

CELL THERAPEUTICS INC
Form 424B5
June 30, 2011
Table of Contents

PROSPECTUS SUPPLEMENT
(To Prospectus Dated February 16, 2011)

Filed Pursuant to Rule 424(b)(5)
Registration Statement No.: 333-161442

CELL THERAPEUTICS, INC.

30,000 Shares of Series 13 Preferred Stock

Warrants to Purchase 8,820,000 Shares of Common Stock

Pursuant to this prospectus supplement and the accompanying prospectus, we are offering 30,000 shares of Series 13 Convertible Preferred Stock, or the Series 13 Preferred Stock, and warrants to purchase up to 8,820,000 shares of common stock, or the warrants (and the approximately 26,467,059 shares of common stock issuable from time to time upon conversion of the Series 13 Preferred Stock and exercise of the warrants), to certain institutional investors (including Rodman & Renshaw, LLC), or, collectively, the Initial Purchasers. The purchase price for each share of Series 13 Preferred Stock and a warrant to purchase 294 shares of common stock is \$1,000. Each warrant to purchase shares of our common stock will have an exercise price of \$2.15 per share. The warrants are exercisable beginning six months and one day after the date of issuance and expire five years and one day after the date of issuance.

For a more detailed description of the Series 13 Preferred Stock and warrants, see the sections entitled "Description of Series 13 Preferred Stock" and "Description of Warrants" beginning on pages S-32 and S-35, respectively, of this prospectus supplement. For a more detailed description of our common stock issuable upon conversion of the Series 13 Preferred Stock and exercise of the warrants, see the section entitled "Description of Capital Stock" beginning on page S-36 of this prospectus supplement.

Rodman & Renshaw, LLC acted as the sole placement agent and book runner on this transaction. Other than the purchase of 3,000 shares of the Series 13 Preferred Stock and warrants for its own account, and for the account of others, on the same terms and conditions as all other Initial Purchasers in this offering, the placement agent is not purchasing or selling any other securities nor is it required to sell any specific number or dollar amount of securities, but has agreed to use its reasonable best efforts to sell the other securities offered by this prospectus supplement.

This prospectus supplement and the accompanying prospectus also cover the sale of these securities to the public.

The Series 13 Preferred Stock and warrants will not be listed on any national securities exchange. Our common stock is quoted on The NASDAQ Capital Market and on the Mercato Telematico Azionario, or the MTA, stock market in Italy under the symbol CTIC. On June 29, 2011, the last reported sale price of our common stock on The NASDAQ Capital Market was \$1.96.

Investing in our securities involves a high degree of risk. See the section entitled Risk Factors beginning on page S-9 of this prospectus supplement and in the documents we incorporate by reference in this prospectus supplement to read about factors you should consider before investing in our securities.

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

| | Shares of Series 13 Preferred Stock and warrants | Per share of Series 13 Preferred Stock and warrant(1) | Total |
|--|---|--|---------------|
| Offering price of the Series 13 Preferred Stock and warrants | 30,000 | \$ 1,000 | \$ 30,000,000 |
| Placement agent fees(2) | | \$ 50 | \$ 1,500,000 |
| Total proceeds to us before other expenses | | \$ 950 | \$ 28,500,000 |

(1) Table excludes shares of common stock issuable upon conversion of the Series 13 Preferred Stock and exercise of the warrants offered hereby.

(2) A fee equal to 5% of the aggregate proceeds raised in this offering will be payable to the placement agent.

In addition to the placement agent fees, the placement agent will receive warrants to purchase up to 352,941 shares of common stock registered pursuant to this prospectus supplement. Trout Capital LLC will also receive a cash fee of 1% of the aggregate proceeds raised in this offering, plus warrants to purchase up to 176,471 shares of common stock registered pursuant to this prospectus supplement, for financial advisory services.

The Series 13 Preferred Stock and warrants will be delivered to the Initial Purchasers on or about July 5, 2011.

This prospectus supplement is dated June 29, 2011.

Table of Contents

TABLE OF CONTENTS

Prospectus Supplement

| | Page |
|--|-------------|
| <u>ABOUT THIS PROSPECTUS SUPPLEMENT</u> | S-ii |
| <u>WHERE YOU CAN FIND MORE INFORMATION</u> | S-ii |
| <u>INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE</u> | S-ii |
| <u>SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS</u> | S-iii |
| <u>SUMMARY</u> | S-1 |
| <u>THE OFFERING</u> | S-7 |
| <u>RISK FACTORS</u> | S-9 |
| <u>USE OF PROCEEDS</u> | S-30 |
| <u>DETERMINATION OF OFFERING PRICE</u> | S-31 |
| <u>RATIO OF EARNINGS TO COMBINED FIXED CHARGES AND PREFERRED STOCK DIVIDENDS</u> | S-31 |
| <u>DIVIDEND POLICY</u> | S-31 |
| <u>DESCRIPTION OF SERIES 13 PREFERRED STOCK</u> | S-32 |
| <u>DESCRIPTION OF WARRANTS</u> | S-35 |
| <u>DESCRIPTION OF CAPITAL STOCK</u> | S-36 |
| <u>PLAN OF DISTRIBUTION</u> | S-38 |
| <u>CERTAIN U.S. FEDERAL INCOME TAX CONSIDERATIONS</u> | S-40 |
| <u>LEGAL MATTERS</u> | S-40 |

Prospectus

| | Page |
|---|-------------|
| <u>ABOUT THIS PROSPECTUS</u> | 1 |
| <u>WHERE YOU CAN FIND MORE INFORMATION</u> | 1 |
| <u>INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE</u> | 2 |
| <u>SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS</u> | 3 |
| <u>SUMMARY</u> | 4 |
| <u>RISK FACTORS</u> | 8 |
| <u>RATIO OF EARNINGS TO FIXED CHARGES AND OF EARNINGS TO COMBINED FIXED CHARGES AND PREFERRED STOCK DIVIDENDS</u> | 9 |
| <u>USE OF PROCEEDS</u> | 9 |
| <u>DIVIDEND POLICY</u> | 9 |
| <u>DESCRIPTION OF CAPITAL STOCK</u> | 10 |
| <u>DESCRIPTION OF DEBT SECURITIES</u> | 13 |
| <u>DESCRIPTION OF WARRANTS</u> | 20 |
| <u>DESCRIPTION OF RIGHTS</u> | 24 |
| <u>DESCRIPTION OF UNITS</u> | 24 |
| <u>LEGAL OWNERSHIP OF SECURITIES</u> | 25 |
| <u>PLAN OF DISTRIBUTION</u> | 29 |
| <u>LEGAL MATTERS</u> | 33 |
| <u>EXPERTS</u> | 33 |

You should rely only on the information contained or incorporated by reference in this prospectus supplement or the accompanying prospectus. We have not authorized anyone to provide you with different information.

We are not making an offer of the Series 13 Preferred Stock and warrants (or the shares of common stock issuable from time to time upon conversion of the Series 13 Preferred Stock and exercise of the warrants) covered by this prospectus supplement in any

jurisdiction where the offer is not permitted.

The information contained in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference is accurate only as of its respective date, regardless of the time of delivery of this prospectus supplement and the accompanying prospectus, or of any sale of the Series 13 Preferred Stock and warrants (or the shares of common stock issuable from time to time upon conversion of the Series 13 Preferred Stock and exercise of the warrants). You should not assume that the information contained in or incorporated by reference in this prospectus supplement or the accompanying prospectus is accurate as of any date other than the respective dates thereof.

S-i

Table of Contents

ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is this prospectus supplement, which describes the specific terms of this offering of Series 13 Preferred Stock and warrants (and the shares of common stock issuable from time to time upon conversion of the Series 13 Preferred Stock and exercise of the warrants) and also adds to and updates information contained in the accompanying prospectus and the documents incorporated by reference. The second part is the accompanying prospectus, which gives more general information. To the extent there is a conflict between the information contained in this prospectus supplement, on the one hand, and the information contained in the accompanying prospectus or any document incorporated by reference, on the other hand, you should rely on the information in this prospectus supplement.

You should read this prospectus supplement, the accompanying prospectus and the documents incorporated by reference before making an investment decision. You should also read and consider the information in the documents we have referred you to in the section of this prospectus supplement entitled "Incorporation of Certain Documents by Reference."

In this prospectus supplement, the terms "CTI," "Company," "we," "us," "our" and similar terms refer to Cell Therapeutics, Inc., a Washington corporation and its subsidiaries, unless the context otherwise requires.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the information requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act. In accordance with the Exchange Act, we file reports, proxy statements and other information with the Securities and Exchange Commission, or the SEC. Such reports, proxy statements and other information filed by us are available to the public free of charge at www.sec.gov. Copies of certain information filed by us with the SEC are also available on our website at www.celltherapeutics.com. You may also read and copy any document we file with the SEC at the public reference facilities 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 facilities by calling the SEC at 1-800-SEC-0330.

This prospectus supplement and the accompanying prospectus are part of a registration statement that we filed with the SEC. This prospectus supplement and the accompanying prospectus omit some information contained in the registration statement in accordance with SEC rules and regulations. You should review the information and exhibits in the registration statement for further information about us and the securities being offered hereby. Statements in this prospectus supplement or the accompanying prospectus concerning any document we filed as an exhibit to the registration statement or that we otherwise filed with the SEC are not intended to be comprehensive and are qualified by reference to these filings. You should review the complete document to evaluate these statements.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

SEC rules allow us to incorporate by reference into this prospectus supplement and the accompanying prospectus much of the information we file with the SEC, which means that we can disclose important information to you by referring you to those publicly available documents. The information that we incorporate by reference into this prospectus supplement and the accompanying prospectus is considered to be part of this prospectus supplement and the accompanying prospectus. This prospectus supplement and the accompanying prospectus incorporate by reference the documents listed below and any future filings we make with the SEC under Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act (in each case, other than those documents or the portions of those documents deemed to be furnished and not filed in accordance with SEC rules) until the offering of the securities under the registration statement is terminated or completed:

our Annual Report on Form 10-K for the fiscal year ended December 31, 2010 filed with the SEC on February 16, 2011;

our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2011 filed with the SEC on April 26, 2011;

our Current Reports on Form 8-K filed with the SEC on January 18, 2011 (as amended by our Current Report on Form 8-K/A filed with the SEC on January 28, 2011), February 24, 2011 (as amended by our Current Report on Form 8-K/A filed with the SEC on March 7, 2011), March 14, 2011, March 15, 2011, March 22, 2011, May 2, 2011, May 3, 2011, May 6, 2011, May 18, 2011, June 17, 2011 and June 29, 2010; and

Table of Contents

the description of our capital stock contained in our Registration Statement on Form 10 filed with the SEC on June 27, 1996, as amended.

Because we are incorporating by reference future filings with the SEC, this prospectus supplement and the accompanying prospectus are continually updated and later information filed with the SEC may update and supersede some of the information included or incorporated by reference in this prospectus supplement and the accompanying prospectus. This means that you must look at all of the SEC filings that we incorporate by reference to determine if any of the statements in this prospectus supplement and the accompanying prospectus or in any document previously incorporated by reference have been modified or superseded.

We will provide without charge to each person, including any beneficial owners, to whom this prospectus supplement is delivered, upon his or her written or oral request, a copy of any or all documents referred to above which have been or may be incorporated by reference into this prospectus supplement and the accompanying prospectus but not delivered with this prospectus supplement, excluding exhibits to those documents unless they are specifically incorporated by reference into those documents. You may request a copy of these documents by writing or telephoning us at the following address:

Cell Therapeutics, Inc.

501 Elliott Avenue West, Suite 400

Seattle, Washington 98119

(206) 282-7100

Attention: Investor Relations

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and the documents incorporated by reference may contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Exchange Act. All statements other than statements of historical fact are forward-looking statements for purposes of these provisions, including:

any statements regarding future operations, plans, regulatory filings or approvals;

any statements regarding the performance, or likely performance, or outcomes or economic benefit of any licensing or other agreement, including any agreement with Novartis International Pharmaceutical Ltd., or Novartis, or its affiliates, or Chroma Therapeutics Ltd., or Chroma, or its affiliates, including whether or not such partner will elect to participate, terminate or otherwise make elections under any such agreement or whether any regulatory authorizations required to enable such agreement will be obtained;

any projections of cash resources, revenues, operating expenses or other financial terms;

any statements of the plans and objectives of management for future operations or programs;

any statements concerning proposed new products or services;

any statements on plans regarding proposed or potential clinical trials or new drug filing strategies or timelines;

Edgar Filing: CELL THERAPEUTICS INC - Form 424B5

any statements regarding compliance with the listing standards of The NASDAQ Stock Market, or NASDAQ;

any statements regarding pending or future mergers or acquisitions; and

any statements regarding future economic conditions or performance, and any statement of assumptions underlying any of the foregoing.

In some cases, forward-looking statements can be identified by terms such as anticipates, believes, continue, could, estimates, expects, plans, potential, predicts, should or will or the negative thereof or other comparable terms. Such statements are based on management's current expectations and are subject to risks and uncertainties which may cause actual results to differ materially from those set forth in the forward-looking statements. There can be no assurance that such expectations or any of the forward-looking statements will prove to be correct, and actual results could differ materially from those projected or assumed in the forward-looking statements. Our future financial condition and results of operations, as well as any forward-looking statements, are subject to inherent risks and uncertainties, including, but not limited to, the risk factors described in the section of this prospectus supplement entitled Risk Factors. All forward-looking statements and reasons why results may differ included in this prospectus supplement are made as of the date hereof, and we assume no obligation to update any such forward-looking statement or reason why actual results might differ, except to the extent required by law.

S-iii

Table of Contents

SUMMARY

The following summary highlights information contained elsewhere, or incorporated by reference, in this prospectus supplement and the accompanying prospectus. The following summary does not contain all of the information that you should consider before investing in our securities. To understand this offering fully, you should read this entire prospectus supplement and the accompanying prospectus carefully, including the financial statements and the documents incorporated by reference.

Our Company

We develop, acquire and commercialize novel treatments for cancer. Our goal is to build a leading biopharmaceutical company with a diversified portfolio of proprietary oncology drugs. Our research, development, acquisition and in-licensing activities concentrate on identifying and developing new, less toxic and more effective ways to treat cancer. Our operations are primarily conducted in the United States. We are currently focusing our efforts on Pixuvri (pixantrone dimaleate), OPAXIO (paclitaxel poliglumex), tosedostat and brostallicin.

Corporate Information

We were incorporated in the State of Washington in 1991. Our shares of common stock trade on The NASDAQ Capital Market and the MTA in Italy under the symbol CTIC. Our principal executive offices are located at 501 Elliott Avenue West, Suite 400, Seattle, Washington 98119, and our phone number is (206) 282-7100. Our website is located at www.celltherapeutics.com; however, the information in, or that can be accessed through, our website is not part of this prospectus supplement or the accompanying prospectus.

Recent Developments

Pixuvri

NDA Appeal

As previously announced on May 3, 2011, the Office of New Drugs, or OND, of the U.S. Food and Drug Administration, or FDA, responded to our December 2010 appeal of the FDA's April 2010 decision to not approve Pixuvri for relapsed or refractory aggressive non-Hodgkin's lymphoma, or NHL. We previously met with officials of the OND regarding our appeal of the FDA's decision to present our arguments supporting our belief that the data contained in the New Drug Application, or NDA, support the conclusion that Pixuvri is effective for its planned use. In its response, the OND indicated that after considering the data available in the appeal, it does not believe that accelerated approval of our NDA is necessarily out of reach based on a single controlled clinical trial, provided that two key matters can be resolved satisfactorily. First, the circumstances of stopping the PIX301 trial early must be resolved to assure that ongoing results assessment were not dictating the decision to stop. Second, ascertainment of the primary endpoint in the PIX301 study must be determined to have been sound and not subject to bias.

The OND also indicated that our request that the OND find that the data in the NDA demonstrate efficacy and return the NDA to the Office of Oncology Drug Products for consideration of safety and other issues was denied because the OND was not able to conclude that efficacy had been demonstrated. However, the OND also did not find that it could be concluded that PIX301 was a failed study, which warranted application of interim analysis statistical thresholds. The OND further indicated that we could re-submit the NDA for a re-review of the safety and efficacy, provided that the two key matters can be resolved satisfactorily.

On June 14, 2011, we announced that we had met with the FDA's Division of Oncology Drug Products, or DODP, in a meeting that focused on the documents we proposed to provide regarding the circumstances of stopping the enrollment of PIX301 prior to achieving the original planned patient accrual and the make-up of the new radiology expert panel as well as our plan to address the items noted in the FDA's Complete Response Letter. The DODP confirmed that the NDA would be reviewed within six months from the resubmission of the NDA. We anticipate filing the additional information later this year; accordingly, it is possible that we could obtain FDA approval as early as the first half of 2012. However, you should not infer that the aforementioned developments increase the likelihood of FDA approval of the NDA or that the FDA, OND or DODP will not require additional actions or information.

Table of Contents

European Medicines Agency

In July 2009, we were notified by the European Medicines Agency, or EMA, that Pixuvri was eligible to be submitted for a Marketing Authorization Application, or an MAA, through the EMA's centralized procedure. The centralized review process provides for a single coordinated review for approval of pharmaceutical products that is conducted by the EMA on behalf of all European Union, or EU, member states. The EMA also designated Pixuvri as a New Active Substance, or NAS; if approved by the EMA, compounds designated as an NAS are eligible to receive a 10-year market exclusivity period in EU member states. In November 2010, the MAA seeking approval for Pixuvri for the treatment of adult patients with multiple relapsed or refractory aggressive NHL was validated and accepted for review by the EMA. In March 2011, we received the Day 120 list of questions from the EMA. In April 2011, we met with the co-rapporteurs and members of the EMA to discuss our proposed responses. Based on feedback and recommendation from the rapporteur, in order to allow time for preclinical reports to be available, we requested and were granted an extension so that our Day 120 responses will address the questions in the Day 120 list. We anticipate submission of data and information addressing the Day 120 questions in late August 2011.

Tosedostat

In March 2011, we entered into a co-development and license agreement with Chroma providing us with exclusive marketing and co-development rights to Chroma's drug candidate tosedostat in North, Central and South America. Tosedostat is an oral, aminopeptidase inhibitor that has demonstrated significant anti-tumor responses in blood related cancers and solid tumors in phase I-II clinical trials. We, in collaboration with Chroma, expect to commence one or more clinical trials in the United States and Europe in patients with hematologic malignancies. The first trial is expected to begin enrollment prior to year-end.

Recent Series 12 Preferred Stock Financing

On April 27, 2011, we entered into a securities purchase agreement with various purchasers party thereto pursuant to which we agreed to issue in a registered offering shares of our Series 12 Preferred Stock, no par value per share, initially convertible into approximately 7.6 million shares of common stock (as adjusted to reflect the one-for-six reverse stock split effected on May 15, 2011), and warrants to purchase up to approximately 3.0 million shares of common stock (as adjusted to reflect the one-for-six reverse stock split effected on May 15, 2011), for an aggregate offering price of approximately \$16.0 million. Each warrant has an exercise price of \$2.40 per share of common stock (as adjusted to reflect the one-for-six reverse stock split effected on May 15, 2011). The warrants are exercisable commencing on the date of issuance and expire five years and one day after the date of issuance.

Table of Contents

The purchasers elected to convert all shares of Series 12 Preferred Stock and to receive the approximately 7.6 million shares of common stock (as adjusted to reflect the one-for-six reverse stock split effected on May 15, 2011) issuable upon such conversion at the closing of the financing on May 3, 2011.

Retirement of 7.5% Convertible Senior Notes

On May 2, 2011, we announced that we had deposited \$10.6 million in cash as trust funds with U.S. Bank National Association, as the trustee of our outstanding 7.5% convertible senior notes, or the 7.5% Notes, representing an amount sufficient to pay and discharge the entire amount due on the 7.5% Notes, including accrued and unpaid interest. As of the date of this prospectus, we have only one series of convertible senior notes on our balance sheet, which mature in December 2011.

Notice from NASDAQ and Reverse Stock Split

On May 3, 2011, we received a notice from NASDAQ, stating that we had not regained compliance with NASDAQ's \$1.00 minimum bid price rule under NASDAQ Marketplace Rule 5550(a)(2), or Rule 5550(a)(2). As previously disclosed, on May 3, 2010, we were notified by NASDAQ that we did not meet Rule 5550(a)(2) and were provided until November 1, 2010 to achieve compliance, and on November 2, 2010, we received a notice from NASDAQ indicating that NASDAQ granted us an additional 180 days, or until May 2, 2011, to regain compliance with Rule 5550(a)(2) for continued listing.

