



Subscription Rights to Purchase Up to 10,000 Units
Consisting of an Aggregate of Up to 10,000 Shares of Series B Preferred Stock
and Warrants to Purchase Up to 18,000,000 Shares of Common Stock
at a Subscription Price of \$1,000 Per Unit

This Prospectus Supplement No. 1 amends and supplements the prospectus dated November 2, 2017, which forms a part of our Registration Statement on Form S-1 (Registration No. 333-219967). This Prospectus Supplement No. 1 is being filed to amend and supplement certain information included in the prospectus with the information contained in this Prospectus Supplement No. 1.

The prospectus and this Prospectus Supplement No. 1 relate to our distribution to holders of our common stock, at no charge, non-transferable subscription rights to purchase units. Each unit, which we refer to as a Unit, consists of one share of Series B Preferred Stock and 1,800 warrants, which we refer to as the Warrants. Each Warrant will be exercisable for one share of our common stock. We refer to the offering that is the subject of this prospectus as the Rights Offering. In the Rights Offering, you will receive one subscription right for every share of common stock owned at 5:00 p.m., Eastern Time, on October 27, 2017, the record date of the Rights Offering, or the Record Date. The Series B Preferred Stock and the Warrants comprising the Units will separate upon the closing of the Rights Offering and will be issued separately but may only be purchased as a Unit, and the Units will not trade as a separate security. The subscription rights will not be tradable.

On November 14, 2017, we determined that the conversion price for the Series B Preferred Stock should be reduced to \$0.3333 per share and that the Warrant exercise price should be reduced to \$0.3333 per share. Accordingly, each subscription right will entitle you to purchase one Unit, which we refer to as the Basic Subscription Right, at a subscription price per Unit of \$1,000, which we refer to as the Subscription Price. Each Warrant entitles the holder to purchase one share of common stock at an exercise price of \$0.3333 per share from the date of issuance through its expiration 30 months from the date of issuance. If you exercise your Basic Subscription Rights in full, and any portion of the Units remain available under the Rights Offering, you will be entitled to an over-subscription privilege to purchase a portion of the unsubscribed Units at the Subscription Price, subject to proration and ownership limitations, which we refer to as the Over-Subscription Privilege. Each subscription right consists of a Basic Subscription Right and an Over-Subscription Privilege, which we refer to as the Subscription Right.

The Subscription Rights will expire if they are not exercised by 5:00 p.m., Eastern Time, on November 21, 2017, unless the Rights Offering is extended or earlier terminated by the Company. If we elect to extend the Rights Offering, we will issue a press release announcing the extension no later than 9:00 a.m., Eastern Time, on the next business day after the most recently announced expiration date of the Rights Offering. We may extend the Rights Offering for additional periods in our sole discretion. Once made, all exercises of Subscription Rights are irrevocable.

We have not entered into any standby purchase agreement or other similar arrangement in connection with the Rights Offering. The Rights Offering is being conducted on a best-efforts basis and there is no minimum amount of proceeds necessary to be received in order for us to close the Rights Offering.

We have engaged Maxim Group LLC to act as dealer-manager in the Rights Offering.

Investing in our securities involves a high degree of risk. See the section entitled "Risk Factors" beginning on page 20 of the prospectus. You should carefully consider these risk factors, as well as the information contained in this prospectus, before you invest.

Broadridge Corporate Issuer Solutions, Inc. will serve as the Subscription and Information Agent for the Rights Offering. The Subscription Agent will hold the funds we receive from subscribers until we complete, abandon or terminate the Rights Offering. If you want to participate in this Rights Offering and you are the record holder of your shares, we recommend that you submit your subscription documents to the Subscription Agent well before the deadline. If you want to participate in this Rights Offering and you hold shares through your broker, dealer, bank or other nominee, you should promptly contact your broker, dealer, bank or other nominee and submit your subscription documents in accordance with the instructions and within the time period provided by your broker, dealer, bank or other nominee. For a detailed discussion, see "The Rights Offering – The Subscription Rights."

