

- (1) Although the Purchase Agreement provides that we may sell up to \$20.0 million of our common stock to Lincoln Park, we are only registering 6,509,677 shares (inclusive of the 127,419 initial commitment shares issued to Lincoln Park and the 382,258 additional commitment shares that may be issued to Lincoln Park as a commitment fee) under this prospectus, which may or may not cover all of the shares we ultimately sell to Lincoln Park under the Purchase Agreement. As a result, we have included in this column only those shares that we are registering in this offering.
- (2) The closing price of our common stock on March 29, 2017 was \$1.61.
- (3) The number of registered shares to be issued excludes the 127,419 commitment shares previously issued and registered hereunder and 382,258 additional commitment shares that may be issued to Lincoln Park because no proceeds will be attributable to such shares.
- (4) The denominator is based on 23,568,403 shares outstanding as of February 28, 2017, adjusted to include the issuance of up to 127,419 initial commitment shares issued to Lincoln Park, and the number of shares set forth in the adjacent column which we would have sold to Lincoln Park, assuming the purchase price in the adjacent column including any related pro rata additional commitment shares. The numerator is based on the number of shares issuable under the Purchase Agreement at the corresponding assumed purchase price set forth in the adjacent column. The number of shares in such column does not include shares that may be issued to Lincoln Park under the Purchase Agreement which are not registered in this offering. The table does not give effect to the prohibition contained in the Purchase Agreement that prevents us from selling and issuing to Lincoln Park shares such that, after giving effect to such sale and issuance, Lincoln Park and its affiliates would beneficially own more than 9.99% of the then outstanding shares of our common stock.

USE OF PROCEEDS

The 127,419 shares currently outstanding that are being offered for resale by Lincoln Park, the selling stockholder, will be sold for the account of Lincoln Park. As a result, all proceeds from the sales of the 127,419 shares of common stock currently outstanding and offered for resale hereby will go to Lincoln Park and we will not receive any proceeds from the resale of those shares of common stock by Lincoln Park.

We may receive up to \$20.0 million in gross proceeds if we issue to Lincoln Park all of the additional shares issuable pursuant to the Purchase Agreement. However, we are not registering for sale and are not offering under this prospectus all of the shares issuable pursuant to the Purchase Agreement. As we are unable to predict the timing or amount of potential issuances of all of the shares offered hereby, we have not allocated any proceeds of such issuances to any particular purpose. Accordingly, all such proceeds are expected to be used for working capital and general corporate purposes. It is possible that no shares will be issued under the Purchase Agreement.

After the issuance of any of the shares issuable under the Purchase Agreement, we would not receive any proceeds from the resale of those shares by Lincoln Park because those shares will be sold for the account of Lincoln Park.

We will incur all costs associated with this registration statement and prospectus.

SELLING STOCKHOLDER

The following table sets forth certain information regarding Lincoln Park, the selling stockholder, and the shares of common stock beneficially owned by it, which information is available to us as of February 28, 2017. Lincoln Park may offer the shares under this prospectus from time to time and may elect to sell some, all or none of the shares set forth under this prospectus. However, for the purposes of the table below, we have assumed that, after completion of the offering, none of the shares covered by this prospectus will be held by Lincoln Park. In addition, Lincoln Park may have sold, transferred or otherwise disposed of all or a portion of its shares of common stock since the date on which it provided information for this table. We have not made independent inquiries about such transfers or dispositions. See the section entitled “Plan of Distribution.”.

Beneficial ownership is determined in accordance with Rule 13d-3(d) promulgated by the SEC under the Exchange Act. The percentage of shares beneficially owned before the offering is based on 23,568,403 shares of our common stock outstanding as of February 28, 2017.

<u>Selling Stockholder</u>	<u>Number of Shares Beneficially Owned Before this Offering</u>	<u>Percentage of Outstanding Shares Beneficially Owned Before this Offering</u>	<u>Shares to be Sold in this Offering Assuming we issue the Maximum Number of Shares under the Purchase Agreement</u>	<u>Percentage of Outstanding Shares Beneficially Owned After this Offering</u>
Lincoln Park Capital Fund, LLC (1)	206,084 ⁽²⁾	* ⁽³⁾	6,509,677 ⁽⁴⁾	*

* Less than 1%.