On May 5, 2011, in an effort to regain compliance with the NASDAQ listing requirements and increase the per-share trading price of our common stock, our board of directors approved a reverse stock split. On May 13, 2011, we filed Articles of Amendment to our amended and restated articles of incorporation, as amended, or our articles of incorporation, with the Secretary of State of the State of Washington to implement the reverse stock split and reflect the decrease of our total number of authorized shares from 1,210,000,000 shares to 201,666,666 shares and the number of authorized shares of common stock from 1,200,000,000 shares to 200,000,000 shares. On May 15, 2011, the effective date of the reverse stock split, each holder of our common stock received one new share of common stock in exchange for every six shares of common stock such holder owned on the record date.

On June 1, 2011, we announced that we received a letter from NASDAQ indicating that we had regained compliance with Rule 5550(a)(2) and that we were in compliance with all applicable listing standards. As a result, our common stock will continue to be listed and traded on The NASDAQ Capital Market. See Risk Factors Risks Related to Our Company Our common stock is listed on The NASDAQ Capital Market and the MTA in Italy and we may not be able to maintain those listings or trading on these exchanges may be halted or suspended, which may make it more difficult for investors to sell shares of our common stock.

Increase in Authorized Shares

On June 17, 2011, at our special meeting of shareholders, our shareholders approved a proposal to amend our articles of incorporation to reflect an increase in the total number of authorized shares from 201,666,666 to 284,999,999 and an increase in our authorized shares of common stock from 200,000,000 to 283,333,333.

Value Added Tax Assessment

On April 14, 2009 and December 21, 2009, the Italian Tax Authority, or the ITA, issued notices of assessment to CTI (Europe) based on the ITA's audit of CTI (Europe)'s VAT returns for the years 2003 and 2005, respectively. On June 25, 2010, the ITA issued notices of assessment to CTI (Europe) for the years 2006 and 2007 based on similar findings for the 2003 and 2005 assessments. The ITA audits concluded that CTI (Europe) did not collect and remit VAT on certain invoices issued to non-Italian clients for services performed by CTI (Europe). The assessments, including interest and penalties, for the years 2003, 2005, 2006 and 2007 are 0.5 million, 5.5 million, 2.5 million and 0.8 million, or approximately \$0.8 million, \$7.8 million, \$3.6 million and \$1.2 million converted using the currency exchange rate as of March 31, 2011, respectively. We believe that the services invoiced were non-VAT taxable consultancy services and that the VAT returns are correct as originally filed. We are vigorously defending ourselves against the assessments both on procedural grounds and on the merits of the case. If the decision of the Provincial Tax Court of Milan, or the Tax Court, is unfavorable, then we expect to appeal to the higher courts in order to further defend our interests. However, if we are unable to successfully defend ourselves against the assessments issued by the ITA, we may be requested to pay to the ITA an amount ranging from 4.9 million to 9.4 million, or approximately \$7.0 million to \$13.3 million converted using the currency exchange rate as of March 31, 2011, plus collection fees, notification expenses and additional interest for the period lapsed between the date in which the assessments were issued and the date of effective payment. On February 2, 2011, we paid to the ITA the required deposit in respect of the 2005 VAT in the amount of 1.5 million, or approximately \$2.1 million converted using the currency exchange rate as of February 2, 2011. On March 4, 2011, we paid to the ITA the required deposit in respect of the 2006 VAT in the amount of 0.4 million, or

approximately \$0.6 million converted using the currency exchange rate as of March 4, 2011.

S-3

Table of Contents

2003 VAT. As of the date of this prospectus supplement, we have not received a notice from the ITA requesting a deposit payment for the VAT based on the 2003 assessment. The first hearing for the discussion of the merits of the case was held on March 18, 2011. The Tax Court has not yet released a decision with respect to the 2003 VAT.

2005 VAT. On July 14, 2010, the ITA issued a notice requiring a deposit payment for the VAT to CTI (Europe) based on the 2005 assessment, including 50% of the assessed VAT, interest and collection fees for an amount of 1.5 million, or approximately \$2.2 million converted using the currency exchange rate as of March 31, 2011. We successfully filed a petition with the Tax Court for suspension of the 2005 notice of deposit payment. On September 28, 2010, the merits of the case for the year 2005 were discussed in a public hearing before the Tax Court. On January 13, 2011, the Tax Court issued decision no. 4/2010 in which the Tax Court (i) partially accepted our appeal and declared that no penalties can be imposed against us, (ii) confirmed the right of the Italian Tax Authorities to reassess the VAT (plus interest) in relation to the transactions identified in the 2005 notice of assessment and (iii) repealed the suspension of the notice of deposit payment. As a result of this decision, our exposure for 2005 VAT assessment is currently reduced by the waiver of penalties of 2.6 million, or approximately \$3.7 million converted using the currency exchange rate as of March 31, 2011. The ITA has the right to appeal the decision to request for confirmation of the penalties. On February 2, 2011, we paid the required VAT deposit of 1.5 million, or approximately \$2.1 million converted using the currency exchange rate as of February 2, 2011, prior to the due date of February 6, 2011. We do not believe that the Tax Court has carefully reviewed all of our arguments, relevant documents and other supporting evidence that our counsel filed and presented during the hearing, including an appraisal from an independent expert, and, therefore, that there are grounds of appeal in order to ask the judges of the higher court to further consider all of our arguments in support of invalidating the entire notice of assessment. Accordingly, we will appeal to the Regional Tax Court and file a complaint with the European Commission. On March 25, 2011, we paid to the Italian collection agent an additional 0.1 million, or approximately \$0.1 million converted using the currency exchange rate as of March 25, 2011. The additional payment was for interest and collection fees during the suspension period. We do not believe this additional payment was due and we intend to pursue recovery of such payment through litigation.

While we contend that services invoiced were non-VAT taxable consulting services and that the VAT returns are correct as originally filed, we have recorded a reserve for VAT assessed, interest and collection fees totalling 2.6 million, or approximately \$3.7 million as of March 31, 2011, of which \$3.2 million is included in long-term obligations, less current portion and \$0.5 million of the reserve is accounted for as an offset to VAT receivable included in other assets.

2006 VAT. On January 10, 2011, we received a notice from the ITA requiring a deposit payment for VAT to CTI (Europe) based on the 2006 assessment, including 50% of the assessed VAT, interest and collection fees for an amount of 0.4 million, or approximately \$0.6 million converted using the currency exchange rate as of March 31, 2011, payable in the first quarter 2011. We filed a request for suspension of the collection of such amount, which request was rejected. On March 4, 2011, we paid to the ITA the required deposit in respect of the 2006 VAT in the amount of 0.4 million, or approximately \$0.6 million converted using the currency exchange rate as of March 4, 2011. The first hearing for the discussion of the merits of the case was held on May 28, 2011. The Tax Court has not yet released a decision with respect to the 2006 VAT.

2007 VAT. As of the date of this prospectus supplement, we have not received a notice from the ITA requesting a deposit payment for the VAT based on the 2007 assessment. The first hearing for the discussion of the merits of the case was held on May 28, 2011. The Tax Court has not yet released a decision with respect to the 2007 VAT.

Securities Class Action and Shareholder Derivative Litigation

On March 12, 2010, a purported securities class action complaint was filed in the United States District Court for the Western District of Washington against the Company and certain of its officers and directors, styled Cyril Sabbagh, individually and on behalf of all others similarly situated v. Cell Therapeutics, Inc., Dr. James A. Bianco, M.D., and Dr. Jack W. Singer (Case No. 2:10-sv-00414), or the Sabbagh action. On March 19, 2010, a substantially similar class action complaint was filed in the same court, styled Michael Laquidari, individually and on behalf of all others similarly situated v. Cell Therapeutics, Inc., Dr. James A. Bianco, M.D., and Dr. Jack W. Singer (Case No. 2:10-cv-00480), or the Laquidari action. On March 31, 2010, a third substantially similar class action complaint was filed in the same court, styled William Snyder, individually and on behalf of all others similarly situated v. Cell Therapeutics, Inc., James A. Bianco, Phillip M. Nudelman, Louis A. Bianco, John H. Bauer, Richard L. Love, Mary O. Munding, Jack W. Singer, Frederick W. Telling and Rodman & Renshaw, LLC (Case No. 2:10-cv-00559), or the Snyder action. The securities actions are pending before Judge Marsha Pechman in the Western District of Washington. The securities complaints allege that the

Table of Contents

defendants violated the federal securities laws by making certain alleged false and misleading statements. The plaintiffs in the Sabbagh and Laquidari actions seek unspecified damages on behalf of a putative class of purchasers of the Company's securities from May 5, 2009 through February 8, 2010. The plaintiffs in the Snyder action seek unspecified damages on behalf of a putative class of purchasers of the Company's securities from May 5, 2009 through March 19, 2010, including purchasers of securities issued pursuant to or traceable to the Company's July 22, 2009 public offering. On August 2, 2010, the court consolidated the securities actions, appointed lead plaintiffs, and approved lead plaintiffs counsel. On September 27, 2010, lead plaintiff filed an amended consolidated complaint with a purported class period of March 25, 2008 through March 22, 2010. On October 27, 2010, the defendants filed a motion to dismiss the amended consolidated complaint. Plaintiffs filed an opposition on December 3, 2010, and defendants filed their reply on December 22, 2010. The hearing on the motion to dismiss was held on January 28, 2011. On February 4, 2011, the court issued an order denying in large part the defendants' motion. The court has set a trial date of June 25, 2012 for the securities class action.

On April 1, 2010, a shareholder derivative complaint was filed in the United States District Court for the Western District of Washington, derivatively on behalf of the Company against the members of its Board of Directors, styled *Shackleton v. John A. Bauer, James A. Bianco, Vartan Gregorian, Richard L. Love, Mary O'Neil Munding, Phillip M. Nudelman, Jack W. Singer, and Frederick W. Telling* (Case No. 2:10-cv-564). On April 5, 2010, and April 13, 2010, substantially similar derivative actions were filed in the same court, styled, respectively, *Marbury v. James A. Bianco, et al.* (Case No. 2:10-cv-00578) and *Cyrek v. John H. Bauer, et al.* (Case No. 2:10-cv-00625). The derivative actions are also pending before Judge Marsha Pechman. The derivative complaints allege that the defendants breached their fiduciary duties to the Company under Washington law by making or failing to prevent the disclosure of certain alleged false and misleading statements. The allegations in the derivative actions are substantially similar to those in the securities actions. On May 10, 2010, pursuant to the parties' stipulation, the Court consolidated these three shareholder derivative actions and appointed the law firms Robbins Umeda LLP and Federman & Sherwood as co-lead counsel for derivative plaintiffs.

On June 1, 2010, a fourth related shareholder derivative action was filed in the Western District of Washington, *Souda v. John H. Bauer et al.* (Case No. 2:10-cv-00905). It was subsequently transferred to Judge Pechman and consolidated with the consolidated derivative actions. Plaintiff Souda filed a motion to reconsider the portion of the Court's Order dated May 10, 2010, appointing Robbins Umeda and Federman & Sherwood as co-lead derivative counsel. Souda's motion for reconsideration was denied on November 16, 2010.

On July 27, 2010, a fifth related shareholder derivative action, *Bohland v. John H. Bauer et al.* (Case No. 2:10-cv-1213), was filed in the Western District of Washington and assigned to Judge John C. Coughenour. It was subsequently transferred to Judge Pechman. Plaintiff Bohland filed a motion to consolidate the Bohland action with the consolidated derivative actions and to reconsider the portion of the Court's Order dated May 10, 2010, appointing Robbins Umeda and Federman & Sherwood as co-lead derivative counsel. Bohland's motion for reconsideration was denied on November 16, 2010, and Bohland was ordered consolidated with the other derivative actions.

On October 4, 2010, a sixth related derivative complaint was filed in the Superior Court of Washington, County of King, *Alexander v. James A. Bianco, et al.* (Case No. 10-2-34849-2-SEA). On October 5, 2010, the complaint was removed to the Western District of Washington and assigned to Judge Pechman. On October 29, 2010, nominal defendant Cell Therapeutics, Inc. filed a Notice of Related Case in the lead derivative case, *Shackleton v. John H. Bauer, et al.*, Case No. 2:10-cv-00564 (Doc. No. 42). The Company notified the Court of this action and requested that it be consolidated with the Derivative Actions per the Court's May 10, 2010 Consolidation Order. On November 18, 2010, the Court issued an Order to Show Cause re Consolidation in Alexander. On November 26, 2010, the parties agreed and the court granted consolidation of Alexander and ordered that all proceedings be deferred 60 days pending the outcome of the Defendant's motion to dismiss the Securities Class Action suits. On February 4, 2011, following denial of the motion to dismiss in the securities class action, the Court lifted the stay in the derivative actions. Pursuant to the parties' previous stipulation, the parties have agreed to facilitate and coordinate discovery in the derivative and securities actions. Plaintiffs in the derivative action have 45 days following the close of discovery in the securities class action to file an amended complaint. The Court has set a trial date of December 3, 2012 for the shareholder derivative action. The lawsuits are at a preliminary stage in the proceedings. Discovery has commenced in the securities class action. We believe that the securities class action is without merit and intend to defend it vigorously. For the shareholder derivative action, no estimate of a loss, if any, can be made at this time in the event that we do not prevail.

Table of Contents

New Product Acquisition Strategy

On May 26, 2011, we announced that, consistent with our previously announced pipeline strategy, we have identified a potential acquisition opportunity that is a phase II drug candidate being investigated in the field of cancer immunotherapy. As of the date of this prospectus supplement, our discussions are on-going. We are unable to predict the timing or likelihood of reaching a deal with respect to this acquisition.

S-6

Table of Contents

THE OFFERING

The following is a brief summary of some of the terms of this offering and is qualified in its entirety by reference to the more detailed information appearing elsewhere in this prospectus supplement and the accompanying prospectus.

| | |
|--|--|
| Securities we are offering | 30,000 shares of Series 13 Preferred Stock and warrants to purchase up to 8,820,000 shares of common stock (and the approximately 26,467,059 shares of common stock issuable from time to time upon conversion of the Series 13 Preferred Stock and exercise of the warrants). The purchase price for each share of Series 13 Preferred Stock and a warrant to purchase 294 shares of common stock is \$1,000. Each warrant will have an exercise price of \$2.15 per share. The shares of Series 13 Preferred Stock and warrants will be issued separately, but can only be purchased together in this offering. |
| Description of the Series 13 Preferred Stock Dividends | Holders of the Series 13 Preferred Stock are entitled to receive dividends equal (on an as if converted to common stock basis) to and in the same form as dividends actually paid on shares of common stock or other junior securities, as and if such dividends are paid. We have never declared or paid any cash dividends on our common stock and do not currently anticipate declaring or paying cash dividends on our common stock in the foreseeable future. See Dividend Policy. |
| Optional conversion | The Series 13 Preferred Stock can be converted at the holder's option at any time after issuance into the number of shares of common stock determined by dividing the stated value of the Series 13 Preferred Stock of \$1,000 per share to be converted by the conversion price, which is initially \$1.70. The initial conversion price is subject to adjustment in certain events (including certain fundamental changes), which are explained in more detail under the section entitled Description of Series 13 Preferred Stock. |
| Automatic conversion | On the first to occur of (i) the one month anniversary of the original issuance date of the Series 13 Preferred Stock, (ii) the date on which 1,000 or less shares of Series 13 Preferred Stock remain outstanding or (iii) the adoption by our board of directors of a resolution that it intends to adopt an amendment to the articles of incorporation without shareholder approval to effect a reverse stock split with respect to our common stock in order to achieve compliance with the listing rules of The NASDAQ Capital Market or for other good faith business reasons, all outstanding shares of Series 13 Preferred Stock shall automatically convert into the number of shares of common stock determined by dividing the aggregate stated value of the Series 13 Preferred Stock being converted by the conversion price then in effect, subject only to the limitations on conversion described below. |
| Limitations on conversion | We cannot effect a conversion of the Series 13 Preferred Stock, and no holder may request a conversion of its Series 13 Preferred Stock, to the extent such conversion would result in the holder and its affiliates beneficially owning more than 4.99% of our common stock, provided that a holder may elect to increase the conversion threshold to 9.99% of our common stock by providing us with 61 days' prior notice. In addition, in the event of an automatic conversion, the conversion threshold will increase to 19.99% without any further action on the part of a holder. |
| Liquidation preference | In the event of our voluntary or involuntary dissolution, liquidation or winding up, each holder of Series 13 Preferred Stock will be entitled to be paid a liquidation preference equal to the initial stated value of such holder's Series 13 Preferred Stock of \$1,000 per share, plus accrued and unpaid dividends and any other payments that may be due on such shares, before any distribution of assets may be made to holders of capital stock ranking junior to the Series 13 Preferred Stock. |

Table of Contents

| | |
|---|--|
| Voting rights | The Series 13 Preferred Stock will have no voting rights, except as otherwise expressly provided in our articles of incorporation or as otherwise required by law. However, so long as at least 20% of the aggregate originally issued shares of the Series 13 Preferred Stock are outstanding, we cannot amend our articles of incorporation, our second amended and restated bylaws, or our bylaws, or other charter documents in each case so as to materially, specifically and adversely affect the rights of the Series 13 Preferred Stock, to repay, repurchase or offer to repay or repurchase or otherwise acquire any of our common stock or other securities junior to the Series 13 Preferred Stock, except in certain limited circumstances, to authorize or create any class of senior preferred stock or to enter into any agreement or understanding with respect to any of the foregoing, in each case without the affirmative written consent of holders of a majority of the outstanding shares of Series 13 Preferred Stock. |
| Description of the warrants | The Initial Purchasers will receive warrants to purchase 294 shares of common stock for each share of Series 13 Preferred Stock purchased in this offering. The warrants are exercisable at an exercise price of \$2.15 per share of common stock. The warrants are exercisable beginning six months and one day after the date of issuance and expire five years and one day after the date of issuance. See Description of Warrants. |
| Limitations on exercise | No holder may exercise its warrants to the extent that the exercise would result in the holder and its affiliates beneficially owning 4.99% or more of our common stock, provided that a holder may elect to increase the exercise threshold to 9.99% of our common stock by providing us with 61 days prior notice. |
| Use of proceeds after expenses | We may use a portion of the net proceeds from this offering to fund possible investments in, or acquisitions of, complementary businesses, technologies or products. We have recently engaged in limited discussions with third parties regarding such investments or acquisitions, but we have no current agreements or commitments with respect to any investment or acquisition. We can provide no assurance that we will enter into any such agreements or commitments or consummate any such investments or acquisitions. We may also use a portion of the net proceeds from this offering for general corporate purposes, which may include, among other things, paying interest on and/or retiring portions of our outstanding debt, funding research and development, preclinical and clinical trials, the preparation and filing of new drug applications and general working capital. See Use of Proceeds. |
| Market for the Series 13 Preferred Stock and warrants | There is no established public trading market for the Series 13 Preferred Stock or warrants and we do not expect a market to develop. In addition, we do not intend to apply for listing the Series 13 Preferred Stock or warrants on any securities exchange. |
| Market for our common stock | Our common stock is quoted on The NASDAQ Capital Market and on the MTA stock market in Italy under the symbol CTIC. On June 29, 2011, the last reported sale price of our common stock on The NASDAQ Capital Market was \$1.96. |
| Risk factors | See the Risk Factors section contained in this prospectus supplement and in the documents we incorporate by reference in this prospectus supplement and the accompanying prospectus to read about factors you should consider before investing in our securities. |

Table of Contents

RISK FACTORS

*You should carefully consider the risks under the heading **Risk Factors** beginning on page 17 of our Annual Report on Form 10-K for the fiscal year ended December 31, 2010, filed with the SEC on February 16, 2011, and our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2011, filed with the SEC on April 26, 2011, which information is incorporated by reference in this prospectus supplement, and the additional risks described below and other information in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference before deciding to invest in our securities. If any of the identified risks actually occur, they could materially adversely affect our business, financial condition, operating results or prospects and the trading price of our securities. Additional risks and uncertainties that we do not presently know or that we currently deem immaterial may also impair our business, financial condition, operating results and prospects and the trading price of our securities.*

Risks Related to Our Company

We need to raise additional funds and expect that we will need to continue to raise funds in the future, and additional funds may not be available on acceptable terms, or at all; failure to raise significant additional funds may cause us to cease development of our products and operations.

We have substantial operating expenses associated with the development of our product candidates and as of March 31, 2011, we had cash and cash equivalents of \$43.8 million, which amount does not take into account the approximately \$16.0 million in gross proceeds that we subsequently received in May 2011 in connection with the issuance of our Series 12 preferred stock and warrants, and which has not been reduced by the approximately \$10.6 million that we subsequently deposited in repayment for our outstanding 7.5% Notes.