Our board of directors reserves the right to terminate the Rights Offering for any reason any time before the closing of the Rights Offering. If we terminate the Rights Offering, all subscription payments received will be returned within 10 business days, without interest or deduction. We expect the Rights Offering to expire on or about November 21, 2017, subject to our right to extend the Rights Offering as described above, and that we would close on subscriptions within five business days.

Our common stock is listed on the Nasdaq Capital Market, or Nasdaq, under the symbol "CYTX." On November 14, 2017, the last reported sale price of our common stock was \$0.3701 per share. There is no established public trading market for the Series B Preferred Stock or the Warrants. We do not intend to apply for listing of the Series B Preferred Stock on any securities exchange or recognized trading system. We have applied to list the Warrants on Nasdaq following their issuance under the symbol "CYTXS." The Subscription Rights are non-transferrable and will not be listed for trading on Nasdaq or any other stock exchange or market. You are urged to obtain a current price quote for our common stock before exercising your Subscription Rights.

	Per Unit	Total⁽²⁾
Subscription price	\$ 1,000.000	\$ 10,000,000
Dealer-Manager fees and expenses ⁽¹⁾	\$ 77.500	\$ 775,000
Proceeds to us, before expenses	\$ 922.500	\$ 9,225,000

(1) In connection with this Rights Offering, we have agreed to pay to Maxim Group LLC as the dealer-manager a cash fee equal to (i) 6% of the gross proceeds received by us directly from exercises of the Subscription Rights if the amount of such gross proceeds is less than \$7.5 million or (b) 7% of the gross proceeds received by us directly from exercises of the Subscription Rights if the amount of such gross proceeds is at least \$7.5 million. We have also agreed to reimburse the dealer-manager for its expenses up to \$75,000. See "Plan of Distribution."

(2) Assumes the Rights Offering is fully subscribed, but excludes proceeds from the exercise of Warrants included within the Units.

Our board of directors is making no recommendation regarding your exercise of the Subscription Rights. You should carefully consider whether to exercise your Subscription Rights before the expiration date. You may not revoke or revise any exercises of Subscription Rights once made.

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.

Dealer-Manager

Maxim Group LLC

The date of this Prospectus Supplement is November 14, 2017

This Prospectus Supplement No. 1 amends and supplements the prospectus to reflect the reduction of the conversion price of the Series B Preferred Stock to \$0.3333 per share and the Warrant exercise price to \$0.3333 per share and to make related changes. All references in the prospectus to the Series B Preferred Stock conversion price of \$0.40 per share are hereby amended to \$0.3333 per share. All references to the 1,250 Warrants per Unit are hereby amended to reflect the 1,800 Warrants per Unit offered hereby. All references to the aggregate amount of Warrants to purchase up to 12,500,000 shares of common stock are hereby amended to Warrants to purchase up to 18,000,000 shares of common stock. All references to the Warrant exercise price of \$0.48 per share are hereby amended to \$0.3333 per share. All references to the Warrant redemption price of \$1.20 per Warrant are hereby amended to \$0.83325 per Warrant.

The sections of the prospectus entitled "Summary of the Rights Offering" and "Dilution" are hereby replaced by the following new Summary of the Rights Offering and Dilution sections (which reflect the changes to the conversion price of the Series B Preferred Stock and the exercise price of the Warrants).

This Prospectus Supplement No. 1 should be read in conjunction with and is qualified by reference to the prospectus, except to the extent that the information provided by this Prospectus Supplement No. 1 supersedes the information contained in the Prospectus.