- (1) Josh Scheinfeld and Jonathan Cope, the Managing Members of Lincoln Park Capital, LLC, are deemed to be beneficial owners of all of the shares of common stock owned by Lincoln Park Capital Fund, LLC. Messrs. Cope and Scheinfeld have shared voting and investment power over the shares being offered under the prospectus filed with the SEC in connection with the transactions contemplated under the Purchase Agreement. Lincoln Park Capital, LLC is not a licensed broker dealer or an affiliate of a licensed broker dealer.
- (2) Represents (i) 127,419 shares of our common stock issued to Lincoln Park on December 22, 2016 as an initial fee for its commitment to purchase shares of our common stock under the Purchase Agreement, all of which shares are covered by the registration statement that includes this prospectus and (ii) 78,665 shares and warrants to acquire shares previously acquired by Lincoln Park. See the description under the heading “The Lincoln Park Transaction” for more information about the Purchase Agreement.
- (3) Based on 23,568,403 outstanding shares of our common stock as of February 28, 2017, which includes 127,419 shares of our common stock issued to Lincoln Park on December 22, 2016 as an initial fee for its commitment to purchase additional shares of our common stock under the Purchase Agreement. Although we may at our discretion elect to sell to Lincoln Park up to an aggregate amount of \$20.0 million of our common stock under the Purchase Agreement, such shares are not included in determining the percentage of shares beneficially owned before this offering.
- (4) Assumes issuance of the maximum 6,509,677 shares being registered hereby.

DILUTION

Purchasers of our common stock in this offering will experience an immediate dilution of the net tangible book value per share of our common stock. Our net tangible book value as of December 31, 2016 was approximately \$(1.4) million, or \$(0.06) per share of our common stock (based upon 21,707,890 shares of our common stock outstanding). Net tangible book value per share is equal to our total tangible assets less our total liabilities, divided by the number of shares of our outstanding common stock.

Dilution in net tangible book value per share represents the difference between the amount per share paid by purchasers of common stock in this offering, assuming a purchase price of \$1.61 per share (the closing price of our common stock on March 29, 2017), and the as adjusted net tangible book value per share of common stock immediately after the completion of this offering. Therefore, after giving effect to our assumed receipt of \$9.5 million in estimated net proceeds from the issuance of 6,000,000 shares of common stock under the Purchase Agreement and registered in this offering (assuming a purchase price of \$1.61 per share for 6,000,000 shares, the issuance of 283,380 commitment shares for no additional cash consideration, offering expenses of \$115,000, and assuming all such sales and issuances were made on December 31, 2016), our as adjusted net tangible book value as of December 31, 2016 would have been \$8.2 million, or \$0.29 per share. This would represent an immediate increase in the net tangible book value of \$0.36 per share to existing stockholders and an immediate dilution of \$1.32 per share to new investors purchasing shares of our common stock in this offering. The following table illustrates this per share dilution:

Assumed public offering price per share of common stock		\$	1.61
Net tangible book value per share as of December 31, 2016		\$	(0.06)
Increase in net tangible book value per share attributable to this offering			0.36
As adjusted net tangible book value per share after this offering			0.29
Dilution per share to new investors		\$	<u>1.32</u>

The information above is as of December 31, 2016 and excludes:

- 636,112 shares of common stock issuable upon the exercise of stock options outstanding as of December 31, 2016 with a weighted average exercise price of \$24.39 per share;
- 515 shares of common stock issuable upon the vesting of restricted stock awards outstanding as of December 31, 2016;
- 525,965 shares of common stock available for future grants under our 2014 Equity Incentive Plan as of December 31, 2016;
- 33,333 shares of common stock available for future grants under our 2015 New Employee Incentive Plan as of December 31, 2016;
- 3,571,765 shares of our common stock issuable upon the exercise of outstanding warrants as of December 31, 2016 with a weighted-average exercise price of \$4.24 per share; and
- 687,272 shares of our common stock issued after December 31, 2016 pursuant to our at-the-market sales agreement.