As of March 31, 2011, our total current liabilities were \$39.1 million, including \$10.3 million and \$10.9 million outstanding principal balance related to our 7.5% Notes and 5.75% convertible senior notes, or the 5.75% Notes, respectively. On May 2, 2011, we announced that we had deposited \$10.6 million in cash as trust funds with U.S. Bank National Association as the trustee of our outstanding 7.5% Notes in repayment for the 7.5% Notes, including accrued and unpaid interest. Our 5.75% Notes mature in December 2011. We do not expect that our existing cash and cash equivalents, as well as proceeds received from our offerings to date, but without giving effect to this offering, will provide sufficient working capital to fund our presently anticipated operations through the fourth quarter of 2011.

Even if we are able to raise additional capital through this offering, we will need to find other ways of raising additional capital, which will likely require that we issue additional shares of our common stock. In light of this offering, and because of the number of shares reserved for issuance under various convertible securities, derivative securities and otherwise, we have very few authorized shares of common stock available for issuance and it is difficult for us to obtain an increase in our authorized shares. If we do not have enough shares authorized to effect a future equity financing, our ability to raise capital through equity financings may be adversely affected.

To the extent that we raise additional capital through this offering or the sale of equity securities or securities convertible into our equity securities, our shareholders will experience dilution of their proportionate ownership of us. In addition to the transactions reflected in this offering, we have held preliminary discussions with several investment funds regarding a potential investment in our company, but we have no current agreements or commitments with respect to any investment by these investment funds or any other investors. There can be no assurance that this offering will be consummated, that our discussions with these investment funds or any other investors will result in an investment in our company or that we will have sufficient earnings, access to liquidity or cash flow in the future to meet our operating expenses and other obligations, including our debt service obligations.

We may not be able to raise such capital or, if we can, it may not be on favorable terms. We may seek to raise additional capital through public or private equity financings, partnerships, joint ventures, dispositions of assets, debt financings or restructurings, bank borrowings or other sources. To obtain additional funding, we may need to enter into arrangements that require us to relinquish rights to certain technologies, drug candidates, products and/or potential markets. In addition, some financing alternatives may require us to meet additional regulatory requirements in Italy and the United States and we may be subject to certain contractual limitations, which may increase our costs and adversely affect our ability to obtain additional funding. If adequate funds are not otherwise available, we will further curtail operations significantly, including the delay, modification or cancellation of operations and

Table of Contents

plans related to Pixuvri, OPAXIO, tosedostat, brostallicin and bisplatinates and may be forced to cease operations, liquidate our assets and possibly seek bankruptcy protection. Bankruptcy may result in the termination of agreements pursuant to which we license certain intellectual property rights, including the rights to Pixuvri, OPAXIO, tosedostat, brostallicin and bisplatinates.

We need to implement a reduction in expenses across our operations.

Even if we complete this offering, we need substantial additional capital to fund our current operations. If we are unable to secure additional financing on acceptable terms in the near future, we will need to implement additional cost reduction initiatives, such as further reductions in the cost of our workforce and the discontinuation of a number of business initiatives to further reduce our rate of cash utilization and extend our existing cash balances. We believe that these additional cost reduction initiatives, if undertaken, could provide us with additional time to continue our pursuit of additional funding sources and also strategic alternatives. In the event that we are unable to obtain financing on acceptable terms and reduce our expenses, we may be required to limit or cease our operations, pursue a plan to sell our operating assets, seek bankruptcy protection, or otherwise modify our business strategy, which could materially harm our future business prospects.

Our common stock is listed on The NASDAQ Capital Market and the MTA in Italy and we may not be able to maintain those listings or trading on these exchanges may be halted or suspended, which may make it more difficult for investors to sell shares of our common stock.

Effective with the opening of trading on January 8, 2009, the U.S. listing of our common stock was transferred to The NASDAQ Capital Market, subject to meeting a minimum market value of listed securities of \$35.0 million. NASDAQ's Listing Qualifications Panel, or the Panel, approved this transfer after our market capitalization did not comply with the minimum market capitalization required for companies listed on The NASDAQ Global Market, and we presented a plan to the Panel for regaining compliance with the NASDAQ Marketplace Rules. On January 23, 2009, we received an Additional Staff Determination Letter from NASDAQ that stated that the NASDAQ staff had concluded that we had violated NASDAQ Marketplace Rule 4350(i)(1)(C) (now NASDAQ Marketplace Rule 5635), which requires shareholder approval in connection with an acquisition if the issuance or potential issuance is greater than 20% of the pre-acquisition shares outstanding, and that we had at times not complied with Marketplace Rule 4310(c)(17) regarding submission of a Listing of Additional Shares form. On February 18, 2009, we updated the Panel on our plan for regaining compliance and requested an extension of the deadline to regain compliance with the minimum market capitalization requirement for The NASDAQ Capital Market. On March 6, 2009, we were notified by NASDAQ that the Panel determined to continue the listing of our common stock on The NASDAQ Capital Market, subject to the condition that, on or before April 6, 2009, we demonstrated compliance with all applicable standards for continued listing on The NASDAQ Capital Market, including the \$35.0 million minimum market capitalization requirement. In addition, the Panel issued a public reprimand for our prior failures to comply with the shareholder approval requirements and late filing of Listing of Additional Shares forms. On April 2, 2009, we were notified by NASDAQ that we had complied with the Panel's decision dated March 6, 2009, and, accordingly, the Panel determined to continue the listing of our common stock on The NASDAQ Capital Market.

NASDAQ reinstated the \$1.00 minimum bid price requirement on August 3, 2009. On May 3, 2010, we received notice from NASDAQ indicating that for the last 30 consecutive business days the closing bid price of our common stock was below the minimum \$1.00 per share requirement for continued listing of our common stock on The NASDAQ Capital Market under Rule 5550(a)(2). This notification had no immediate effect on the listing of or the ability to trade our common stock on The NASDAQ Capital Market. In accordance with NASDAQ Marketplace Rule 5810(c)(3)(A), we were provided a grace period of 180 calendar days, or until November 1, 2010, to regain compliance. We would have achieved compliance if the bid price of our common stock closed at \$1.00 per share or more for a minimum of ten consecutive trading days before November 1, 2010. In addition, we were eligible for an additional 180-day grace period if we met all of the initial listing standards of NASDAQ, with the exception of the closing bid price. On November 2, 2010, we received notice from NASDAQ that it granted us an additional 180 days, or until May 2, 2011, to regain compliance with the minimum \$1.00 per share requirement for continued listing of our common stock on The NASDAQ Capital Market under Rule 5550(a)(2).

On May 3, 2011, we received a notice from NASDAQ stating that we had not regained compliance with NASDAQ's \$1.00 minimum bid price rule under Rule 5550(a)(2). On May 5, 2011, in an effort to regain compliance with the NASDAQ listing requirements and increase the per-share trading price of our common stock, our board of directors approved a one-for-six reverse stock split. The reverse stock split became effective on May 15, 2011. On June 1, 2011, we announced that we received a letter from NASDAQ indicating that we had regained compliance with Rule 5550(a)(2) and that we were in compliance with all applicable listing standards. As a result, our common stock will continue to be listed and traded on The NASDAQ Capital Market. However, notwithstanding our current compliance with NASDAQ listing standards, there can be no assurance that we will be able to maintain our continued listing on The NASDAQ Capital Market in the future.

Table of Contents

The level of trading activity of our common stock may decline if it is no longer listed on The NASDAQ Capital Market. Furthermore, our failure to maintain a listing on The NASDAQ Capital Market may constitute an event of default under certain of our indebtedness which would accelerate the maturity date of such debt. As such, if our common stock ceases to be listed for trading on The NASDAQ Capital Market for any reason, it may harm our stock price, increase the volatility of our stock price and make it more difficult for investors to sell shares of our common stock. In the event our common stock is delisted from The NASDAQ Capital Market, we currently expect that our common stock would be eligible to be listed on the OTC Bulletin Board or Pink Sheets. We do not know what impact delisting from The NASDAQ Capital Market may have on our listing with the Borsa Italiana. Although we continue to be listed on The NASDAQ Capital Market, trading in our common stock may be halted or suspended due to market conditions or if NASDAQ, CONSOB or the Borsa Italiana determine that trading in our common stock is inadvisable. Trading in our common stock was halted by the Borsa Italiana on February 10, 2009, and, as a consequence, trading in our common stock was also halted by NASDAQ. After we provided CONSOB with additional information and clarification on our business operations and financial condition, as requested, and published a press release containing such information in Italy, the Borsa Italiana, and NASDAQ lifted the trading halts on our common stock. In addition, on March 23, 2009, the Borsa Italiana halted trading of our common stock on the MTA and resumed trading prior to the opening of the MTA the next day after we filed a press release regarding the explanatory paragraph in our auditor's reports on our December 31, 2008 and 2007 consolidated financial statements regarding their substantial doubt as to our ability to continue as a going concern. As a consequence, NASDAQ also halted trading in our common stock on March 23, 2009, but re-initiated trading later that day. Although we file press releases with CONSOB at the end of each month regarding our business and financial condition, CONSOB may make additional inquiries about our business and financial condition at any time, and there can be no guarantee that the Borsa Italiana, CONSOB or NASDAQ will not halt trading in our shares again in the future.

If our common stock ceases to be listed for trading on The NASDAQ Capital Market or the MTA, or both, for any reason, or if trading in our stock is halted or suspended on The NASDAQ Capital Market or the MTA, or both, such events may harm the trading price of our securities, increase the volatility of the trading price of our securities and make it more difficult for investors to buy or sell shares of our common stock. Moreover, if our common stock ceases to be listed for trading on The NASDAQ Capital Market or if trading in our stock is halted or suspended on The NASDAQ Capital Market, we may become subject to certain obligations. In addition, if we are not listed on The NASDAQ Capital Market and/or if our public float falls below \$75 million, we will be limited in our ability to file new shelf registration statements on SEC Form S-3 and/or to fully use one or more registration statements on SEC Form S-3. We have relied significantly on shelf registration statements on SEC Form S-3 for most of our financings in recent years, so any such limitations may harm our ability to raise the capital we need.

We may be unable to obtain a quorum for meetings of our shareholders or obtain necessary shareholder approvals and therefore be unable to take certain corporate actions.

If we are unable to obtain a quorum at our shareholder meetings and/or fail to get shareholder approval of corporate actions, such failure could harm us. Our articles of incorporation require that a quorum, generally consisting of one-third of the outstanding shares of voting stock, be represented in person or by proxy in order to transact business at a meeting of our shareholders. In addition, amendments to our articles of incorporation, such as an amendment to increase our authorized capital stock, generally require the approval of a majority of our outstanding shares. As a result, there is a risk that we may not get shareholder approval for these amendments, including amendments to increase the number of authorized shares of common stock at a time when we need those shares to effect a future equity financing. If we do not receive shareholder approval for such increase in authorized shares, our ability to raise capital through equity financings will be significantly harmed.

A substantial majority of our common shares are held by Italian institutions and, under Italian laws and regulations, it is difficult to communicate with the beneficial holders of those shares to obtain votes. In 2006, when a quorum required a majority of the outstanding shares of our voting stock be represented in person or by proxy, we scheduled two annual meetings of shareholders, but were unable to obtain a quorum at either meeting. Following that failure to obtain a quorum, we contacted certain depository banks in Italy where significant numbers of shares of our common stock were held and asked them to cooperate by making a book-entry transfer of their share positions at Monte Titoli to their U.S. correspondent bank, who would then transfer the shares to an account of the Italian bank at a U.S. broker-dealer that is an affiliate of that bank. Certain of the banks agreed to make the share transfer pursuant to these arrangements as of the record date of the meeting, subject to the relevant beneficial owner being given notice before such record date and taking no action to direct the voting of such shares. We were able to obtain a quorum to hold special meetings of the shareholders in April 2007, January 2008, March 2009 and June 2011 and annual meetings of the shareholders in September 2007, June 2008, October 2009 and September 2010. Nevertheless, obtaining a quorum at future meetings even at the lower threshold and obtaining necessary shareholder approvals will depend in part upon the willingness of the Italian depository banks to continue participating in the custody transfer arrangements, and we cannot be assured that those banks that have participated in the past will continue to participate in custody transfer arrangements in the future. We are continuing to explore other alternatives to achieve a

Table of Contents

quorum for and shareholder representation at our meetings; however, we cannot be certain that we will find an alternate method if we are unable to continue to use the custody transfer arrangements. As a result, we may be unable to obtain a quorum at future annual or special meetings of shareholders or obtain shareholder approval of proposals when needed.

Even if we obtain a quorum at our shareholder meetings, we may not obtain enough votes to approve matters to be resolved upon at those meetings. Under Rule 452 of the New York Stock Exchange, or Rule 452, the U.S. broker-dealer may only vote shares absent direction from the beneficial owner on certain specified routine matters, such as an amendment to our articles of incorporation to increase authorized shares that are to be used for general corporate purposes and the ratification of our auditors. If our shareholders do not instruct their brokers on how to vote their shares on non-routine matters, then we may not obtain the necessary number of votes for approval. Non-routine matters include, for example, proposals that relate to the authorization or creation of indebtedness or preferred stock, and revisions to Rule 452 that further limit matters for which broker discretionary voting is allowed, such as the recent revisions imposed by the Dodd-Frank Act to prohibit broker discretionary voting on matters related to executive compensation and in the election of directors, may further harm our ability to obtain a quorum and shareholder approval of certain matters. Therefore it is possible that even if we are able to obtain a quorum for our meetings of the shareholders, we still may not receive enough votes to approve proxy proposals presented at such meeting and, depending on the proposal in question, including if a proposal is submitted to our shareholders to increase the number of authorized shares of common stock, such failure could harm us. For example, a proposal to approve a reverse stock split failed to receive sufficient votes to pass at the March 2009 shareholders meeting.

We may continue to incur net losses, and we may never achieve profitability.

We were incorporated in 1991 and have incurred a net operating loss every year since our formation. As of March 31, 2011, we had an accumulated deficit of \$1.6 billion. We are pursuing regulatory approval for Pixuvri, OPAXIO, tosedostat and brostallicin. We will need to conduct research, development, testing and regulatory compliance activities and undertake manufacturing and drug supply activities the costs of which, together with projected general and administrative expenses, may result in operating losses for the foreseeable future. We may never become profitable even if we are able to commercialize products currently in development or otherwise.

Our debt and operating expenses exceed our net revenues.

We have a substantial amount of debt outstanding, and our annual interest expense with respect to our debt is significant. Unless we raise substantial additional capital and reduce our operating expenses, we may not be able to pay all of our operating expenses or repay our debt or the interest on our debt, liquidated damages or other payments that may become due with respect to our debt. In the event we are unable to reduce our expenses and/or repay our debt or the interest on our debt, we may be required to limit or cease our operations, pursue a plan to sell our operating assets, seek bankruptcy protection, or otherwise modify our business strategy, which could materially harm our future business prospects. Bankruptcy may result in the termination of agreements pursuant to which we license certain intellectual property rights, including the rights to Pixuvri, OPAXIO, tosedostat, brostallicin and bisplatinates.

We may be unable to use our net operating losses.

We have substantial tax loss carryforwards for U.S. federal income tax purposes. As a result of prior changes in the stock ownership of the Company, our ability to use such carryforwards to offset future income or tax liability is limited under section 382 of the Internal Revenue Code of 1986, as amended. Moreover, future changes in the ownership of our stock, including those resulting from the issuance of shares of our common stock upon exercise of outstanding warrants, may further limit our ability to use our net operating losses.

We have received audit reports with a going concern disclosure on our consolidated financial statements.

As we may need to raise additional financing to fund our operations and satisfy obligations as they become due, our independent registered public accounting firm has included an explanatory paragraph in their reports on our December 31, 2010, 2009 and 2008 consolidated financial statements regarding their substantial doubt as to our ability to continue as a going concern. This may have a negative impact on the trading price of our common stock and we may have a more difficult time obtaining necessary financing.

Table of Contents

If we make any acquisitions, we will incur a variety of costs and may never realize the anticipated benefits.

If appropriate opportunities become available, we may attempt to acquire businesses and assets that we believe are a strategic fit with our business. We currently have no agreements to consummate any pending material acquisitions. If we pursue any such transaction, the process of negotiating the acquisition and integrating an acquired business and assets may result in operating difficulties and expenditures and may require significant management attention that would otherwise be available for ongoing development of our business, whether or not any such transaction is ever consummated. Moreover, we may never realize the anticipated benefits of any acquisition. Future acquisitions could result in potentially dilutive issuances of equity securities, the incurrence of debt, contingent liabilities and/or amortization expenses related to goodwill and other intangible assets, which could harm our business, financial condition, operating results and prospects and the trading price of our securities.

The global financial crisis may have an impact on our business and financial condition in ways that we currently cannot predict, and may further limit our ability to raise additional funds.

The ongoing credit crisis and related turmoil in the global financial system has had and may continue to have an impact on our business and our financial condition. We may face significant challenges if conditions in the financial markets do not improve or continue to worsen. In particular, our ability to access the capital markets and raise funds required for our operations may be severely restricted at a time when we would like, or need, to do so, which could have an adverse effect on our ability to meet our current and future funding requirements and on our flexibility to react to changing economic and business conditions.

We are required to comply with the regulatory structure of Italy because our stock is traded on the MTA which could result in administrative and other challenges and additional expenses.

Our common stock is traded on the MTA and we are required to also comply with the rules and regulations of CONSOB and the Borsa Italiana, which ensures the development of the managed market in Italy. Collectively, these entities regulate companies listed on Italy's public markets. Conducting our operations in a manner that complies with all of the applicable laws and rules requires us to devote additional time and resources to regulatory compliance matters. For example, the process of seeking to understand and comply with the laws of each country, including tax, labor and regulatory laws, might require us to incur the expense of engaging additional outside counsel, accountants and other professional advisors and might result in delayed business initiatives as we seek to ensure that each new initiative will comply with all of the applicable regulatory regimes. In addition, the Borsa Italiana and CONSOB have made several requests for information asking us to provide additional clarifications about our business operations and financial condition, and we have complied with such requests and have met with CONSOB on several occasions to answer questions. Compliance with Italian regulatory requirements may delay additional issuances of our common stock; we are currently taking steps to attempt to conform to the requirements of the Italian stock exchange and CONSOB to allow such additional issuances.

In addition, under Italian law, we must publish a listing prospectus that has been approved by CONSOB prior to issuing common stock that exceeds, in any twelve-month period, 10% of the number of shares of our common stock outstanding at the beginning of that period (except for certain applicable exceptions).

If we are unable to maintain a listing prospectus to cover general financing efforts under Italian law, we may be required to raise money using alternative forms of securities. For example, we may need to use convertible preferred stock and convertible debt since the common stock resulting from the conversion of such securities, subject to the provisions of European Directive No. 71/2003 and according to the interpretations of the Committee of European Securities Regulators, is not subject to the 10% limitation imposed by EU and Italian law.

Moreover, on December 10, 2009, CONSOB sent us a notice claiming two violations of the provisions of Section 114, paragraph 1 of the Italian Legislative Decree no. 58/98 due to the asserted late disclosure of certain information then reported, at CONSOB's request, in press releases disseminated on December 19, 2008 and March 23, 2009. Such information concerned, respectively: (i) the conversion by BAM Opportunity Fund LP of 9.66% notes into shares of common stock that occurred between October 24, 2008 and November 19, 2008; and (ii) the contents of the opinion expressed by Stonefield Josephson, Inc., an independent registered public accounting firm, with respect to our 2008 financial statements. The sanctions established by Section 193, paragraph 1 of the Italian Legislative Decree no. 58/98 for such violations are pecuniary administrative sanctions amounting to between 5,000 and 500,000, or approximately \$7,000 to \$709,000 converted using the currency exchange rate as of March 31, 2011, applicable to each of the two asserted violations. According to the applicable Italian legal provisions, CONSOB may impose such administrative sanctions by means of a decree stating the grounds of its decision only after evaluating our possible defenses that were submitted to CONSOB on January 8, 2010 (within 30 days of December 10, 2009, the notification date of the relevant charges,

Table of Contents

according to the applicable Italian rules). On July 12, 2010, CONSOB (a) notified us that it had begun the preliminary investigation for its decision on these administrative proceedings and (b) provided us with a preliminary investigation report in response to our defenses submitted on January 8, 2010. On August 12, 2010 (within 30 days of July 12, 2010, the notification date of the beginning of the aforesaid preliminary investigation, according to the applicable Italian rules), we submitted further defenses that CONSOB would have to evaluate before imposing any possible administrative sanctions. In a letter dated March 10, 2011, CONSOB notified us of a resolution confirming the occurrence of the violation asserted in clause (i) above and applied a fine in the amount of 40,000, or approximately \$55,000 converted using the foreign currency exchange rate as of March 10, 2011, which we paid on April 5, 2011. CONSOB has not yet notified us of a resolution with respect to the violation asserted in clause (ii) above, but based on our assessment, we believe the likelihood that a pecuniary administrative sanction will be imposed on the Company for such asserted violation (ii) is probable.