SUMMARY OF THE RIGHTS OFFERING

Securities to be offered	We are distributing to you, at no charge, one non-transferable Subscription Right to purchase one Unit for every share of our common stock that you owned on the Record Date. Each Unit consists of one share of Series B Preferred Stock and 1,800 Warrants.
Size of offering	10,000 Units.
Subscription Price	\$1,000 per Unit.
Series B Preferred Stock	Each share of Series B Preferred Stock will be convertible, at our option at any time on or after the first anniversary of the closing of the Rights Offering or at the option of the holder at any time, into the number of shares of our common stock determined by dividing the \$1,000 stated value per share of the Series B Preferred Stock by a conversion price of \$0.3333 per share, subject to adjustment. The Series B Preferred Stock has certain conversion rights, dividend rights and liquidation preferences.
Warrants	Each Warrant entitles the holder to purchase one share of common stock at an exercise price of \$0.3333 per share, subject to adjustment, from the date we obtain stockholder approval of an amendment to our certificate of incorporation to increase our authorized shares of common stock, which we refer to as the Stockholder Approval, through its expiration 30 months from the date of issuance. The Warrants will be exercisable for cash, or, solely during any period when a registration statement for the exercise of the Warrants is not in effect, on a cashless basis, at any time and from time to time after the date the Stockholder Approval is obtained. We have applied to list the Warrants on Nasdaq under the symbol "CYTXS," although there is no assurance that a sufficient number of Subscription Rights will be exercised so that the Warrants will meet the minimum listing criteria to be accepted for listing on Nasdaq. We may redeem the Warrants for \$0.01 per Warrant if our common stock closes above \$0.83325 per share for ten consecutive trading days, provided that we may not do so prior to the first anniversary of closing of the Rights Offering.
Record Date	5:00 p.m., Eastern Time, October 27, 2017.
Basic Subscription Rights	Your Basic Subscription Right will entitle you to purchase one Unit at the Subscription Price.
Over-Subscription Privilege	If you exercise your Basic Subscription Rights in full, you may also choose to purchase a portion of any Units that are not purchased by our other stockholders through the exercise of their Basic Subscription Rights, subject to proration and stock ownership limitations described elsewhere in this prospectus.
Expiration date	The Subscription Rights will expire at 5:00 p.m., Eastern Time, on November 21, 2017.

Procedure for exercising Subscription Rights

To exercise your Subscription Rights, you must take the following steps:

If you are a record holder of our common stock, you must deliver payment and a properly completed Rights Certificate to the Subscription Agent to be received before 5:00 p.m., Eastern Time, on November 21, 2017. You may deliver the documents and payments by first class mail or courier service. If you use first class mail for this purpose, we recommend using registered mail, properly insured, with return receipt requested.

If you are a beneficial owner of shares that are registered in the name of a broker, dealer, bank or other nominee, you should instruct your broker, dealer, bank or other nominee to exercise your Subscription Rights on your behalf. Please follow the instructions of your nominee, who may require that you meet a deadline earlier than 5:00 p.m., Eastern Time, on November 21, 2017.

Delivery of Shares and Warrants

As soon as practicable after the expiration of the Rights Offering, and within five business days thereof, we expect to close on subscriptions and for the Subscription Agent to arrange for the issuance of the shares of Series B Preferred Stock and Warrants purchased pursuant to the Rights Offering. All shares and Warrants that are purchased in the Rights Offering will be issued in book-entry, or uncertificated, form meaning that you will receive a direct registration, or DRS, account statement from our transfer agent reflecting ownership of these securities if you are a holder of record of shares or warrants. If you hold your shares in the name of a bank, broker, dealer, or other nominee, DTC will credit your account with your nominee with the securities you purchased in the Rights Offering.

Non-transferability of Subscription Rights

The Subscription Rights may not be sold, transferred, assigned or given away to anyone. The Subscription Rights will not be listed for trading on any stock exchange or market.

Transferability of Warrants

The Warrants will be separately transferable following their issuance and through their expiration 30 months from the date of issuance.

No board recommendation

Our board of directors is not making a recommendation regarding your exercise of the Subscription Rights. You are urged to make your decision to invest based on your own assessment of our business and financial condition, our prospects for the future, the terms of the Rights Offering, the information in this prospectus and other information relevant to your circumstances. Please see "Risk Factors" for a discussion of some of the risks involved in investing in our securities.

No revocation

All exercises of Subscription Rights are irrevocable, even if you later learn of information that you consider to be unfavorable to the exercise of your Subscription Rights.

Use of proceeds

Assuming the exercise of Subscription Rights to purchase all 10,000 Units of the Rights Offering, after deducting fees and expenses and excluding any proceeds received upon exercise of any Warrants, we estimate the net proceeds of the Rights Offering will be approximately \$8.9 million. We intend to use up to approximately the first \$8 million of the net proceeds from the exercise of Subscription Rights for research and development, including the development of our current pipeline and, if funds remain, for further development of our Celution System products and other related research and development. In addition, we intend to use any remaining net proceeds for general corporate purposes, primarily sales and marketing initiatives relating to our potential commercialization of our Habeo scleroderma therapy and our ATI-0918 in Europe, and any other remaining net proceeds for general administrative expenses, working capital and capital expenditures. See "Use of Proceeds."