MARKET PRICE OF OUR COMMON STOCK AND RELATED STOCKHOLDER MATTERS

From August 2000 (our initial public offering in Germany) until September 2007 our common stock was quoted on the Frankfurt Stock Exchange under the symbol “XMPA” (formerly XMP). In September 2007 our stock closed trading on the Frankfurt Stock Exchange. In December 2005, our common stock commenced trading on NASDAQ Capital Market under the symbol “CYTX.” From December 2005 until February 2006 our common stock traded on the NASDAQ Capital Market, from February 2006 until February 2016 it traded on the NASDAQ Global Market, and since February 2016 it has traded on the NASDAQ Capital Market. Our common stock has, from time to time, traded on a limited, sporadic and volatile basis. The following tables show the high and low sales prices for our common stock for the periods indicated. These prices do not include retail markups, markdowns or commissions.

	Price Ranges	
	High	Low
Fiscal Year Ended December 31, 2017		
First Quarter (through March 29, 2017)	\$2.13	\$1.45
Fiscal Year Ended December 31, 2016		
First Quarter	\$3.30	\$1.95
Second Quarter	\$5.25	\$2.00
Third Quarter	\$2.25	\$1.83
Fourth Quarter	\$2.00	\$1.36
Fiscal Year Ended December 31, 2015		
First Quarter	\$20.55	\$6.60
Second Quarter	\$20.25	\$8.40
Third Quarter	\$8.25	\$4.50
Fourth Quarter	\$6.30	\$2.85

The closing price of our common stock on March 29, 2017 was \$1.61 per share. All of our outstanding shares have been deposited with the Depository Trust & Clearing Corporation, or DTCC, since December 2005. As of February 28, 2017, we had approximately 25 record holders of our common stock. Because many of our shares are held by brokers and other institutions on behalf of stockholders, we are unable to estimate the total number of individual stockholders represented by these record holders.

DIVIDEND POLICY

We have never paid cash dividends on our common stock in the past and we currently anticipate that no cash dividends will be paid on common stock in the foreseeable future. Furthermore, our Loan and Security Agreement with Oxford Finance LLC currently prohibits our issuance of cash dividends. We expect as of the date hereof to retain any future earnings to fund the operation and expansion of our business.

DESCRIPTION OF CAPITAL STOCK

Common Stock

This section describes the general terms and provisions of the shares of our common stock, \$0.001 par value. This description is only a summary and is qualified in its entirety by reference to the description of our common stock included in our amended and restated of incorporation, as amended, and our amended and restated bylaws, as amended, which have been filed as exhibits to the registration statement of which this prospectus is a part. You should read our amended and restated of incorporation and our amended and restated bylaws for additional information before you buy any of our common stock or other securities. See “Where You Can Find More Information” and “Incorporation by Reference.”

We have 75,000,000 shares of authorized common stock. As of February 28, 2017, there were 23,568,403 shares of common stock issued and outstanding, warrants to purchase 3,571,765 shares of common stock outstanding, options to purchase 525,965 shares of common stock outstanding and 515 shares of common stock issuable upon vesting of restricted stock awards. The holders of common stock possess exclusive voting rights in us, except to the extent our board of directors specifies voting power with respect to any other class of securities issued in the future. Each holder of our common stock is entitled to one vote for each share held of record on each matter submitted to a vote of stockholders, including the election of directors. Stockholders do not have any right to cumulate votes in the election of directors.

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

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

Our common stock is listed on the NASDAQ Capital Market under the symbol “CYTX.”

Preferred Stock

We have 5,000,000 shares of authorized preferred stock, \$0.001 par value, 13,500 shares of which were issued and none of which were outstanding as of February 28, 2017. Of this amount, 13,500 shares have been designated Series A convertible preferred stock, none of which are outstanding as of February 28, 2017. Our board of directors is authorized, without action by our stockholders, to classify or reclassify any unissued portion of our authorized shares of preferred stock to provide for the issuance of shares of other classes or series, including preferred stock in one or more series. Our board of directors may fix or alter the dividend rights, dividend rate, conversion rights, voting rights, rights and terms of redemption (including sinking fund provisions), the redemption price or prices, the liquidation preferences of any wholly unissued series of Preferred Stock, and the number of shares constituting any such series and the designation thereof, or any of them. Our board of directors may also increase or decrease the number of shares of any series subsequent to the issue of shares of that series, but not below the number of shares of such series then outstanding. In case the number of shares of any series shall be so decreased, the shares constituting such decrease shall resume the status which they had prior to the adoption of the resolution originally fixing the number of shares of such series.