Our assets and liabilities that remain in our Italian branches make us subject to increased risk regarding currency exchange rate fluctuations.

We are exposed to risks associated with the translation of euro-denominated financial results and accounts into U.S. dollars. As long as we continue to have assets and liabilities held in our Italian branches the carrying value of these assets and liabilities will be affected by fluctuations in the value of the U.S. dollar as compared to the euro. Changes in the value of the U.S. dollar as compared to the euro might have an adverse effect on our reported results of operations and financial condition.

We may owe additional amounts for value added taxes related to our operations in Europe.

Our European operations are subject to value added tax, or VAT, which is usually applied to all goods and services purchased and sold throughout Europe. The VAT receivable is \$5.6 million and 5.3 million as of March 31, 2011 and December 31, 2010, respectively. On April 14, 2009 and December 21, 2009, the ITA issued notices of assessment to CTI (Europe) based on the ITA's audit of CTI (Europe)'s VAT returns for the years 2003 and 2005, respectively. On June 25, 2010, the ITA issued notices of assessment to CTI (Europe) for the years 2006 and 2007 based on similar findings for the 2003 and 2005 assessments. The ITA audits concluded that CTI (Europe) did not collect and remit VAT on certain invoices issued to non-Italian clients for services performed by CTI (Europe). The assessments, including interest and penalties, for the years 2003, 2005, 2006 and 2007 are 0.5 million, 5.5 million, 2.5 million and 0.8 million, or approximately \$0.8 million, \$7.8 million, \$3.6 million and \$1.2 million converted using the currency exchange rate as of March 31, 2011, respectively. We believe that the services invoiced were non-VAT taxable consultancy services and that the VAT returns are correct as originally filed. We are vigorously defending ourselves against the assessments both on procedural grounds and on the merits of the case. If the decision of the Tax Court is unfavorable, then we expect to appeal to the higher courts in order to further defend our interests. However, if we are unable to successfully defend ourselves against the assessments issued by the ITA, we may be requested to pay to the ITA an amount ranging from 4.9 million to 9.4 million, or approximately \$7.0 million to \$13.3 million converted using the currency exchange rate as of March 31, 2011, plus collection fees, notification expenses and additional interest for the period lapsed between the date in which the assessments were issued and the date of effective payment. On February 2, 2011, we paid to the ITA the required deposit in respect of the 2005 VAT in the amount of 1.5 million, or approximately \$2.1 million converted using the currency exchange rate as of February 2, 2011. On March 4, 2011, we paid to the ITA the required deposit in respect of the 2006 VAT in the amount of 0.4 million, or approximately \$0.6 million converted using the currency exchange rate as of March 4, 2011. Further information pertaining to these cases can be found in this prospectus supplement under Summary Recent Developments and is incorporated by reference herein.

Our financial condition may be adversely affected if third parties default in the performance of contractual obligations.

Our business is dependent on the performance by third parties of their responsibilities under contractual relationships and if third parties default on their performance of their contractual obligations, we could suffer significant financial losses and operational problems, which could in turn adversely affect our financial performance, cash flows or results of operations and may jeopardize our ability to maintain our operations.

We may not realize any royalties, milestone payments or other benefits under the License and Co-Development Agreement entered into with Novartis.

We have entered into a License and Co-Development agreement related to OPAXIO and Pixuvri with Novartis pursuant to which Novartis received an exclusive worldwide license for the development and commercialization of OPAXIO and an option to enter into an exclusive worldwide license to develop and commercialize Pixuvri. We will not receive any royalty or milestone payments under this agreement unless Novartis exercises its option related to Pixuvri and we are able to reach a definitive agreement or Novartis elects to participate in the development and commercialization of OPAXIO. Novartis is under no obligation to make such

Table of Contents

election and enter into a definitive license agreement or exercise such right and may never do so. In addition, even if Novartis exercises such rights, any royalties and milestone payments we may be eligible to receive from Novartis are subject to the receipt of the necessary regulatory approvals and the attainment of certain sales levels. We may never receive the necessary regulatory approvals and our products may not reach the necessary sales levels to generate royalty or milestone payments even if Novartis elects to exercise its option with regard to Pixuvri and enter into a definitive license agreement or to participate in the development and commercialization of OPAXIO. Novartis has the right under the agreement in its sole discretion to terminate such agreement at any time upon written notice to us.

In the event Novartis does not elect to participate in the development of OPAXIO or Pixuvri, we may not be able to find another suitable partner for the commercialization and development of those products, which may have an adverse effect on our ability to bring those drugs to market. In addition, we would need to obtain a release from Novartis prior to entering into any agreement to develop and commercialize Pixuvri or OPAXIO with a third party. Further information about the status of the regulatory approval for Pixuvri can be found in Risk Factors Risks Related to Our Company. We cannot guarantee that we will obtain regulatory approval to manufacture or market any of our drug candidates.

We cannot guarantee that we will obtain regulatory approval to manufacture or market any of our drug candidates.

Obtaining regulatory approval to market drugs to treat cancer is expensive, difficult and risky. Preclinical and clinical data can be interpreted in different ways, which could delay, limit or preclude regulatory approval. Negative or inconclusive results or adverse medical events during a clinical trial could delay, limit or prevent regulatory approval.

At the ODAC meeting on March 22, 2010, the ODAC panel did not recommend approval of our NDA for Pixuvri. Subsequently, in April 2010, we received a Complete Response Letter from the FDA regarding our NDA for Pixuvri. The FDA cited as its primary reason for the action its concerns previously raised at the ODAC meeting on March 22, 2010, and recommended that we conduct one additional clinical trial to demonstrate the safety and efficacy of Pixuvri. In December 2010, we filed an appeal with the FDA's Center for Drug Evaluation and Research regarding the FDA's April 2010 decision to not approve Pixuvri for relapsed or refractory aggressive NHL. We filed our appeal under the FDA's formal dispute resolution process asking the FDA to conclude that PIX301 demonstrated efficacy.

On May 3, 2011, we announced that the FDA responded to our December 2010 appeal of the FDA's April 2010 decision to not approve Pixuvri for relapsed or refractory aggressive NHL. In its response, the FDA indicated that after considering the data available in the appeal, it does not believe that accelerated approval of our NDA is necessarily out of reach based on a single controlled clinical trial, provided that two key matters can be resolved satisfactorily. First, the circumstances of stopping the PIX301 trial early must be resolved to assure that ongoing results assessment were not dictating the decision to stop. Second, ascertainment of the primary endpoint in the PIX301 study must be determined to have been sound and not subject to bias. The FDA also indicated that our request that the FDA find that the data in the NDA demonstrate efficacy and return the NDA to the Office of Oncology Drug Products for consideration of safety and other issues was denied because the FDA was not able to conclude that efficacy had been demonstrated. However, the FDA also did not find that it could be concluded that PIX301 was a failed study, which warranted application of interim analysis statistical thresholds. The FDA further indicated that we could re-submit the NDA for a re-review of the safety and efficacy, provided that the two key matters can be resolved satisfactorily.

On June 14, 2011, we announced that we had met with the DODP in a meeting that focused on the documents we proposed to provide regarding the circumstances of stopping the enrollment of PIX301 prior to achieving the original planned patient accrual and the make-up of the new radiology expert panel as well as our plan to address items noted in the FDA's Complete Response Letter. The DODP confirmed that the NDA would be reviewed within six months from the resubmission of the NDA. We anticipate filing the additional information later this year; accordingly, it is possible that we could obtain FDA approval as early as the first half of 2012. However, you should not infer that the aforementioned developments increase the likelihood of FDA approval of the NDA or that the FDA, FDA or DODP will not require additional actions or information.

Moreover, the FDA may request that we conduct at least one additional clinical trial to obtain FDA approval of our NDA for Pixuvri and we do not know what this trial will cost or how long it would take to execute this study. In March 2011, we initiated a randomized pivotal trial of Pixuvri for the treatment of relapsed or refractory DLBCL. This clinical trial, referred to as PIX306 or PIX-R, is now open to patient enrollment. PIX-R will compare a combination of Pixuvri plus rituximab to a combination of gemcitabine plus rituximab in patients with relapsed or refractory DLBCL who have received one to three prior lines of therapy. We cannot predict the outcome of PIX-R or whether PIX-R will serve as either a post-marketing commitment trial or as a pivotal trial. We may also need to take additional steps to obtain regulatory approval of Pixuvri. The expense to design and conduct clinical trials are substantial and any additional clinical trials or actions we may need to pursue to obtain approval of our NDA for Pixuvri may negatively affect our business, financial condition and results of operations.

Table of Contents

We may be delayed, limited or precluded from obtaining regulatory approval of OPAXIO as a maintenance therapy for advanced stage ovarian cancer.

Our future financial success depends in part on obtaining regulatory approval of OPAXIO. We are currently focusing our development of OPAXIO as a potential maintenance therapy for women with advanced stage ovarian cancer who achieve a complete remission following first-line therapy with paclitaxel and carboplatin. This study, the GOG0212 trial, is under the control of the GOG and is expected to enroll 1,100 patients with 788 patients enrolled as of March 31, 2011. The GOG Data Monitoring Committee plans to conduct an interim analysis of overall survival and, based on feedback provided by the GOG, an interim analysis is currently expected in mid-2012. If successful, we could utilize those results to form the basis of an NDA for OPAXIO. However, prior clinical trials for OPAXIO have not been successful. In March 2005, we announced the results of STELLAR 3, and in May 2005, we announced the results of STELLAR 2 and 4, our phase III clinical trials of OPAXIO in NSCLC. All three trials failed to achieve their primary endpoints of superior overall survival compared to current marketed agents for treating NSCLC. Accordingly, there can be no assurance that the GOG0212 will provide compelling evidence or any positive results, which would preclude our planned submission of an NDA to the FDA. In addition, we cannot predict the outcome of the GOG0212 study and that study may not demonstrate or be adequate to support regulatory approval of OPAXIO by the FDA.

In March 2008, we submitted an MAA to the EMA for first-line treatment of patients with advanced NSCLC who are poor performance status, or PS2, based on a non-inferior survival and improved side effect profile which we believe was demonstrated in our previous clinical trials. The application was based on a positive opinion we received from the SAWP; the EMA agreed that switching the primary endpoint from superiority to non-inferiority is feasible if the retrospective justification provided in the marketing application is adequate. In September 2009, we notified the EMA of our decision to withdraw the MAA and we refocused our resources on the approval of OPAXIO for its potential superiority indication in maintenance therapy for ovarian cancer and as a radiation sensitizer in the treatment of esophageal cancer.

We are subject to extensive government regulation.

We are subject to rigorous and extensive regulation by the FDA in the United States and by comparable agencies in other states and countries, including the EMA's review of our MAA for Pixuvri. Failure to comply with regulatory requirements could result in various adverse consequences, including possible delay in approval or refusal to approve a product, withdrawal of approved products from the market, product seizures, injunctions, regulatory restrictions on our business and sales activities, monetary penalties, or criminal prosecution.

Our products may not be marketed in the United States until they have been approved by the FDA and may not be marketed in other countries until they have received approval from the appropriate agencies. None of our current product candidates have received approval for marketing in any country. On April 13, 2009, we began submission of a rolling NDA to the FDA for Pixuvri to treat relapsed or refractory aggressive NHL. We completed the submission in June 2009 and as announced on April 9, 2010, we received a Complete Response Letter from the FDA regarding our NDA for Pixuvri. The FDA cited as its primary reason for the action its concerns previously raised at the ODAC meeting on March 22, 2010 and recommended that we conduct an additional trial to demonstrate the safety and effectiveness of Pixuvri. In December 2010, we filed an appeal with the OND's Center for Drug Evaluation and Research regarding the FDA's April 2010 decision to not approve Pixuvri for relapsed or refractory aggressive NHL. We filed our appeal under the FDA's formal dispute resolution process asking the OND to conclude that PIX301 demonstrated efficacy.

On May 3, 2011, we announced that the OND responded to our December 2010 appeal of the FDA's April 2010 decision to not approve Pixuvri for relapsed or refractory aggressive NHL. In its response, the OND indicated that after considering the data available in the appeal, it does not believe that accelerated approval of our NDA is necessarily out of reach based on a single controlled clinical trial, provided that two key matters can be resolved satisfactorily. First, the circumstances of stopping the PIX301 trial early must be resolved to assure that ongoing results assessment were not dictating the decision to stop. Second, ascertainment of the primary endpoint in the PIX301 study must be determined to have been sound and not subject to bias. The OND also indicated that our request that the OND find that the data in the NDA demonstrate efficacy and return the NDA to the Office of Oncology Drug Products for consideration of safety and other issues was denied because the OND was not able to conclude that efficacy had been demonstrated. However, the OND also did not find that it could be concluded that PIX301 was a failed study, which warranted application of interim analysis statistical thresholds. The OND further indicated that we could re-submit the NDA for a re-review of the safety and efficacy, provided that the two key matters can be resolved satisfactorily.

Table of Contents

On June 14, 2011, we announced that we had met with the DODP in a meeting that focused on the documents we proposed to provide regarding the circumstances of stopping the enrollment of PIX301 prior to achieving the original planned patient accrual and the make-up of the new radiology expert panel. The DODP confirmed that the NDA would be reviewed within six months from the resubmission of the NDA. We anticipate filing the additional information later this year, offering the possibility that we could obtain FDA approval as early as the first half of 2012. However, you should not infer that the aforementioned developments increase the likelihood of FDA approval of the NDA.

Obtaining regulatory approval requires substantial time, effort and financial resources, and we may not be able to obtain approval of any of our products on a timely basis, or at all. In addition, data obtained from preclinical and clinical trials are susceptible to varying interpretations, and government regulators and our collaborators may not agree with our interpretation of our clinical trial results. If our products are not approved quickly enough to provide net revenues to defray our debt and operating expenses, our business, financial condition and results of operations will be adversely affected.

In the event that we receive marketing approval for any of our product candidates, we will be subject to numerous regulations and statutes regulating the manner of selling and obtaining reimbursement for those products. For example, federal statutes generally prohibit providing certain discounts and payments to physicians to encourage them to prescribe our product. Violations of such regulations or statutes may result in treble damages, criminal or civil penalties, fines or exclusion of us or our employees from participation in federal and state health care programs. Although we have policies prohibiting violations of relevant regulations and statutes, unauthorized actions of our employees or consultants, or unfavorable interpretations of such regulations or statutes may result in third parties or regulatory agencies bringing legal proceedings or enforcement actions against us. Because we will likely need to develop a new sales force for any future marketed products, we may have a greater risk of such violations from lack of adequate training or experience. The expense to retain and pay legal counsel and consultants to defend against any such proceedings would be substantial, and together with the diversion of management's time and attention to assist in any such defense, may negatively affect our business, financial condition and results of operations.

In addition, both before and after approval, our contract manufacturers and our products are subject to numerous regulatory requirements covering, among other things, testing, manufacturing, quality control, labeling, advertising, promotion, distribution and export. Manufacturing processes must conform to current Good Manufacturing Practice, or cGMPs. The FDA and other regulatory authorities periodically inspect manufacturing facilities to assess compliance with cGMPs. Accordingly, manufacturers must continue to expend time, money and effort to maintain compliance. Failure to comply with FDA, EMA or other applicable regulations may cause us to curtail or stop the manufacture of such products until we obtain regulatory compliance.

The marketing and promotion of pharmaceuticals is also heavily regulated, particularly with regard to prohibitions on the promotion of products for off-label uses. In April 2007, we paid a civil penalty of \$10.6 million and entered into a settlement agreement with the United States Attorney's Office for the Western District of Washington arising out of their investigation into certain of our prior marketing practices relating to TRISENOX, which was divested to Cephalon Inc. in July 2005. As part of that settlement agreement and in connection with the acquisition of Zevalin, we also entered into a corporate integrity agreement with the Office of Inspector General of the U.S. Department of Health and Human Services, which required us to establish a compliance committee and compliance program and adopt a formal code of conduct.

We face direct and intense competition from our competitors in the biotechnology and pharmaceutical industries, and we may not compete successfully against them.

Competition in the oncology market is intense and is accentuated by the rapid pace of technological development. We anticipate that we will face increased competition in the future as new companies enter the market. Our competitors in the United States and elsewhere are numerous and include, among others, major multinational pharmaceutical companies, specialized biotechnology companies and universities and other research institutions. Specifically:

If we are successful in bringing Pixuvri to market, Pixuvri will face competition from currently marketed anthracyclines, such as mitoxantrone (Novantrone®), and new anti-cancer drugs with reduced toxicity that may be developed and marketed.

If we are successful in bringing OPAXIO to market, we will face direct competition from oncology-focused multinational corporations. OPAXIO will compete with other taxanes. Many oncology-focused multinational corporations currently market

Table of Contents

or are developing taxanes, epothilones, and other cytotoxic agents, which inhibit cancer cells by a mechanism similar to taxanes, or similar products. Such corporations include, among others, Bristol-Myers Squibb Co. and others, which market paclitaxel and generic forms of paclitaxel; Sanofi-Aventis, which markets docetaxel; Genentech, Roche and OSI Pharmaceuticals, which market Tarceva ; Genentech and Roche, which market Avastin ; Eli Lilly, which markets Alimta and Abraxis, which markets Abraxane . In addition, other companies such as NeoPharm Inc. and Telik, Inc. are also developing products, which could compete with OPAXIO.

If we are successful in bringing tosedostat to market, we will face direct competition from oncology-focused multinational corporations including Eisai, Sanofi-Aventis, Celgene, and others. Currently some generic compounds are also available which may be used in treating conditions where tosedostat may have application, this could result in additional competitive pressure on price and volume. Additionally there are other products in development for AML from both large and small pharmaceutical companies which may compete with tosedostat.

If we are successful in bringing brostallicin to market, we will face direct competition from other minor groove binding agents including Yondelis[®], which is currently developed by PharmaMar and has received Authorization of Commercialization from the European Commission for soft tissue sarcoma.

Many of our competitors, particularly the multinational pharmaceutical companies, either alone or together with their collaborators, have substantially greater financial resources and substantially larger development and marketing teams than us. In addition, many of our competitors, either alone or together with their collaborators, have significantly greater experience than we do in developing, manufacturing and marketing products. As a result, these companies' products might come to market sooner or might prove to be more effective, less expensive, have fewer side effects or be easier to administer than ours. In any such case, sales of our current or future products would likely suffer and we might never recoup the significant investments we are making to develop these product candidates.

Uncertainty regarding third-party reimbursement and healthcare cost containment initiatives may limit our returns.

The ongoing efforts of governmental and third-party payors to contain or reduce the cost of healthcare may affect our ability to commercialize our products successfully. Governmental and other third-party payers continue to attempt to contain healthcare costs by:

challenging the prices charged for health care products and services;

limiting both coverage and the amount of reimbursement for new therapeutic products;

denying or limiting coverage for products that are approved by the FDA but are considered experimental or investigational by third-party payors;

refusing in some cases to provide coverage when an approved product is used for disease indications in a way that has not received FDA marketing approval; and

denying coverage altogether.

The continuing efforts of government and insurance companies, health maintenance organizations and other payers of healthcare costs to contain or reduce costs of health care may affect our future revenues and profitability, and the future revenues and profitability of our potential customers, suppliers and collaborative partners and the availability of capital. In the United States, given the comprehensive health care reform legislation that the President signed into law on March 23, 2010, under the Patient Protection and Affordable Care Act (HR 3590), or the PPACA, the U.S. Congress and state legislatures will likely continue to focus on health care reform, the cost of healthcare services and products and on the reform of the Medicare and Medicaid systems. While we cannot predict whether any such legislative or regulatory proposals will be adopted, the announcement or adoption of these proposals could significantly influence the purchase of healthcare services and products, resulting in lower prices and reducing demand for our products. In addition, in almost all European markets, pricing and choice of prescription

pharmaceuticals are subject to governmental control. Therefore, the price of our products and their reimbursement in Europe will be determined by national regulatory authorities.