Material U.S. federal income tax consequences

For U.S. federal income tax purposes, we do not believe you should recognize income or loss upon receipt or exercise of a Subscription Right. You should consult your own tax advisor as to the tax consequences of the Rights Offering in light of your particular circumstances. See "Material U.S. Federal Income Tax Consequences."

Extension and termination

Although we do not presently intend to do so, we may extend the Rights Offering for additional time in our sole discretion. Our board of directors may for any reason terminate the Rights Offering at any time before the completion of the Rights Offering.

Subscription and Information Agent

Broadridge Corporate Issuer Solutions, Inc.

Questions

If you have any questions about the Rights Offering, please contact the Subscription and Information Agent, Broadridge Corporate Issuer Solutions, Inc., at (855) 793-5068 (toll free).

Market for common stock

Our common stock is listed on NASDAQ under the symbol "CYTX."

Market for preferred stock

There is no established public trading market for the Series B Preferred Stock, and we do not expect a market to develop. In addition, we do not intend to apply for listing of the Series B Preferred Stock on any securities exchange or recognized trading system.

Dealer-Manager

Maxim Group LLC.

DILUTION

Purchasers of Units in the Rights 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 September 30, 2017 was approximately \$(3.6) million, or \$(0.10) per share of our common stock (based upon 34,716,318 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 per share of common stock equals the difference between the amount per share of common stock paid by purchasers of Units in the Rights Offering (assuming the conversion of shares of Series B Preferred Stock into common stock and ascribing no value to the Warrants contained in the Units) and the net tangible book value per share of our common stock immediately after the Rights Offering.

Based on the sale by us in this Rights Offering of a maximum of 10,000 Units at the Subscription Price of \$1,000 per Unit (assuming the conversion of all shares of Series B Preferred Stock into common stock and no exercise of the Warrants), and after deducting estimated offering expenses and dealer-manager fees and expenses payable by us, our pro forma net tangible book value as of September 30, 2017 would have been approximately \$5.3 million, or \$0.08 per share. This represents an immediate increase in pro forma net tangible book value to existing stockholders of \$0.19 per share and an immediate dilution to purchasers in the Rights Offering of \$0.25 per share. The following table illustrates this per-share dilution:

Subscription Price		\$	1,000
Conversion price per share of Series B Preferred Stock contained in a Unit		\$	0.3333
Net tangible book value per share as of September 30, 2017		\$	(0.10)
Increase in net tangible book value per share attributable to Rights Offering		\$	0.19
Pro forma net tangible book value per share as of September 30, 2017, after giving effect to Rights Offering		\$	0.08
Dilution in net tangible book value per share to purchasers in the Rights Offering		\$	0.25

The information above is as of September 30, 2017 and excludes:

- 1,141,040 shares of common stock issuable upon the exercise of stock options outstanding as of September 30, 2017 with a weighted average exercise price of \$12.58 per share;
- 515 shares of common stock issuable upon the vesting of outstanding restricted stock awards;
- 2,007,596 shares of common stock available for future grants under our 2014 Equity Incentive Plan as of September 30, 2017;
- 259,833 shares of common stock available for future grants under our 2015 New Employee Incentive Plan as of September 30, 2017;
- 3,619,735 shares of our common stock issuable upon the exercise of outstanding warrants as of September 30, 2017 with a weighted-average exercise price of \$4.00 per share;
- 403,092 shares of our common stock issued after September 30, 2017 pursuant to our equity line of credit; and
- the shares of our common stock issuable upon the exercise of the Warrants offered hereby.

PROSPECTUS

Subscription Rights to Purchase Up to 10,000 Units
Consisting of an Aggregate of Up to 10,000 Shares of Series B Preferred Stock
and Warrants to Purchase Up to 18,000,000 Shares of Common Stock
at a Subscription Price of \$1,000 Per Unit

Dealer-Manager

Maxim Group LLC

November 14, 2017