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

Delaware Anti-Takeover Statute

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

Board Vacancies

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

Undesignated Preferred Stock

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

Special Meeting Requirements

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

No Cumulative Voting

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

Authorized but Unissued Shares

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

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

Transfer Agent

The transfer agent and registrar for our common stock is Computershare Trust Company, N.A.

PLAN OF DISTRIBUTION

An aggregate of up to 6,509,677 shares of our common stock may be offered by this prospectus by Lincoln Park pursuant to the Purchase Agreement. The common stock may be sold or distributed from time to time by Lincoln Park directly to one or more purchasers or through brokers, dealers, or underwriters who may act solely as agents at market prices prevailing at the time of sale, at prices related to the prevailing market prices, at negotiated prices, or at fixed prices, which may be changed. The sale of the common stock offered by this prospectus could be affected in one or more of the following methods:

- ordinary brokers' transactions;
- transactions involving cross or block trades;
- through brokers, dealers, or underwriters who may act solely as agents;
- "at-the-market" into an existing market for the common stock;
- in other ways not involving market makers or established business markets, including direct sales to purchasers or sales effected through agents;
- in privately negotiated transactions; or
- any combination of the foregoing.

In order to comply with the securities laws of certain states, if applicable, the shares may be sold only through registered or licensed brokers or dealers. In addition, in certain states, the shares may not be sold unless they have been registered or qualified for sale in the state or an exemption from the state's registration or qualification requirement is available and complied with.

Lincoln Park is an "underwriter" within the meaning of Section 2(a)(11) of the Securities Act.

Lincoln Park has informed us that it intends to use an unaffiliated broker-dealer to effectuate all sales, if any, of the common stock that it may purchase from us pursuant to the Purchase Agreement. Such sales will be made at prices and at terms then prevailing or at prices related to the then current market price. Each such unaffiliated broker-dealer will be an underwriter within the meaning of Section 2(a)(11) of the Securities Act. Lincoln Park has informed us that each such broker-dealer will receive commissions from Lincoln Park that will not exceed customary brokerage commissions.

Brokers, dealers, underwriters or agents participating in the distribution of the shares as agents may receive compensation in the form of commissions, discounts, or concessions from Lincoln Park and/or purchasers of the common stock for whom the broker-dealers may act as agent. The compensation paid to a particular broker-dealer may be less than or in excess of customary commissions. Neither we nor Lincoln Park can presently estimate the amount of compensation that any agent will receive. We know of no existing arrangements between Lincoln Park or any other stockholder, broker, dealer, underwriter or agent relating to the sale or distribution of the shares offered by this prospectus. At the time a particular offer of shares is made, a prospectus supplement, if required, will be distributed that will set forth the names of any agents, underwriters or dealers and any compensation from Lincoln Park, and any other required information.

We will pay the expenses incident to the registration, offering, and sale of the shares to Lincoln Park. We have agreed to indemnify Lincoln Park and certain other persons against certain liabilities in connection with the offering of shares of common stock offered hereby, including liabilities arising under the Securities Act or, if such indemnity is unavailable, to contribute amounts required to be paid in respect of such liabilities. Lincoln Park has agreed to indemnify us against liabilities under the Securities Act that may arise from certain written information furnished to us by Lincoln Park specifically for use in this prospectus or, if such indemnity is unavailable, to contribute amounts required to be paid in respect of such liabilities.

Lincoln Park has represented to us that at no time prior to the Purchase Agreement has it or its agents, representatives or affiliates engaged in or effected, in any manner whatsoever, directly or indirectly, any short sale (as such term is defined in Rule 200 of Regulation SHO of the Exchange Act) of our common stock or any hedging transaction, which establishes a net short position with respect to our common stock. Lincoln Park has agreed that during the term of the Purchase Agreement, it, its agents, representatives or affiliates will not enter into or effect, directly or indirectly, any of the foregoing transactions.

We have advised Lincoln Park that it is required to comply with Regulation M promulgated under the Exchange Act. With certain exceptions, Regulation M precludes Lincoln Park, any affiliated purchasers, and any broker-dealer or other person who participates in the distribution from bidding for or purchasing, or attempting to induce any person to bid for or purchase any security which is the subject of the distribution until the entire distribution is complete. Regulation M also prohibits any bids or purchases made in order to stabilize the price of a security in connection with the distribution of that security. All of the foregoing may affect the marketability of the securities offered by this prospectus.