S-18

Table of Contents

Even if we succeed in bringing any of our proposed products to the market, they may not be considered cost-effective and third-party reimbursement might not be available or sufficient. If adequate third-party coverage is not available, we may not be able to maintain price levels sufficient to realize an appropriate return on our investment in research and product development. In addition, legislation and regulations affecting the pricing of pharmaceuticals may change in ways adverse to us before or after any of our proposed products are approved for marketing.

If users of our products are unable to obtain adequate reimbursement from third-party payers, or if new restrictive legislation is adopted, market acceptance of our products may be limited and we may not achieve anticipated revenues.

Our ability to commercialize our products will depend in part on the extent to which appropriate reimbursement levels for the cost of our products and related treatment are obtained by governmental authorities, private health insurers and other organizations, such as health maintenance organizations, or HMOs. Third-party payers are increasingly challenging the prices charged for medical care. Also, the trend toward managed health care in the United States and the concurrent growth of organizations such as HMOs, which could control or significantly influence the purchase of health care services and products, as well as legislative proposals to further reform health care or reduce government insurance programs, may all result in lower prices for our products if approved for commercialization. The cost containment measures that health care payers and providers are instituting and the effect of any health care reform could materially harm our ability to sell our products at a profit.

Products that appear promising in research and development may be delayed or fail to reach later stages of development or the market.

The successful development of pharmaceutical products is highly uncertain and obtaining regulatory approval to market drugs to treat cancer is expensive, difficult and risky. Products that appear promising in research and development may be delayed or fail to reach later stages of development or the market for several reasons, including:

clinical trial results may show the product to be less effective than desired or to have harmful or problematic side effects;

preclinical tests may show the product to be toxic or lack efficacy in animal models;

failure to receive the necessary U.S. and international regulatory approvals or a delay in receiving such approvals;

difficulties in formulating the product, scaling the manufacturing process or getting approval for manufacturing;

manufacturing costs, pricing, reimbursement issues or other factors may make the product uneconomical to commercialize;

other companies or people have or may have proprietary rights to a product candidate, such as patent rights, and will not let the product candidate be sold on reasonable terms, or at all; or

the product candidate is not cost effective in light of existing therapeutics.

Preclinical and clinical data can be interpreted in different ways, which could delay, limit or prevent regulatory approval. Negative or inconclusive results or adverse medical events during a clinical trial could delay, limit or prevent regulatory approval. In addition, any significant problem in the production of our products, such as the inability of a supplier to provide raw materials or supplies used to manufacture our products, equipment obsolescence, malfunctions or failures, product quality or contamination problems, or changes in regulatory requirements or standards that require modifications to our manufacturing process could delay, limit or prevent regulatory approval which could harm our business, financial condition and results or the trading price of our securities. There can be no assurance as to whether or when we will receive regulatory approvals for our products.

Edgar Filing: CELL THERAPEUTICS INC - Form 424B5

If any of our license agreements for intellectual property underlying Pixuvri, OPAXIO, tosedostat, brostallicin or any other products are terminated, we may lose the right to develop or market that product.

We have licensed intellectual property, including patent applications relating to intellectual property for Pixuvri, tosedostat and brostallicin. We have also in-licensed the intellectual property for our drug delivery technology relating to OPAXIO which uses polymers that are linked to drugs, known as polymer-drug conjugates. Some of our product development programs depend on our ability to maintain rights under these licenses. Each licensor has the power to terminate its agreement with us if we fail to meet our obligations under these licenses. We may not be able to meet our obligations under these licenses. If we default under any license

agreement, we may lose our right to market and sell any products based on the licensed technology.

S-19

Table of Contents

We hold rights under numerous patents that protect inventions originating from our research and development, and the expiration of any one or more of these patents may allow our competitors to copy the inventions that are currently protected.

We dedicate significant resources to protecting our intellectual property, which is important to our business. We have filed numerous patent applications in the U.S. and various other countries seeking protection of inventions originating from our research and development and we have also obtained rights to various patents and patent applications under licenses with third parties. Patents have been issued on many of these applications. We have issued patents pending or issued in the U.S. and foreign countries directed to Pixuvri, OPAXIO, brostallicin and other product candidates. However, the lives of these patents are limited. Patents for the individual products extend for varying periods according to the date of the patent filing or grant and the legal term of patents in the various countries where patent protection is obtained. The Pixuvri-directed patents will expire in 2014; the OPAXIO-directed patents will expire on various dates ranging from 2017 through 2018; and the brostallicin-directed patents will expire on various dates ranging from 2017 to 2023. Although such patent expiration ranges are only for U.S. issued patents and do not account for potential extensions that may be available in certain countries (for example, certain Pixuvri-directed patents may be subject to possible patent-term extensions that could provide extensions through 2019 in the U.S. and 2021 in Europe), there can be no assurance that such extensions will be obtained. The expiration of these patents may allow our competitors to copy the inventions that are currently protected and better compete with us.

If there is an adverse outcome in the securities class actions and shareholder derivative litigation that have been filed against us, our business may be harmed.

We and certain of our officers and directors are named as defendants in purported securities class actions and shareholder derivative lawsuits filed in the U.S. District Court for the Western District of Washington. These securities class action lawsuits are brought on behalf of a putative class of purchasers of our securities from March 25, 2008 through March 22, 2010, and seek unspecified damages. All of the purported securities class actions have been consolidated into one securities class action, a lead plaintiff has been appointed, and a consolidated amended complaint has been filed. The defendants filed a motion to dismiss the consolidated amended complaint on October 27, 2010. Plaintiffs filed their opposition to the motion on December 3, 2010, and the defendants filed their reply on December 22, 2010. The motion was heard on January 28, 2011. On February 4, 2011, the court issued an order denying in large part the defendants' motion. Defendants have answered and filed affirmative defenses to the Complaint's claims. The court has set a trial date of June 25, 2012 for the securities class action. The currently filed shareholder derivative lawsuits have also been consolidated into one derivative action and co-lead plaintiffs have been appointed. The court ordered the derivative action stayed pending the outcome of the defendants' motion to dismiss in the securities class action. On February 4, 2011, the court lifted the stay. The parties to that action have negotiated a schedule to coordinate activity in that matter with that in the class action discussed above. The Court has set a trial date of December 3, 2012 for the shareholder derivative action. As with any litigation proceeding, we cannot predict with certainty the eventual outcome of pending litigation. Furthermore, we may have to incur substantial expenses in connection with these lawsuits. In the event of an adverse outcome, our business could be materially harmed.

If we fail to adequately protect our intellectual property, our competitive position could be harmed.

Development and protection of our intellectual property are critical to our business. If we do not adequately protect our intellectual property, competitors may be able to practice our technologies. Our success depends in part on our ability to:

obtain patent protection for our products or processes both in the United States and other countries;

protect trade secrets; and

prevent others from infringing on our proprietary rights.

When polymers are linked, or conjugated, to drugs, the results are referred to as polymer-drug conjugates. We are developing drug delivery technology that links chemotherapy to biodegradable polymers. For example, OPAXIO is paclitaxel, the active ingredient in Taxol[®], one of the world's best selling cancer drugs, linked to polyglutamate. We may not receive a patent for all of our polymer-drug conjugates and we may be challenged by the holder of a patent covering the underlying drug and/or methods for its use or manufacture.

Table of Contents

The patent position of biopharmaceutical firms generally is highly uncertain and involves complex legal and factual questions. The U.S. Patent and Trademark Office has not established a consistent policy regarding the breadth of claims that it will allow in biotechnology patents. If it allows broad claims, the number and cost of patent interference proceedings in the United States and the risk of infringement litigation may increase. If it allows narrow claims, the risk of infringement may decrease, but the value of our rights under our patents, licenses and patent applications may also decrease. Patent applications in which we have rights may never issue as patents and the claims of any issued patents may not afford meaningful protection for our technologies or products. In addition, patents issued to us or our licensors may be challenged and subsequently narrowed, invalidated or circumvented. Litigation, interference proceedings or other governmental proceedings that we may become involved in with respect to our proprietary technologies or the proprietary technology of others could result in substantial cost to us. Patent litigation is widespread in the biotechnology industry, and any patent litigation could harm our business. Costly litigation might be necessary to protect a patent position or to determine the scope and validity of third-party proprietary rights, and we may not have the required resources to pursue any such litigation or to protect our patent rights. Any adverse outcome in litigation with respect to the infringement or validity of any patents owned by third parties could subject us to significant liabilities to third parties, require disputed rights to be licensed from third parties or require us to cease using a product or technology.

We also rely upon trade secrets, proprietary know-how and continuing technological innovation to remain competitive. Third parties may independently develop such know-how or otherwise obtain access to our technology. While we require our employees, consultants and corporate partners with access to proprietary information to enter into confidentiality agreements, these agreements may not be honored.

Our products could infringe upon the intellectual property rights of others, which may cause us to engage in costly litigation and, if unsuccessful, could cause us to pay substantial damages and prohibit us from selling our products.

We attempt to monitor patent filings for patents that may be relevant to our products and product candidates in an effort to guide the design and development of our products to avoid infringement, but have not conducted an exhaustive search. We may not be able to successfully challenge the validity of these patents and could be required to pay substantial damages, possibly including treble damages, for past infringement and attorneys' fees if it is ultimately determined that our products infringe a third-party's patents. Further, we may be prohibited from selling our products before we obtain a license, which, if available at all, may require us to pay substantial royalties. Moreover, third parties may challenge the patents that have been issued or licensed to us. Even if infringement claims against us are without merit, or if we challenge the validity of issued patents, lawsuits take significant time, may be expensive and may divert management attention from other business concerns.

We could fail in financing efforts or be delisted from NASDAQ if we fail to receive shareholder approval when needed.

We are required under the NASDAQ Marketplace Rules to obtain shareholder approval for any issuance of additional equity securities that would comprise more than 20% of the total shares of our common stock outstanding before the issuance of such securities sold at a discount to the greater of book or market value in an offering that is not deemed to be a public offering by the NASDAQ Marketplace Rules or NASDAQ. Funding of our operations in the future may require issuance of additional equity securities that would comprise more than 20% of the total shares of our common stock outstanding, but we might not be successful in obtaining the required shareholder approval for such an issuance, particularly in light of the difficulties we have experienced in obtaining a quorum and holding shareholder meetings as outlined above. If we are unable to obtain financing due to shareholder approval difficulties, such failure may harm our ability to continue operations.

We may be unable to obtain the raw materials necessary to produce our OPAXIO product candidate in sufficient quantity to meet demand when and if such product is approved.

We may not be able to continue to purchase the materials necessary to produce OPAXIO, including paclitaxel, in adequate volume and quality. Paclitaxel is derived from certain varieties of yew trees and the supply of paclitaxel is controlled by a limited number of companies. We purchase the raw materials paclitaxel and polyglutamic acid from single sources. Should the paclitaxel or polyglutamic acid purchased from our sources prove to be insufficient in quantity or quality, should a supplier fail to deliver in a timely fashion or at all, or should these relationships terminate, we may not be able to qualify and obtain a sufficient supply from alternate sources on acceptable terms, or at all.

Table of Contents

We may be unable to obtain the raw materials necessary to produce our tosedostat product candidate in sufficient quantity to meet demand when and if such product is approved.

We may not be able to obtain the raw materials necessary to produce tosedostat. We currently do not have a firm to manufacture the commercial drug product and drug substance. Should we be unable to identify, negotiate and contract with a manufacturing firm for the commercial drug product and drug substance in sufficient quantity or quality, or should a contracted supplier fail to deliver in a timely fashion or at all, or should these relationships, if any, terminate, we may not be able to qualify and obtain a sufficient supply on acceptable terms, or at all.

Our dependence on third-party manufacturers means that we do not always have direct control over the manufacture, testing or distribution of our products.

We do not currently have internal analytical laboratory or manufacturing facilities to allow the testing or production and distribution of drug products in compliance with cGMPs. Because we do not directly control our suppliers, these vendors may not be able to provide us with finished product when we need it.

We will be dependent upon these third parties to supply us in a timely manner with products manufactured in compliance with cGMPs or similar manufacturing standards imposed by United States and/or foreign regulatory authorities where our products will be tested and/or marketed. While the FDA and other regulatory authorities maintain oversight for cGMP compliance of drug manufacturers, contract manufacturers and contract service providers may at times violate cGMPs. The FDA and other regulatory authorities may take action against a contract manufacturer who violates cGMPs. Failure to comply with FDA, EMA or other applicable regulations may cause us to curtail or stop the manufacture of such products until we obtain regulatory compliance.

In addition, one of our other products under development, OPAXIO, has a complex manufacturing process and supply chain, which may prevent us from obtaining a sufficient supply of drug product for the clinical trials and commercial activities currently planned or underway on a timely basis, if at all. The active pharmaceutical ingredients and drug products for Pixuvri and brostallicin are both manufactured by a single vendor. Finished product manufacture and distribution for both Pixuvri and brostallicin are to be manufactured and distributed by different single vendors. We are currently disputing our right to cancel the exclusive manufacturing contract between us and the former manufacturer of Pixuvri. We assert multiple grounds for terminating this exclusive manufacturing agreement, which the former manufacturer disputes. The former manufacturer has asserted that we do not have the right to terminate the manufacturing contracts and has filed a lawsuit in the Court of Milan to compel us to source Pixuvri from that manufacturer. A hearing was held on January 21, 2010 to discuss preliminary matters and set a schedule for future filings and hearings. On November 11, 2010 a hearing was held aimed at examining and discussing the requests for evidence submitted by the parties in the briefs filed pursuant to article 183, paragraph 6 of the Italian code of civil procedure. At the hearing of November 11, the judge declared that the case does not require any discovery or evidentiary phase, as it may be decided on the basis of the documents and pleadings filed by the parties. The judge fixed accordingly the last hearing for October 11, 2012, for the parties to definitively submit to the judge their requests.

Even if our drug candidates are successful in clinical trials, we may not be able to successfully commercialize them.

Since our inception in 1991, we have dedicated substantially all of our resources to the research and development of our technologies and related compounds. All of our compounds currently are in research or development, and have not received marketing approval.

Prior to commercialization, each product candidate requires significant research, development and preclinical testing and extensive clinical investigation before submission of any regulatory application for marketing approval. The development of anti-cancer drugs, including those we are currently developing, is unpredictable and subject to numerous risks. Potential products that appear to be promising at early stages of development may not reach the market for a number of reasons including that they may:

be found ineffective or cause harmful side effects during preclinical testing or clinical trials;

fail to receive necessary regulatory approvals;

be difficult to manufacture on a scale necessary for commercialization;

be uneconomical to produce;

fail to achieve market acceptance; or

be precluded from commercialization by proprietary rights of third parties.

S-22

Table of Contents

The occurrence of any of these events could adversely affect the commercialization of our products. Products, if introduced, may not be successfully marketed and/or may not achieve customer acceptance. If we fail to commercialize products or if our future products do not achieve significant market acceptance, we will not likely generate significant revenues or become profitable.

If we do not successfully develop our product candidates into marketable products, we may be unable to generate significant revenue or become profitable.

We divested our commercial product, TRISENOX, in July 2005 and fully divested our commercial product, Zevalin, in March 2009. Currently, we do not have a marketed product, and unless we are able to develop one of our product candidates, such as Pixuvri, into an approved commercial product, we will not generate any significant revenues from product sales, royalty payments, license fees or otherwise. Pixuvri, OPAXIO, tosedostat and brostallicin are currently in clinical trials; these clinical trials may not be successful and, even if they are, we may not be successful in developing any of them into a commercial product. For example, our STELLAR phase III clinical trials for OPAXIO for the treatment of non-small cell lung cancer failed to meet their primary endpoints. In addition, a number of companies in the pharmaceutical industry, including us, have suffered significant setbacks in advanced clinical trials, even after reporting promising results in earlier trials. We will need to commit significant time and resources to develop these and any additional product candidates. Even if our trials are viewed as successful, we may not get regulatory approval. Our product candidates will be successful only if:

our product candidates are developed to a stage that will enable us to commercialize them or sell related marketing rights to pharmaceutical companies;

we are able to commercialize product candidates in clinical development or sell the marketing rights to third parties; and

our product candidates, if developed, are approved by the regulatory authorities.

We are dependent on the successful completion of these goals in order to generate revenues. The failure to generate such revenues may preclude us from continuing our research and development of these and other product candidates.

If we are unable to enter into new in-licensing arrangements, our future product portfolio and potential profitability could be harmed.

One component of our business strategy is in-licensing drug compounds developed by other pharmaceutical and biotechnology companies or academic research laboratories. All of our product candidates in clinical development are in-licensed from a third-party, including Pixuvri, OPAXIO, tosedostat and brostallicin.

Competition for new promising compounds and commercial products can be intense. If we are not able to identify future in-licensing opportunities and enter into future licensing arrangements on acceptable terms, our future product portfolio and potential profitability could be harmed.

We may take longer to complete our clinical trials than we expect, or we may not be able to complete them at all.

Before regulatory approval for any potential product can be obtained, we must undertake extensive clinical testing on humans to demonstrate the safety and efficacy of the product. Although for planning purposes we forecast the commencement and completion of clinical trials, the actual timing of these events can vary dramatically due to a number of factors. For example:

we may not obtain authorization to permit product candidates that are already in the preclinical development phase to enter the human clinical testing phase;

the FDA or the EMA may object to proposed protocols;

Edgar Filing: CELL THERAPEUTICS INC - Form 424B5

there may be shortages of available product supplies or the materials that are used to manufacture the products;

the quality or stability of the product candidates may fall below acceptable standards;

S-23

Table of Contents

authorized preclinical or clinical testing may require significantly more time, resources or expertise than originally expected to be necessary;

clinical testing may not show potential products to be safe and efficacious and, as with many drugs, may fail to demonstrate the desired safety and efficacy characteristics in human clinical trials;

clinical testing may show that potential products are not appropriate for the specific indication for which they are being tested;

the results from preclinical studies and early clinical trials may not be indicative of the results that will be obtained in later-stage clinical trials;

we or regulatory authorities may suspend clinical trials at any time on the basis that the participants are being exposed to unacceptable health risks or for other reasons; and

the rates of patient recruitment and enrollment of patients who meet trial eligibility criteria may be lower than anticipated, which is a function of many factors, including the number of patients with the relevant conditions, the nature of the clinical testing, the proximity of patients to clinical testing centers, the eligibility criteria for tests as well as competition with other clinical testing programs involving the same patient profile but different treatments.

We have limited experience in conducting clinical trials. We expect to continue to rely on third parties, such as contract research organizations, academic institutions and/or cooperative groups, to conduct, oversee and monitor clinical trials as well as to process the clinical results and manage test requests, which may result in delays or failure to complete trials if the third parties fail to perform or to meet the applicable standards.

If we fail to commence, complete, experience delays in any of our present or planned clinical trials or need to perform more or larger clinical trials than planned, our development costs may increase and/or our ability to commercialize our product candidates may be adversely affected. If delays or costs are significant, our financial results and our ability to commercialize our product candidates may be adversely affected.

If we fail to establish and maintain collaborations or if our partners do not perform, we may be unable to develop and commercialize our product candidates.

We have entered into collaborative arrangements with third-parties to develop and/or commercialize product candidates and are currently seeking additional collaborations. For example, we entered into an agreement with the GOG to perform a phase III trial of OPAXIO in patients with ovarian cancer. Additional collaborations might be necessary in order for us to fund our research and development activities and third-party manufacturing arrangements, seek and obtain regulatory approvals and successfully commercialize our existing and future product candidates. If we fail to enter into additional collaborative arrangements or fail to maintain our existing collaborative arrangements, the number of product candidates from which we could receive future revenues would decline. For example, in 2005 we sold our product TRISENOX to Cephalon and, pursuant to the terms of the purchase agreement under which TRISENOX was sold, we are entitled to receive milestone payments upon the approval by the FDA of new labeled uses for TRISENOX; however, Cephalon may decide not to submit any additional information to the FDA to apply for label expansion of TRISENOX, in which case we would not receive a milestone payment under the agreement.

Our dependence on collaborative arrangements with third parties will subject us to a number of risks that could harm our ability to develop and commercialize products, including that:

collaborative arrangements may not be on terms favorable to us;

Edgar Filing: CELL THERAPEUTICS INC - Form 424B5

disagreements with partners may result in delays in the development and marketing of products, termination of our collaboration agreements or time consuming and expensive legal action;

we cannot control the amount and timing of resources partners devote to product candidates or their prioritization of product candidates and partners may not allocate sufficient funds or resources to the development, promotion or marketing of our products, or may not perform their obligations as expected;

S-24

Table of Contents

partners may choose to develop, independently or with other companies, alternative products or treatments, including products or treatments which compete with ours;

agreements with partners may expire or be terminated without renewal, or partners may breach collaboration agreements with us;

business combinations or significant changes in a partner's business strategy might adversely affect that partner's willingness or ability to complete its obligations to us; and

the terms and conditions of the relevant agreements may no longer be suitable.

The occurrence of any of these events could adversely affect the development or commercialization of our products.

Because we base several of our drug candidates on unproven technologies, we may never develop them into commercial products.

We base several of our product candidates upon novel technologies that we are using to develop drugs for the treatment of cancer. These technologies have not been proven. Furthermore, preclinical results in animal studies may not predict outcomes in human clinical trials. Our product candidates may not be proven safe or effective. If these technologies do not work, our drug candidates will not develop into commercial products.

Because there is a risk of product liability associated with our products, we face potential difficulties in obtaining insurance.

Our business exposes us to potential product liability risks inherent in the testing, manufacturing and marketing of human pharmaceutical products, and we may not be able to avoid significant product liability exposure. While we have insurance covering the product use in our clinical trials for our product candidates, it is possible that we will not be able to maintain such insurance on acceptable terms or that any insurance obtained will not provide adequate coverage against potential liabilities. Our inability to obtain sufficient insurance coverage at an acceptable cost or otherwise to protect against potential product liability claims could prevent or limit the commercialization of any products we develop. A successful product liability claim in excess of our insurance coverage could exceed our net worth.

Since we use hazardous materials in our business, we may be subject to claims relating to improper handling, storage or disposal of these materials.

Our research and development activities involve the controlled use of hazardous materials, chemicals and various radioactive compounds. We are subject to international, federal, state and local laws and regulations governing the use, manufacture, storage, handling and disposal of such materials and certain waste products. Although we believe that our safety procedures for handling and disposing of such materials comply with the standards prescribed by the regulations, the risk of accidental contamination or injury from these materials cannot be eliminated completely. In the event of such an accident, we could be held liable for any damages that result and any such liability not covered by insurance could exceed our resources. Compliance with environmental laws and regulations may be expensive, and current or future environmental regulations may impair our research, development or production efforts.

We may not be able to conduct animal testing in the future, which could harm our research and development activities.

Certain of our research and development activities involve animal testing. Such activities have been the subject of controversy and adverse publicity. Animal rights groups and other organizations and individuals have attempted to stop animal testing activities by pressing for legislation and regulation in these areas and by disrupting activities through protests and other means. To the extent the activities of these groups are successful, our business could be materially harmed by delaying or interrupting our research and development activities.

The unfavorable outcome of litigation and other claims against us could harm our financial condition and results of operations.

We are subject to a variety of claims and lawsuits from time to time, some of which arise in the ordinary course of our business. Adverse outcomes in some or all of such pending cases may result in significant monetary damages or injunctive relief against us. While we currently believe that resolution of these matters, individually or in the aggregate, will not have a material

Table of Contents

adverse impact on our financial position, results of operations or trading price of our securities, the ultimate outcome of litigation and other claims is subject to inherent uncertainties, and our view of these matters may change in the future. It is possible that our financial condition and results of operations could be harmed in any period in which the effect of an unfavorable final outcome becomes probable and reasonably estimable.

Our financial condition and results of operations could be adversely affected by public health issues, wars and other military action, as well as terrorist attacks and threats and government responses thereto, especially if any such actions were directed at us or our facilities or customers.

Public health issues, terrorist attacks in the United States and elsewhere, government responses thereto, and military actions in Iraq, Afghanistan and elsewhere, may disrupt our operations or those of our customers and suppliers and may affect the availability of materials needed to manufacture our products or the means to transport those materials to manufacturing facilities and finished products to customers. A health pandemic could cause damage or disruption to international commerce by creating economic and political uncertainties that may have a strong negative impact on the global economy, us, and our customers or suppliers. Should a severe public health issues arise, we could be negatively impacted by the need for more stringent employee travel restrictions, additional limitations in the availability of freight services, governmental actions limiting the movement of products between various regions and disruptions in the operations of our customers or suppliers. The long-term effects public health issues, the terrorist attacks, and the ongoing war on terrorism on our business and on the global economy remain unknown. In addition, any of these events could increase volatility in the United States and world financial markets which may depress the price of our common stock and may limit the capital resources available to us or our customers or suppliers, which could result in decreased orders from customers, less favorable financing terms from suppliers, and scarcity or increased costs of materials and components of our products. Additionally, terrorist attacks directly upon us may significantly disrupt our ability to conduct our business. Any of these occurrences could have a significant impact on our operating results, revenues and costs and may result in increased volatility of the trading price of our securities.

Higher health care costs could adversely affect our business.

We will be impacted by the recent passage of the PPACA. Under the PPACA, we may be required to amend our health care plans to, among other things, provide affordable coverage, as defined in the PPACA, to all employees, or otherwise be subject to a payment per employee based on the affordability criteria in the Act: cover adult children of our employees to age 26; delete lifetime limits; and delete pre-existing condition limitations. Many of these requirements will be phased in over a period of time. Additionally, some states and localities have passed state and local laws mandating the provision of certain levels of health benefits by some employers. Increased health care costs could harm our business, financial condition and results of operations.

Risks Related to this Offering

There is no public market for the Series 13 Preferred Stock or warrants being offered in this offering.

There is no established public trading market for the Series 13 Preferred Stock or warrants being offered in this offering, and we do not expect a market to develop. In addition, we do not intend to apply for listing of the Series 13 Preferred Stock or warrants on any securities exchange. Without an active market, the liquidity of the Series 13 Preferred Stock and warrants will be limited.

Purchasers of Series 13 Preferred Stock and warrants who convert their shares of Series 13 Preferred Stock into common stock or exercise their warrants for shares common stock will incur immediate dilution.

Upon conversion or exercise of your shares of Series 13 Preferred Stock or warrants, as the case may be, you will experience immediate and substantial dilution because the per share conversion price of your shares of Series 13 Preferred Stock and the exercise price of your warrants will be higher than the net tangible book value per share of the outstanding common stock immediately after this offering. In addition, you will experience dilution when we issue additional shares of common stock that we are permitted or required to issue under outstanding options and warrants and under our stock option plan or other employee or director compensations plans.

Holders of our Series 13 Preferred Stock will have no rights as a holder of common stock until they acquire common stock.

Until you acquire shares of common stock upon conversion or exercise of the Series 13 Preferred Stock and warrants, as the case may be, you will have no rights with respect to our common stock, other than the right of the convertible preferred stock to receive dividends equal to and in the same term as dividends actually paid on common stock, including rights to vote or respond to tender offers. Upon conversion or exercise of your Series 13 Preferred Stock or warrants, as the case may be, you will be entitled to exercise the rights of a holder of common stock only as to matters for which the record date occurs after the conversion or exercise date.

Table of Contents

Since we have broad discretion in how we use the net proceeds from this offering, we may use the net proceeds in ways in which you disagree.

We may use a portion of the net proceeds from this offering to fund possible investments in, or acquisitions of, complementary businesses, technologies or products. We may also use a portion of the net proceeds from this offering for general corporate purposes. See Use of Proceeds. We have not allocated specific amounts of the net proceeds from this offering for any specific purpose. Accordingly, our management will have significant flexibility in applying the net proceeds of this offering. You will be relying on the judgment of our management with regard to the use of these net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. It is possible that the net proceeds will be invested in a way that does not yield a favorable, or any, return for our company. The failure of our management to use such funds effectively could have a material adverse effect on our business, financial condition, operating results and cash flow.

Risks Related to Holders of our Common Stock

Shares of common stock are equity securities and are subordinate to our existing and future indebtedness.

Shares of our common stock are common equity interests. This means that our common stock ranks junior to the Series 13 Preferred Stock and any other preferred stock that we may issue in the future, to our indebtedness and to all creditor claims and other non-equity claims against us and our assets available to satisfy claims on us, including claims in a bankruptcy or similar proceeding. Our existing and future indebtedness and our preferred stock may restrict payment of dividends on our common stock.

Additionally, unlike indebtedness, where principal and interest customarily are payable on specified due dates, in the case of our common stock, (i) dividends are payable only when and if declared by our board of directors or a duly authorized committee of our board of directors, and (ii) as a corporation, we are restricted to making dividend payments and redemption payments out of legally available assets. We have never paid a dividend on our common stock and have no current intention to pay dividends in the future. Furthermore, our common stock places no restrictions on our business or operations or on our ability to incur indebtedness or engage in any transactions, subject only to the voting rights available to shareholders generally.

The market price of shares of our common stock may be adversely affected by market conditions affecting the stock markets in general, including price and trading fluctuations on The NASDAQ Capital Market.

The market price of our common stock may be adversely affected by market conditions affecting the stock markets in general, including price and trading fluctuations on The NASDAQ Capital Market. These conditions may result in (i) volatility in the level of, and fluctuations in, the market prices of stocks generally and, in turn, our shares of common stock, and (ii) sales of substantial amounts of our common stock in the market, in each case that could be unrelated or disproportionate to changes in our operating performance.

There may be future sales or other dilution of our equity, which may adversely affect the market price of shares of our common stock.

We are not restricted from issuing additional shares of common stock or preferred stock, including any securities that are convertible into or exchangeable for, or that represent the right to receive, shares of common stock or preferred stock, or any substantially similar securities. The market price of our shares of common stock or preferred stock could decline as a result of sales of a large number of shares of our common stock or preferred stock or similar securities in the market, or the perception that such sales could occur in the future.

The market price of our common stock is extremely volatile, which may affect our ability to raise capital in the future and may subject the value of your investment in our securities to sudden decreases.

The market price for securities of biopharmaceutical and biotechnology companies, including ours, historically has been highly volatile, and the market from time to time has experienced significant price and volume fluctuations that are unrelated to the operating performance of such companies. For example, during the 12-month period ended June 28, 2011, our stock price has ranged from a low of \$1.26 to a high of \$3.30 (as adjusted to reflect the one-for-six reverse stock split effected on May 15, 2011). Fluctuations in the trading price or liquidity of our common stock may adversely affect the value of your investment in our common stock.

Table of Contents

Factors that may have a significant impact on the market price and marketability of our securities include:

announcements by us or others of results of preclinical testing and clinical trials and regulatory actions;

announcements of technological innovations or new commercial therapeutic products by us, our collaborative partners or our present or potential competitors;

our issuance of additional debt, equity or other securities, which we need to pursue in 2011 to generate additional funds to cover our current debt and operating expenses;

our quarterly operating results;

developments or disputes concerning patent or other proprietary rights;

developments in our relationships with collaborative partners;

acquisitions or divestitures;

litigation and government proceedings;

adverse legislation, including changes in governmental regulation;

third-party reimbursement policies;

changes in securities analysts' recommendations;

short selling;

changes in health care policies and practices;

halting or suspension of trading in our common stock by NASDAQ, CONSOB or the Borsa Italiana;

economic and other external factors; and

Edgar Filing: CELL THERAPEUTICS INC - Form 424B5

general market conditions.

In the past, following periods of volatility in the market price of a company's securities, securities class action litigation has often been instituted. For example, in the case of our company, we and certain of our officers and directors are named as defendants in purported securities class action and shareholder derivative lawsuits brought on behalf of a putative class of purchasers of our securities from March 25, 2008 through March 22, 2010. These lawsuits seek unspecified damages and, as with any litigation proceeding, we cannot predict with certainty the eventual outcome of pending litigation. Furthermore, we may have to incur substantial expenses in connection with these lawsuits and our management's attention and resources could be diverted from operating our business as we respond to the litigation. We maintain significant insurance to cover these risks for us and our directors and officers, but our insurance is subject to high deductibles to reduce premium expense, and there is no guarantee that the insurance will cover any specific claim that we currently face or may face in the future, or that it will be adequate to cover all potential liabilities and damages.

S-28

Table of Contents

Anti-takeover provisions in our charter documents, in our Shareholder Rights Agreement, or rights plan, and under Washington law could make removal of incumbent management or an acquisition of us, which may be beneficial to our shareholders, more difficult.

Provisions of our articles of incorporation and amended and restated bylaws may have the effect of deterring or delaying attempts by our shareholders to remove or replace management, to commence proxy contests, or to effect changes in control. These provisions include:

a classified board so that only approximately one third of our board of directors is elected each year;

elimination of cumulative voting in the election of directors;

procedures for advance notification of shareholder nominations and proposals;

the ability of our board of directors to amend our amended and restated bylaws without shareholder approval; and

the ability of our board of directors to issue shares of preferred stock without shareholder approval upon the terms and conditions and with the rights, privileges and preferences as our board of directors may determine.

Pursuant to our rights plan, an acquisition of 20% or more of our common stock could result in the exercisability of the preferred stock purchase right accompanying each share of our common stock (except those held by a 20% shareholder, which become null and void), thereby entitling the holder to receive upon exercise, in lieu of a number of units of preferred stock, that number of shares of our common stock having a market value of two times the exercise price of the right. The existence of our rights plan could have the effect of delaying, deferring or preventing a third party from making an acquisition proposal for us and may inhibit a change in control that some, or a majority, of our shareholders might believe to be in their best interest or that could give our shareholders the opportunity to realize a premium over the then-prevailing market prices for their shares.

In addition, as a Washington corporation, we are subject to Washington law which imposes restrictions on some transactions between a corporation and certain significant shareholders. These provisions, alone or together, could have the effect of deterring or delaying changes in incumbent management, proxy contests or changes in control.

Table of Contents

USE OF PROCEEDS

We estimate that the net proceeds of this offering, after deducting placement agent fees and our estimated offering expenses, and excluding the proceeds, if any, from the exercise of the warrants issued in this offering, will be approximately \$27.9 million.

We may use a portion of the net proceeds from this offering to fund possible investments in, or acquisitions of, complementary businesses, technologies or products. We have recently engaged in limited discussions with third parties regarding such investments or acquisitions, but we have no current agreements or commitments with respect to any investment or acquisition. We can provide no assurance that we will enter into any such agreements or commitments or consummate any such investments or acquisitions.

We may also use a portion of the net proceeds from this offering for general corporate purposes, which may include, among other things, paying interest on and/or retiring portions of our outstanding debt, funding research and development, preclinical and clinical trials, the preparation and filing of new drug applications and general working capital. As of May 31, 2011, our outstanding indebtedness that we may retire, in whole or in part, with the net proceeds from this offering includes our approximately \$10.9 million 5.75% Notes, which mature on December 15, 2011.

We cannot estimate precisely the allocation of the net proceeds from this offering among these uses. The amounts and timing of the expenditures may vary significantly, depending on numerous factors, including the progress of our clinical trials and other development efforts, as well as the amount of cash used in our operations. Accordingly, our management will have broad discretion in the application of the net proceeds of this offering. We reserve the right to change the use of proceeds as a result of certain contingencies such as competitive developments and other factors. Pending the uses described above, we may temporarily invest the net proceeds of this offering in short- and medium-term interest-bearing obligations, investment-grade instruments, certificates of deposit or direct or guaranteed obligations of the U.S. government.

Table of Contents**DETERMINATION OF OFFERING PRICE**

Prior to this offering, there was no public market for the Series 13 Preferred Stock or warrants. The terms and conditions of the Series 13 Preferred Stock, including the dividend rate and the conversion price, and the warrants, including the exercise price, were determined by negotiation by us and the placement agent. The principal factors considered in determining these terms and conditions include:

the market price of our common stock;

the information set forth in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein, and otherwise available to the placement agent;

our history and prospects and the history of, and prospects for, the industry in which we compete;

our past and present financial performance and an assessment of our management;

our prospects for future earnings and the present state of our development;

the general condition of the securities markets at the time of this offering;

the recent market prices of, and demand for, publicly traded common stock of generally comparable companies; and

other factors deemed relevant by the placement agent and us.

RATIO OF EARNINGS TO COMBINED FIXED CHARGES AND PREFERRED STOCK DIVIDENDS

The following table sets forth our ratio of earnings to combined fixed charges and preferred stock dividends for each of the periods indicated:

| | Three months ended | | Year ended December 31, | | | |
|--|--------------------|------|-------------------------|------|------|------|
| | March 31, | | | | | |
| | 2011 | 2010 | 2009 | 2008 | 2007 | 2006 |
| Ratio of earnings to combined fixed charges and preferred stock dividends(1) | | | | | | |

- (1) Earnings were not sufficient to cover combined fixed charges and preferred stock dividends. Earnings consist of income (loss) before provision for income taxes plus fixed charges. Fixed charges consist of interest charges and that portion of rental payments under operating leases we believe to be representative of interest. Earnings for the three months ended March 31, 2011, and for the years ended December 31, 2010, 2009, 2008, 2007 and 2006, were insufficient to cover fixed charges, and fixed charges and preferred stock dividends, by \$51.0, \$147.6, \$116.8, \$202.9, \$148.3 and \$135.8 (in millions), respectively. For this reason, no ratios are provided for these periods.

DIVIDEND POLICY

We have never declared or paid any cash dividends on our common stock and do not currently anticipate declaring or paying cash dividends on our common stock in the foreseeable future. We currently intend to retain all of our future earnings, if any, to finance operations. Any future

Edgar Filing: CELL THERAPEUTICS INC - Form 424B5

determination relating to our dividend policy will be made at the discretion of our board of directors and will depend on a number of factors, including future earnings, capital requirements, financial conditions, future prospects, contractual restrictions and other factors that our board of directors may deem relevant.

S-31

Table of Contents

DESCRIPTION OF SERIES 13 PREFERRED STOCK

The material terms and provisions of the Series 13 Preferred Stock being offered pursuant to this prospectus supplement and the accompanying prospectus are summarized below. This summary is subject to, and qualified in its entirety by, the rights, preferences and privileges of the Series 13 Preferred Stock set forth in the articles of amendment to our articles of incorporation to be filed as an exhibit to our Current Report on Form 8-K which we expect to file with the SEC in connection with this offering.

Rank

The Series 13 Preferred Stock will, with respect to dividend rights and rights upon our liquidation, dissolution or winding up, rank senior to our common stock and, so long as at least 20% of the aggregate originally issued shares of the Series 13 Preferred Stock are outstanding, we may not repay, repurchase or offer to repay or repurchase or otherwise acquire any material amount of common stock or other securities junior to the Series 13 Preferred Stock except for repurchases of up to 5,000,000 shares of common stock in any 12-month period from employees, officers, directors, consultants or others who perform services for us and who are subject to an agreement with us providing a right of repurchase of such shares at cost or on the occurrence of certain events, such as termination of employment.

Dividends

Holders of Series 13 Preferred Stock are entitled to receive dividends on shares of the Series 13 Preferred Stock equal (on an as if converted to common stock basis) to and in the same form as dividends actually paid on shares of our common stock or other junior securities. All accrued but unpaid dividends on the Series 13 Preferred Stock shall increase the stated value of the Series 13 Preferred Stock, but when such dividends are actually paid such increase shall be rescinded.

Liquidation Preference

Upon our voluntary or involuntary dissolution, liquidation or winding up, holders of the Series 13 Preferred Stock will be entitled to receive the stated value of such holder's shares of Series 13 Preferred Stock of \$1,000 per share plus any accrued and unpaid dividends and other payments that may be due on the shares before the holders of common stock or any of our other junior securities receive any payments from such liquidation. In the event that the amount available for payment of this liquidation preference is less than the full amount of the stated value of all shares of Series 13 Preferred Stock then outstanding, the assets to be distributed to the holders of the Series 13 Preferred Stock will be ratably distributed among such holders in accordance with the respective amounts that would be payable on such holder's shares if the liquidation preference was paid in full.

Conversion

Optional Conversion

The Series 13 Preferred Stock shall be convertible at the option of the holders thereof at any time after issuance into the number of registered shares of common stock determined by dividing the aggregate stated value of the Series 13 Preferred Stock being converted by the conversion price then in effect. The initial conversion price is \$1.70 and is subject to adjustment as described below. This right to convert is limited by the beneficial ownership limitation described below.

Automatic Conversion

On the first to occur of (i) the one month anniversary of the original issuance date of the Series 13 Preferred Stock, (ii) the date on which 1,000 or less shares of Series 13 Preferred Stock remain outstanding or (iii) the adoption by our board of directors of a resolution that it intends to adopt an amendment to our articles of incorporation without shareholder approval to effect a reverse stock split with respect to our common stock in order to achieve compliance with the listing rules of The NASDAQ Capital Market or for other good faith business reasons, all outstanding shares of Series 13 Preferred Stock shall automatically convert into the number of registered shares of common stock determined by dividing the aggregate stated value of the Series 13 Preferred Stock being converted by the conversion price then in effect. This automatic conversion is limited by the beneficial ownership limitation described below.