This offering will terminate on the date that all shares offered by this prospectus have been sold by Lincoln Park.

EXPERTS

The consolidated financial statements and schedule as of and for the year ended December 31, 2016 incorporated by reference in this prospectus have been so incorporated in reliance on the report of BDO USA, LLP, an independent registered public accounting firm (the report on the consolidated financial statements and schedule contains an explanatory paragraph regarding the Company's ability to continue as a going concern), incorporated herein by reference, given on the authority of said firm as experts in auditing and accounting.

KPMG LLP, independent registered public accounting firm, has audited the consolidated financial statements as of and for the year ended December 31, 2015 included in our Annual Report on Form 10-K for the year ended December 31, 2016, as set forth in their report, which is incorporated by reference in this prospectus. Our financial statements are incorporated by reference in reliance on KPMG LLP's report, given on their authority as experts in accounting and auditing.

The audit report covering the December 31, 2015 consolidated financial statements contains an explanatory paragraph that states that our recurring losses from operations, liquidity position and debt service requirements raises substantial doubt about our ability to continue as a going concern. The consolidated financial statements and financial statement schedule do not include any adjustments that might result from the outcome of that uncertainty.

We have agreed to indemnify and hold KPMG LLP harmless against and from any and all legal costs and expenses incurred by KPMG in successful defense of any legal action or proceeding that arises as a result of KPMG's consent to the incorporation by reference of its audit report on the Company's past financial statements incorporated by reference in this prospectus.

LEGAL MATTERS

The validity of the shares of common stock being offered by this prospectus will be passed upon for us by Latham & Watkins LLP, San Diego, California.

WHERE YOU CAN FIND MORE INFORMATION

We have filed a registration statement on Form S-1 with the SEC under the Securities Act. This prospectus is part of the registration statement but the registration statement includes additional information and exhibits. We file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy the registration statement and any document we file with the SEC at the public reference room maintained by the SEC at 100 F Street, N.E., Washington, D.C. 20549. You may obtain information on the operation of the public reference room by calling the SEC at 1-800-SEC-0330. The SEC also maintains a web site that contains reports, proxy and information statements and other information regarding companies, such as ours, that file documents electronically with the SEC. The website address is www.sec.gov. The information on the SEC's website is not part of this prospectus, and any references to this website or any other website are inactive textual references only.

INCORPORATION BY REFERENCE

The SEC permits us to "incorporate by reference" the information contained in documents we have filed with the SEC, which means that we can disclose important information to you by referring you to those documents rather than by including them in this prospectus. Information that is incorporated by reference is considered to be part of this prospectus and you should read it with the same care that you read this prospectus.

We incorporate by reference our documents listed below and any future filings made by us with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act between the date of this prospectus and the termination of the offering of the securities described in this prospectus. We are not, however, incorporating by reference any documents or portions thereof, whether specifically listed below or filed in the future, that are not deemed "filed" with the SEC, including our Compensation Committee report and performance graph or any information furnished pursuant to Items 2.02 or 7.01 of Form 8-K or related exhibits furnished pursuant to Item 9.01 of Form 8-K.

This prospectus incorporates by reference the documents set forth below that have previously been filed with the SEC:

- our Annual Report on Form 10-K for the year ended December 31, 2016, filed on March 24, 2017;
- our Current Reports on Form 8-K filed on January 19, 2017, February 15, 2017 and March 3, 2017; and
- the description of our common stock contained in our registration statement on Form 10/A filed on July 16, 2001 and any amendment or report filed with the SEC for the purpose of updating the description.

Any statement contained in any document incorporated by reference herein will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or any prospectus supplement modifies or supersedes such statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

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

We will provide without charge to each person, including any beneficial owner, to whom this prospectus is delivered, upon written or oral request, a copy of any or all documents that are incorporated by reference into this prospectus, but not delivered with the prospectus, other than exhibits to such documents unless such exhibits are specifically incorporated by reference into the documents that this prospectus incorporates. You should direct

6,509,677 Shares

CYTORI THERAPEUTICS, INC.

Common Stock



PROSPECTUS

March 30, 2017