Beneficial Ownership Limitation

Edgar Filing: CELL THERAPEUTICS INC - Form 424B5

We may not effect a conversion, and no holder may request conversion, of the Series 13 Preferred Stock to the extent, following such conversion, the holder and its affiliates would beneficially own more than 4.99% of our common stock, provided that a holder may elect to increase the conversion threshold to 9.99% of our common stock by providing us with 61 days prior notice. In addition, in the event of an automatic conversion, the conversion threshold will increase to 19.99% without any further action on the part of a holder. The amount of beneficial ownership of a holder and its affiliates will be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations of that section.

S-32

Table of Contents

Conversion Price Adjustment

Stock Dividends and Stock Splits. If we pay a stock dividend or otherwise make a distribution payable in shares of common stock on shares of common stock or any common stock equivalents, subdivide or combine our outstanding common stock, or reclassify our common stock in such a way that we issue additional shares of our capital stock, the conversion price will be adjusted by multiplying the then-existing conversion price by a fraction, the numerator of which is the number of shares outstanding immediately before the distribution, dividend, adjustment or recapitalization and the denominator of which is the number of shares outstanding immediately after such action.

Rights Offerings. If we issue rights, options or warrants to holders of common stock giving such holders a right to subscribe for or purchase shares of common stock at a price per share lower than the volume weighted average price of the common stock on the record date for such issuance and do not offer the same rights to the holders of the Series 13 Preferred Stock, the conversion price will be adjusted to reflect the rights offering by multiplying such conversion price by a fraction, the numerator of which is the number of shares outstanding before such record date plus the number of shares which the aggregate offering price (assuming full subscription) would purchase at the volume weighted average price of the common stock on such record date and the denominator of which is the number of shares of common stock outstanding on the record date plus the aggregate number of shares offered for subscription or purchase.

Pro Rata Distributions. If we distribute (other than as dividend) evidences of our indebtedness, assets (including cash or cash dividends), warrants or other rights to subscribe for our securities (other than common stock) to the holders of common stock, then the conversion price will be adjusted by multiplying the conversion price in effect immediately prior to the record date for such distribution by a fraction, the numerator of which is the volume weighted average price of the common stock on such record date minus the fair market value at such record date of the distributed evidence of indebtedness, asset, warrant or other right applicable to one share of common stock, such fair market value to be determined by the board in good faith, and the denominator of which is the volume weighted average price of the common stock on such record date.

Fundamental Transaction. If we effect a fundamental transaction (as defined below), then upon any future conversion of the Series 13 Preferred Stock, the holders will have the right to receive, for each share of common stock they would have received upon such conversion, the same kind and amount of securities, cash or property as such holder would have been entitled to receive in the transaction had it been the holder of a share of common stock immediately prior to the transaction. The term fundamental transaction means any of the following:

a merger or consolidation of the Company with or into another entity in which the Company is not the surviving entity;

the sale of all or substantially all of the assets of the Company in one transaction or a series of related transactions (provided, however, that a fundamental transaction shall not include the Company's entering into a license or other agreement that licenses any intellectual property to an unaffiliated and unrelated person so long as the Company and its subsidiaries continue to have bona fide, substantial and continuing business operations and activities after such license or other agreement is entered into);

any tender offer or exchange offer allowing holders of common stock to tender or exchange their shares for cash, property or securities, regardless of who makes such offer; or

any reclassification of common stock or any compulsory share exchange by which common stock is effectively converted into or exchanged for other securities, cash or property.

If the holders of common stock are given a choice as to the securities, cash or property to be received in a fundamental transaction, the holders of Series 13 Preferred Stock will be given the same choice on conversion of such holder's shares.

Voting Rights

The Series 13 Preferred Stock shall have no voting rights, except to the extent expressly provided in our articles of incorporation or as otherwise required by law. However, so long as at least 20% of the aggregate initially issued shares of Series 13 Preferred Stock are outstanding, we cannot take any of the following actions without the affirmative consent of holders of a majority of the outstanding Series 13 Preferred Stock:

amend our articles of incorporation, bylaws or other charter documents in each case so as to materially, specifically and adversely affect the rights of any holder with respect to the Series 13 Preferred Stock;

S-33

Table of Contents

repay, repurchase or offer to repay or repurchase or otherwise acquire any of our common stock, common stock equivalents or securities junior to the Series 13 Preferred Stock, except the repurchase of up to 5,000,000 shares of common stock in any 12-month period from employees, officers, directors, consultants or others performing services for the Company or any of its subsidiaries under agreements approved by a majority of our board of directors or under which we have the option to repurchase such shares at cost or at cost on the occurrence of certain events such as termination of employment;

authorize or create any class of senior preferred stock with respect to dividend rights or liquidation preference; or

enter into any agreement or understanding to take any of the actions listed above.

S-34

Table of Contents

DESCRIPTION OF WARRANTS

The material terms and provisions of the warrants being offered pursuant to this prospectus supplement and the accompanying prospectus are summarized below. This summary is subject to, and qualified in its entirety by, the terms set forth in the Common Stock Purchase Warrant to be filed as an exhibit to our Current Report on Form 8-K, which we expect to file with the SEC in connection with this offering.

General

The warrants are exercisable beginning six months and one day after the date of issuance and will expire five years and one day after the date of issuance. The warrants will be exercisable, at the option of the holder, upon the surrender of the warrants to us and the payment in cash of the exercise price of the shares of common stock being acquired upon exercise of the warrants. However, if at the time of exercise there is no effective registration statement registering the issuance of the shares of common stock issuable upon exercise of the warrants to the holder and all such shares are not then registered for resale by the holder, the holder may exercise the warrants by means of a cashless exercise or net exercise. The warrants will not be listed on any national securities exchange.

The exercise price per share of common stock purchasable upon exercise of the warrants is \$2.15 per share of common stock being purchased. The exercise price is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our common stock. The holders of the warrants are entitled to 20 days' notice before the record date for certain distributions to holders of our common stock. If certain fundamental transactions occur, such as a merger, consolidation, sale of substantially all of our assets, tender offer or exchange offer with respect to our common stock or reclassification of our common stock, the holders of the warrants will be entitled to receive thereafter in lieu of our common stock, the consideration (if different from common stock) that the holders of the warrants would have been entitled to receive upon the occurrence of the fundamental transaction as if the warrant had been exercised immediately before the fundamental transaction. If any holder of common stock is given a choice of consideration to be received in the fundamental transaction, then the holders of the warrants shall be given the same choice upon the exercise of the warrants following the fundamental transaction.

As of June 28, 2011, other warrants to purchase approximately 18.4 million shares of common stock were outstanding.

Beneficial Ownership Limitation

No holder may exercise its warrants to the extent that the exercise would result in the holder and its affiliates beneficially owning 4.99% or more of our common stock, provided that a holder may elect to increase the exercise threshold to 9.99% by providing us with 61 days' prior notice. The amount of beneficial ownership of the holder and its affiliates will be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations of that section.

Table of Contents

DESCRIPTION OF CAPITAL STOCK

This summary does not purport to be complete and is subject to, and qualified in its entirety by, the provisions of our articles of incorporation, our bylaws and all applicable provisions of Washington law.

General

We are authorized to issue 283,333,333 shares of common stock, no par value (as adjusted to reflect the one-for-six reverse stock split effected on May 15, 2011), and 1,666,666 shares of preferred stock, no par value. As of June 28, 2011, there were 175,224,525 shares of common stock outstanding, warrants to purchase approximately 18.4 million shares of common stock outstanding and no shares of preferred stock outstanding.

On April 15, 2007, we effected a one-for-four reverse stock split of our common stock, on August 31, 2008, we effected a one-for-ten reverse stock split of our common stock and, on May 15, 2011, we effected a one-for-six reverse stock split of our common stock.

Common Stock

Each holder of common stock is generally entitled to one vote for each share held on all matters to be voted upon by the shareholders and there are no cumulative voting rights. Subject to preferences that may be applicable to any outstanding preferred stock, holders of common stock are entitled to receive ratably the dividends, if any, that are declared from time to time by the board of directors out of funds legally available for that purpose. In the event of our liquidation, dissolution or winding up, the holders of common stock are entitled to share in our assets remaining after the payment of liabilities and the satisfaction of any liquidation preference granted to the holders of any outstanding shares of preferred stock. Holders of common stock have no preemptive or conversion rights or other subscription rights. There are no redemption or sinking fund provisions applicable to the common stock. All outstanding shares of common stock are fully paid and nonassessable. The rights, preferences and privileges of the holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate in the future.

General Description of Preferred Stock

Our board of directors has the authority, without action by the shareholders, to designate and issue preferred stock in one or more series and to designate the rights, preferences and privileges of each series, which may be greater than the rights of the common stock. It is not possible to state the actual effects of the issuance of any shares of preferred stock upon the rights of holders of the common stock until our board of directors determines the specific rights of the holders of this preferred stock. However, the effects could include, among other things:

restricting dividends on the common stock;

diluting the voting power of the common stock;

impairing the liquidation rights of the common stock; or

delaying or preventing a change in control of our company without further action by the shareholders.

Anti-Takeover Effects of Provisions of Washington Law, Our Charter and Bylaws and Our Rights Plan

Washington law contains certain provisions that may have the effect of delaying, deterring or preventing a change in control of the Company. Chapter 23B.19 of the Washington Business Corporation Act prohibits us, with certain exceptions, from engaging in certain significant business transactions with an acquiring person (defined generally as a person or group of persons who acquire 10% or more of our voting securities) for a period of five years following the acquiring person's share acquisition date. The prohibited transactions include, among others, a merger or consolidation with, disposition of assets to, or issuance or redemption of stock to or from, the acquiring person, or any other receipt by the acquiring person of a disproportionate benefit as a shareholder. Exceptions to this statutory prohibition include approval of the transaction at a shareholders meeting by holders of not less than two-thirds of the outstanding shares entitled to vote on the transaction, not counting shares as to

Edgar Filing: CELL THERAPEUTICS INC - Form 424B5

which the acquiring person has beneficial ownership or voting control, transactions approved by the board of directors prior to the acquiring person first becoming an acquiring person or a merger, share exchange, consolidation, liquidation, distribution or certain other significant business transactions entered into with the acquiring person where certain requirements regarding the fairness of the consideration to be received by the shareholders have been met. We may not exempt ourselves from coverage of this statute. These statutory provisions may have the effect of delaying, deterring or preventing a change in control of the Company.

S-36

Table of Contents

Our board of directors is divided into three approximately equal classes of directors serving staggered three-year terms. In addition, our articles of incorporation provide that directors may be removed from office only at a meeting of the shareholders called expressly for that purpose and only for cause. Our articles of incorporation limit cause to willful misfeasance having a material adverse effect on us or conviction of a felony, provided that any action by a director shall not constitute cause if, in good faith, the director believed the action to be in, or not opposed to, our best interests or if the director is entitled to be indemnified with respect to such action under applicable law, our articles of incorporation or bylaws or a contract with us. Further, our bylaws require a shareholder to provide notice to us of such shareholder's intention to nominate a person or persons for election as directors not later than 90 days prior to the first anniversary of the previous year's annual meeting or, in the case of an election to be held at a special meeting of the shareholders for the election of directors, the close of business on the tenth day following the date on which notice of such meeting is first given to shareholders. A shareholder must also provide us with notice of such shareholder's intent to make any proposal at an annual meeting of shareholders not later than 90 days prior to the first anniversary of the previous year's annual meeting of shareholders. These provisions may have the effect of deterring hostile takeovers or delaying a change in control of our management.

On December 28, 2009, we entered into our rights plan, with Computershare Trust Company, N.A., as rights agent. In connection with our rights plan, one preferred stock purchase right was distributed for each common share held as of the close of business on January 7, 2010. Initially, the rights are not exercisable and are attached to, and trade with, all of the shares of our common stock outstanding as of, and issued subsequent to, the record date. As adjusted in connection with our one-for-six reverse stock split effected on May 15, 2011, each right, if and when it becomes exercisable, will entitle the holder to purchase six ten-thousandths of a share of a new series of junior participating cumulative preferred stock for \$36.00, subject to standard adjustment in the rights plan. Upon the acquisition of 20% or more of our common stock by a person or group, subject to certain exceptions (such acquisition referred to herein as a 20% acquisition), the rights will become exercisable for our preferred stock, except for those rights held by such 20% acquirer, which will become null and void. Upon a 20% acquisition, the holder of an exercisable right will be entitled to receive, upon exercise, in lieu of preferred stock, that number of shares of our common stock, or in certain circumstances, including if there are insufficient shares of our common stock to permit the exercise in full of the rights, preferred stock, other securities, cash, property or a reduction in the exercise price of the rights, or any combination of the foregoing, having a market value of two times the exercise price of the right.

If we are acquired in a merger, consolidation or certain other business combination transactions after a 20% acquisition, each holder of an exercisable right would then have the right to receive, upon exercise, common stock of the acquiring company having a market value equal to two times the exercise price of the right.

Our board of directors may redeem the rights for \$0.0006 per right or amend the rights plan at any time prior to a 20% acquisition or the expiration of the rights plan. The rights plan will expire on January 7, 2013, unless previously redeemed or exchanged by the Company.

Transfer Agent and Registrar

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

Table of Contents**PLAN OF DISTRIBUTION**

We are offering through Rodman & Renshaw, LLC, who acted as our sole placement agent in connection with this offering, or the placement agent, 30,000 shares of Series 13 Preferred Stock and warrants to purchase up to 8,820,000 shares of common stock (and the approximately 26,467,059 shares of common stock issuable from time to time upon conversion of the Series 13 Preferred Stock and exercise of the warrants). The purchase price for each share of Series 13 Preferred Stock and a warrant to purchase 294 shares of common stock is \$1,000. In connection with this offering, we will pay fees to the placement agent. The placement agent will be working solely on a reasonable best efforts basis and, other than the purchase of 3,000 shares of the Series 13 Preferred Stock and warrants for its own account, and for the account of others, on the same terms and conditions as all other Initial Purchasers in this offering, is not purchasing or selling any securities offered by this prospectus supplement or the accompanying prospectus, nor is it required to arrange for the purchase and sale of any specific number or dollar amount of securities. Therefore, we may not sell the entire amount of Series 13 Preferred Stock and warrants offered pursuant to this prospectus supplement.

We currently anticipate that closing of the sale of Series 13 Preferred Stock and warrants will occur on July 5, 2011.

On June 29, 2011, we entered into a letter agreement with the placement agent to serve as exclusive placement agent for purchasers of our securities for a period of 10 days. Pursuant to the letter agreement, we will pay the placement agent at closing a cash fee equal to 5% of the aggregate proceeds raised in this offering, plus warrants to purchase shares of common stock in an amount equal to 2% of the aggregate number of shares of common stock issuable upon conversion of the Series 13 Preferred Stock with an exercise price of \$2.45 per share. The following table shows the per share of Series 13 Preferred Stock and warrant total fees we will pay to the placement agent assuming all of the Series 13 Preferred Stock and warrants offered by this prospectus supplement are issued and sold by us.

| | Per share of | |
|--|----------------------------------|--------------|
| | Series 13 Preferred Stock | |
| Placement Agent Fees | and warrants | Total |
| Offering price of the Series 13 Preferred Stock and warrants | \$ 50 | \$ 1,500,000 |

Because there is no minimum offering amount required as a condition to closing, the actual total may be less than the total set forth above.

We have also agreed to pay or reimburse the placement agent for expenses incurred in connection with the offering, up to the lesser of \$25,000 or 1.6% of the aggregate gross proceeds received by us in this offering. The estimated offering expenses payable by us, excluding the placement agency fee, are \$570,000, which include legal, accounting and printing costs, and various other fees associated with registering and listing the shares of common stock issuable from time to time upon conversion of the Series 13 Preferred Stock or exercise of the warrants. The estimated offering expenses will also include a cash fee of 1% of the aggregate proceeds raised in this offering, plus warrants to purchase shares of common stock in an amount equal to 1% of the aggregate number of shares of common stock issuable upon conversion of the Series 13 Preferred Stock with an exercise price of \$2.45 per share, payable at closing to Trout Capital LLC for financial advisory services.

We have agreed to indemnify the placement agent against certain liabilities, including liabilities under the Securities Act. We may also be required to contribute to payments the placement agent may be required to make in respect of such liabilities.

We have also entered into a purchase agreement with the placement agent and the other Initial Purchasers with respect to the Series 13 Preferred Stock and warrants offered hereby. The securities purchased by Rodman & Renshaw, LLC may be offered and sold by Rodman & Renshaw, LLC from time to time as market conditions permit, or otherwise, at prices and terms then prevailing or at prices related to the then-current market price, or in negotiated transactions. These securities may be sold pursuant to this prospectus supplement and the accompanying prospectus by one or more of the following methods, without limitation:

a block trade;

ordinary brokerage transactions and transactions in which Rodman & Renshaw, LLC solicits purchasers;

agreements with third parties to purchase securities entered into on the date of this offering; and

negotiated transactions between Rodman & Renshaw, LLC and subsequent purchasers.

When making sales of its securities, Rodman & Renshaw, LLC may arrange for other brokers or dealers to participate. These brokers or dealers may receive commissions or discounts from Rodman & Renshaw, LLC in amounts to be negotiated. Each such broker-dealer or agent may be deemed an underwriter within the meaning of Section 2(a)(11) of the Securities Act. If the securities are sold through broker-dealers, Rodman & Renshaw, LLC will be responsible for applicable discounts or commissions. Rodman & Renshaw, LLC also will pay any other expenses associated with the sale of our securities it acquires pursuant to the purchase agreement.

S-38

Table of Contents

Rodman & Renshaw, LLC may be deemed to be an underwriter within the meaning of Section 2(a)(11) of the Securities Act, and any commissions received by them and any profit realized on the resale of the securities sold by them while acting as principal might be deemed to be underwriting discounts or commissions under the Securities Act. As underwriters, the placement agent and any broker-dealer or agent acting on its behalf would be required to comply with the requirements of the Securities Act and the Exchange Act, including, without limitation, Rule 415(a)(4) under the Securities Act and Rule 10b-5 and Regulation M under the Exchange Act. These rules and regulations may limit the timing of purchases and sales of securities by the placement agent or any broker-dealer or agent. Under these rules and regulations, the placement agent and any broker-dealer or agent acting on its behalf:

may not engage in any stabilization activity in connection with our securities;

must furnish each broker which offers securities covered by this prospectus supplement and the accompanying prospectus with the number of copies of this prospectus supplement and the accompanying prospectus that are required by each broker; and

may not bid for or purchase any of our securities or attempt to induce any person to purchase any of our securities, other than as permitted under the Exchange Act, until it has completed its participation in the distribution.

The placement agent has informed us that it does not intend to engage in overallotment, stabilizing transactions or syndicate covering transactions in connection with this offering.

A prospectus supplement and the accompanying prospectus in electronic format may be made available on the websites maintained by the placement agent, and the placement agent may distribute the prospectus supplement and the accompanying prospectus electronically.

The letter agreement with the placement agent and the purchase agreement with the Initial Purchasers will be included as exhibits to a Current Report on Form 8-K that will be filed with the SEC in connection with this offering.

We are subject to a lock-up agreement for a period of 30 days following the date of this prospectus supplement. Pursuant to the lock-up agreement, we have agreed that neither we nor any subsidiary will, without the prior consent of the Initial Purchasers, (i) directly or indirectly, issue, offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase or otherwise transfer or dispose of any shares of common stock or any securities convertible into or exercisable or exchangeable for common stock or file any registration statement under the Securities Act (other than a Registration Statement on Form S-8) with respect to any of the foregoing, or (ii) enter into any swap or any other agreement or any transaction that transfers, in whole or in part, directly or indirectly, the economic consequence of ownership of our common stock, whether any such swap or transaction described in clause (i) or (ii) above is to be settled by delivery of common stock or such other securities, in cash or otherwise; provided, however, that nothing in the foregoing clauses (i) and (ii) shall be construed as limiting the Company's ability to negotiate and/or otherwise prepare to consummate a transaction following the expiration of the restricted period so long as such transaction is not publicly announced prior to the expiration of the restricted period. The lock-up agreement does not apply to (a) the Series 13 Preferred Stock and warrants to be issued and sold hereunder or issuable upon conversion or exercise thereof, (b) issuances of shares of common stock upon the exercise of warrants issued to the placement agent or Trout Capital LLC, if any, (c) issuances of shares of common stock issuable upon conversion or exchange of currently outstanding convertible notes, (d) issuances of shares of common stock upon the exercise of currently outstanding warrants or amendments to the warrant agreements related thereto, (e) granting options or other securities under our incentive compensation and equity incentive plans existing on the date hereof or issuances of shares of common stock issuable in connection with awards thereunder as of the date hereof, (f) issuances of shares of common stock issuable pursuant to agreements in effect as of the date hereof or amendments related thereto, (g) issuances of shares of common stock in connection with strategic acquisitions or (h) issuances of shares of common stock subject to shareholder approval, provided, however, that in the case of clauses (c) and (d) above, no shares of common stock shall be issued as a result of an amendment to such securities after the date hereof and prior to the expiration of the 30 day lock-up period.

Table of Contents

CERTAIN U.S. FEDERAL INCOME TAX CONSIDERATIONS

All purchasers of Series 13 Preferred Stock and warrants in this offering are advised to consult their own tax advisors regarding the federal, state, local and foreign tax consequences of the purchase, ownership, conversion or exercise, as the case may be, and disposition of the Series 13 Preferred Stock and warrants and the ownership and disposition of shares of common stock issuable upon conversion of the Series 13 Preferred Stock and exercise of warrants in their particular situations.

LEGAL MATTERS

Certain legal matters in connection with the securities offered hereby will be passed upon for us by O Melveny & Myers LLP of San Francisco, California. Certain legal matters relating to Washington law will be passed upon for us by Karr Tuttle Campbell of Seattle, Washington. Ellenoff Grossman & Schole LLP of New York, New York is acting as counsel for the placement agent.

S-40

Table of Contents

PROSPECTUS

Making cancer more treatable

\$150,000,000

Common Stock

Preferred Stock

Debt Securities

Warrants

Rights

Units

From time to time, we may offer and sell in one or more offerings:

shares of our common stock;

shares of our preferred stock;

debt securities;

warrants to purchase common stock, preferred stock and/or debt securities;

rights to purchase common stock, preferred stock and/or debt securities; and

units consisting of two or more of these classes or series of securities.

We may offer these securities in amounts, at prices and on terms determined at the time of each offering thereof. Each time we offer securities using this prospectus, we will provide specific terms of the securities and the offering in one or more supplements to this prospectus. The prospectus supplements may also add to, update or change the information in this prospectus and will also describe the specific manner in which we will offer the securities. The securities may be offered and sold by us to or through one or more underwriters, broker-dealers or agents, or directly to purchasers on a continuous or delayed basis. See Plan of Distribution.

This prospectus may not be used by us to sell securities unless accompanied by a prospectus supplement. You should carefully read this prospectus and any accompanying prospectus supplement, including the information incorporated by reference, prior to investing in any of our

securities.

Our common stock is quoted on The NASDAQ Capital Market and on the MTA stock market in Italy under the symbol CTIC. On February 14, 2011, the last reported sale price of our common stock on The NASDAQ Capital Market was \$0.34. We do not expect our preferred stock, debt securities, warrants, rights or units to be listed on any securities exchange or over-the-counter market unless otherwise described in the applicable prospectus supplement.

Investing in our securities involves a high degree of risk. See the Risk Factors section contained in this prospectus and in the documents we incorporate by reference in this prospectus to read about factors you should consider before investing in our securities.

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

The date of this prospectus is February 16, 2011

Table of Contents

TABLE OF CONTENTS

| | Page |
|---|-------------|
| <u>ABOUT THIS PROSPECTUS</u> | 1 |
| <u>WHERE YOU CAN FIND MORE INFORMATION</u> | 1 |
| <u>INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE</u> | 2 |
| <u>SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS</u> | 3 |
| <u>SUMMARY</u> | 4 |
| <u>RISK FACTORS</u> | 8 |
| <u>RATIO OF EARNINGS TO FIXED CHARGES AND OF EARNINGS TO COMBINED FIXED CHARGES AND PREFERRED STOCK DIVIDENDS</u> | 9 |
| <u>USE OF PROCEEDS</u> | 9 |
| <u>DIVIDEND POLICY</u> | 9 |
| <u>DESCRIPTION OF CAPITAL STOCK</u> | 10 |
| <u>DESCRIPTION OF DEBT SECURITIES</u> | 13 |
| <u>DESCRIPTION OF WARRANTS</u> | 20 |
| <u>DESCRIPTION OF RIGHTS</u> | 24 |
| <u>DESCRIPTION OF UNITS</u> | 24 |
| <u>LEGAL OWNERSHIP OF SECURITIES</u> | 25 |
| <u>PLAN OF DISTRIBUTION</u> | 29 |
| <u>LEGAL MATTERS</u> | 33 |
| <u>EXPERTS</u> | 33 |

Table of Contents

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or the SEC, utilizing a shelf registration process. Under the shelf registration process, we may, from time to time, sell common stock, preferred stock, debt securities, warrants, rights, units, or any combination of these securities, in one or more offerings. This prospectus provides you with a general description of the securities we may offer. Each time we sell any securities under this prospectus, we will provide a prospectus supplement that will contain more specific information about the terms of that offering, including the specific amounts, prices and terms of the securities offered. Any prospectus supplement may also add to, update or change information contained in this prospectus.

You should read this prospectus, any prospectus supplement, any documents that we incorporate by reference in this prospectus and in any prospectus supplement, and the additional information described below under **Where You Can Find More Information** before making an investment decision. You should rely only on the information contained or incorporated by reference in this prospectus and any prospectus supplement. We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

You should not assume that the information in this prospectus, any prospectus supplement or any documents we incorporate by reference herein or therein is accurate as of any date other than the date on the front of those documents only. Our business, financial condition, results of operations and prospects may have changed since those dates.

In this prospectus, the terms **CTI**, **Company**, **registrant**, **we**, **us**, **our** and similar terms refer to Cell Therapeutics, Inc., a Washington corporation and its subsidiaries, unless the context otherwise requires.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the information requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act. In accordance with the Exchange Act, we file reports, proxy statements and other information with the SEC. Such reports, proxy statements and other information filed by us are available to the public free of charge at www.sec.gov. Copies of certain information filed by us with the SEC are also available on our website at www.celltherapeutics.com. You may also read and copy any document we file at the public reference facilities 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 facilities by calling the SEC at 1-800-SEC-0330.

Because our common stock is listed on The NASDAQ Capital Market, you may also inspect such reports, proxy statements and other information concerning us at the offices of The NASDAQ Stock Market, 1735 K Street, N.W., Washington, D.C. 20006.

This prospectus is part of a registration statement that we filed with the SEC. This prospectus omits some information contained in the registration statement in accordance with SEC rules and regulations. You should review the information and exhibits in the registration statement for further information about us and the securities we are offering. Statements in this prospectus concerning any document we filed as an exhibit to the registration statement or that we otherwise filed with the SEC are not intended to be comprehensive and are qualified by reference to these filings. You should review the complete document to evaluate these statements.

Table of Contents

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

SEC rules allow us to incorporate by reference in this prospectus much of the information we file with the SEC, which means that we can disclose important information to you by referring you to those publicly available documents. The information that we incorporate by reference in this prospectus is considered to be part of this prospectus. This prospectus incorporates by reference the documents listed below and any future filings we make with the SEC under Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act (in each case, other than those documents or the portions of those documents not deemed to be filed) until the offering of the securities under the registration statement of which this prospectus forms a part is terminated or completed:

our Annual Report on Form 10-K for the fiscal year ended December 31, 2010;

our Current Report on Form 8-K filed with the SEC on January 18, 2011 (excluding Item 7.01 and Exhibit 99.1), as amended by our Current Report on Form 8-K/A filed with the SEC on January 28, 2011; and

the description of our capital stock contained in our Registration Statement on Form 10 filed with the SEC on June 27, 1996, including any amendment or reports filed for the purpose of updating that description.

Because we are incorporating by reference future filings with the SEC, this prospectus is continually updated and those future filings may modify or supersede some of the information included or incorporated by reference in this prospectus. This means that you must look at all of the SEC filings that we incorporate by reference to determine if any of the statements in this prospectus or in any document previously incorporated by reference have been modified or superseded.

We will provide without charge to each person, including any beneficial owners, to whom this prospectus is delivered, upon his or her written or oral request, a copy of any or all documents referred to above which have been or may be incorporated by reference in this prospectus but not delivered with this prospectus, excluding exhibits to those documents unless they are specifically incorporated by reference into those documents. You may request a copy of these documents by writing or telephoning us at the following address:

Cell Therapeutics, Inc.

501 Elliott Avenue West, Suite 400

Seattle, Washington 98119

(206) 282-7100

Attention: Investor Relations

Table of Contents

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, any prospectus supplement and any documents we incorporate by reference herein or therein may contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Exchange Act. All statements other than statements of historical fact are forward-looking statements for purposes of these provisions, including, without limitation:

any projections of cash resources, revenues, operating expenses or other financial terms;

any statements of the plans and objectives of management for future operations or programs;

and statements concerning proposed new products or services;

any statements regarding future operations, plans, regulatory filings or approvals;

any statements on plans regarding proposed or potential clinical trials or new drug filing strategies or timelines;

any statements regarding compliance with the listing standards of The NASDAQ Stock Market, or NASDAQ;

any statements regarding pending or future mergers or acquisitions; and

any statements regarding future economic conditions or performance, and any statement of assumptions underlying any of the foregoing.

In some cases, forward-looking statements can be identified by terms such as anticipates, believes, continue, could, estimates, expects, plans, potential, predicts, should or will or the negative thereof or other comparable terms. Such statements are based on management's current expectations and are subject to risks and uncertainties which may cause actual results to differ materially from those set forth in the forward-looking statements. There can be no assurance that such expectations or any of the forward-looking statements will prove to be correct, and actual results could differ materially from those projected or assumed in the forward-looking statements. Our future financial condition and results of operations, as well as any forward-looking statements, are subject to inherent risks and uncertainties, including, without limitation, the risk factors described in the section of this prospectus entitled Risk Factors and in the documents incorporated herein by reference. All forward-looking statements and reasons why results may differ included in this prospectus are made as of the date hereof, and we assume no obligation to update any such forward-looking statement or reason why actual results might differ, except to the extent required by law.

Table of Contents

SUMMARY

This summary highlights information contained elsewhere, or incorporated by reference, in this prospectus. The following summary does not contain all of the information that you should consider before investing in our securities. To understand this offering fully, you should read this entire prospectus carefully, including the financial statements and the documents incorporated by reference.

Our Company

We develop, acquire and commercialize novel treatments for cancer. Our goal is to build a leading biopharmaceutical company with a diversified portfolio of proprietary oncology drugs. Our research, development, acquisition and in-licensing activities concentrate on identifying and developing new, less toxic and more effective ways to treat cancer. Our operations are primarily conducted in the United States. We are currently focusing our efforts on Pixuvri (pixantrone dimaleate), OPAXIO, brostallicin and novel bisplatinum analogues.

Corporate Information

We were incorporated in the State of Washington in 1991. Our shares of common stock trade on The NASDAQ Capital Market and the Mercato Telematico Azionario stock market in Italy, or the MTA, under the symbol CTIC. Our principal executive offices are located at 501 Elliott Avenue West, Suite 400, Seattle, Washington 98119, and our phone number is (206) 282-7100. Our website is located at www.celltherapeutics.com; however, the information in, or that can be accessed through, our website is not part of this prospectus.

Table of Contents

The Securities We May Offer

We may offer shares of our common stock, shares of our preferred stock, debt securities, warrants to purchase such securities, rights to purchase such securities and units with a total value of up to \$150,000,000 from time to time pursuant to this prospectus at prices and on terms to be determined by market conditions at the time of any offering. This prospectus provides you with a general description of the securities we may offer. Each time we offer a type or series of securities, we will provide a prospectus supplement that will describe the specific amounts, prices and other important terms of the securities, including, to the extent applicable:

designation or classification;

aggregate principal amount or aggregate offering price;

maturity;

original issue discount, if any;

rates and times of payment of interest, dividends or other payments, if any;

redemption, conversion, exchange, settlement or sinking fund terms, if any;

conversion, exchange or settlement prices or rates, if any, and, if applicable, any provisions for changes to or adjustments in the conversion, exchange or settlement prices or rates and in the securities or other property receivable upon conversion, exchange or settlement;

ranking;

restrictive covenants, if any;

voting or other rights, if any; and

important federal income tax considerations.

The prospectus supplement also may add to, update or change information contained in this prospectus or in documents we have incorporated by reference in this prospectus.

This prospectus may not be used to consummate sales of offered securities unless accompanied by a prospectus supplement.

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

the names of those underwriters or agents;

applicable fees, discounts and commissions to be paid to them;

details regarding over-allotment options, if any; and

the net proceeds to us.

Table of Contents

Common Stock. We may issue shares of our common stock from time to time. Each holder of common stock is entitled to one vote for each share held on all other matters to be voted upon by the shareholders and there are no cumulative voting rights. Subject to preferences that may be applicable to any outstanding preferred stock, holders of common stock are entitled to receive ratably the dividends, if any, that are declared from time to time by the board of directors out of funds legally available for that purpose. In the event of a liquidation, dissolution or winding up of the Company, the holders of common stock are entitled to share in our assets remaining after the payment of liabilities and the satisfaction of any liquidation preference granted to the holders of any outstanding shares of preferred stock. Holders of common stock have no preemptive or conversion rights or other subscription rights. There are no redemption or sinking fund provisions applicable to the common stock. The rights, preferences and privileges of the holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate in the future.

Preferred Stock. We may issue shares of our preferred stock from time to time. The board of directors has the authority, without action by the shareholders, to designate and issue up to 10,000,000 shares of preferred stock in one or more series and to designate the rights, preferences and privileges of each series, which may be greater than the rights of the common stock.

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

Debt Securities. We may issue debt securities from time to time, in one or more series, as either senior or subordinated debt or as senior or subordinated convertible debt. The senior debt securities will rank equally with any other unsubordinated debt that we may have and may be secured or unsecured. The subordinated debt securities will be subordinate and junior in right of payment, to the extent and in the manner described in the instrument governing the debt, to all or some portion of our indebtedness. Any convertible debt securities that we issue will be convertible into or exchangeable for our common stock or other securities of ours. Conversion may be mandatory or at your option and would be at prescribed conversion rates.

The debt securities will be issued under one or more documents called indentures, which are contracts between us and a trustee for the holders of the debt securities. In this prospectus, we have summarized certain general features of the debt securities. We urge you, however, to read the applicable prospectus supplements related to the series of debt securities being offered, as well as the complete indentures that contain the terms of the debt securities. Forms of indentures have been filed as exhibits to the registration statement of which this prospectus forms a part, and supplemental indentures and forms of debt securities containing the terms of debt securities being offered will be incorporated by reference into the registration statement of which this prospectus forms a part from reports we file with the SEC.

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

The warrants will be evidenced by a warrant certificate issued under one or more warrant agreements, which are contracts between us and an agent for the holders of the warrants. In this prospectus, we have summarized certain general features of the warrants. We urge you, however, to read the applicable prospectus supplements related to the series of warrants being offered, as well as the complete warrant agreements and warrant certificates that contain the terms of the warrants. Forms

Table of Contents

of warrant agreements and warrant certificates relating to warrants for the purchase of common stock, preferred stock and debt securities have been filed as exhibits to the registration statement of which this prospectus forms a part, and complete warrant agreements and warrant certificates containing the terms of warrants being offered will be incorporated by reference into the registration statement of which this prospectus forms a part from reports we file with the SEC.

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

The rights will be evidenced by a rights certificate issued under one or more rights agreements. In this prospectus, we have summarized certain general features of the rights. We urge you, however, to read the applicable prospectus supplements related to the series of rights being offered, as well as the complete rights agreements and rights certificates that contain the terms of the rights. Complete rights agreements and rights certificates containing the terms of rights being offered will be incorporated by reference into the registration statement of which this prospectus forms a part from reports we file with the SEC

Units. As specified in the applicable prospectus supplements, we may issue units consisting of one or more shares of common stock, shares of preferred stock, debt securities, warrants, rights or any combination of such securities.

Table of Contents

RISK FACTORS

You should carefully consider the risks under the heading "Risk Factors" beginning on page 17 of our Annual Report on Form 10-K for the fiscal year ended December 31, 2010, filed with the SEC on February 16, 2011, which information is incorporated by reference in this prospectus, and the additional risks and other information in this prospectus, any prospectus supplement and the documents incorporated by reference herein and therein before deciding to invest in our securities. If any of the identified risks actually occur, they could materially adversely affect our business, financial condition, operating results or prospects and the trading price of our securities. Additional risks and uncertainties that we do not presently know or that we currently deem immaterial may also impair our business, financial condition, operating results and prospects and the trading price of our securities.

Table of Contents

RATIO OF EARNINGS TO FIXED CHARGES AND OF EARNINGS TO COMBINED FIXED CHARGES AND PREFERRED STOCK DIVIDENDS

The following table sets forth our ratio of earnings to fixed charges and of earnings to combined fixed charges and preferred stock dividends for each of the periods indicated:

| | Year ended December 31, | | | | |
|---|--------------------------------|-------------|-------------|-------------|-------------|
| | 2010 | 2009 | 2008 | 2007 | 2006 |
| Ratio of earnings to fixed charges (1) | | | | | |
| Ratio of earnings to combined fixed charges and preferred stock dividends (1) | | | | | |

- (1) Earnings were not sufficient to cover fixed charges or combined fixed charges and preferred stock dividends for each of the periods indicated. Earnings consist of income (loss) before provision for income taxes plus fixed charges. Fixed charges consist of interest charges and that portion of rental payments under operating leases we believe to be representative of interest. Earnings for the years ended December 31, 2010, 2009, 2008, 2007 and 2006 were insufficient to cover fixed charges, and fixed charges and preferred stock dividends, by \$147.6, \$116.8, \$202.9, \$148.3 and \$135.8 (in millions), respectively. For this reason, no ratios are provided for these periods.

USE OF PROCEEDS

We intend to use the net proceeds from the sale of any of our securities for general corporate purposes, unless we state otherwise in a prospectus supplement. We may temporarily invest funds that we do not immediately use in short- and medium-term marketable securities.

DIVIDEND POLICY

We have never declared or paid any cash dividends on our common stock and do not currently anticipate declaring or paying cash dividends on our common stock in the foreseeable future. We currently intend to retain all of our future earnings, if any, to finance operations. Any future determination relating to our dividend policy will be made at the discretion of our board of directors and will depend on a number of factors, including future earnings, capital requirements, financial conditions, contractual restrictions and other factors that our board of directors may deem relevant.

Our outstanding shares of Series 8 Preferred Stock are entitled to annual dividends at a rate of 10% per annum from the date of issuance, payable in the form of additional shares of Series 8 Preferred Stock. See [Description of Capital Stock](#) [General Description of Preferred Stock](#) [Series 8 Preferred Stock](#).

Table of Contents

DESCRIPTION OF CAPITAL STOCK

This summary does not purport to be complete and is subject to, and qualified in its entirety by, the provisions of our amended and restated articles of incorporation, as amended, our amended and restated bylaws and all applicable provisions of Washington law.

General

We are authorized to issue 1,200,000,000 shares of common stock, no par value, and 10,000,000 shares of preferred stock, no par value. As of February 14, 2011, there were 900,799,566 shares of common stock outstanding, warrants to purchase approximately 91,183,529 shares of common stock outstanding and 25,000 shares of our Series 8 Preferred Stock outstanding.

On April 15, 2007, we effected a 1-for-4 reverse stock split of our common stock and on August 31, 2008, we effected a 1-for-10 reverse stock split of our common stock.

Common Stock

Each holder of common stock is entitled to one vote for each share held on all matters to be voted upon by the shareholders and there are no cumulative voting rights. Subject to preferences that may be applicable to any outstanding preferred stock, holders of common stock are entitled to receive ratably the dividends, if any, that are declared from time to time by the board of directors out of funds legally available for that purpose. In the event of our liquidation, dissolution or winding up, the holders of common stock are entitled to share in our assets remaining after the payment of liabilities and the satisfaction of any liquidation preference granted to the holders of any outstanding shares of preferred stock. Holders of common stock have no preemptive or conversion rights or other subscription rights. There are no redemption or sinking fund provisions applicable to the common stock. All outstanding shares of common stock are fully paid and nonassessable. The rights, preferences and privileges of the holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate in the future.

General Description of Preferred Stock

Our board of directors has the authority, without action by the shareholders, to designate and issue preferred stock in one or more series and to designate the rights, preferences and privileges of each series, which may be greater than the rights of the common stock. It is not possible to state the actual effects of the issuance of any shares of preferred stock upon the rights of holders of the common stock until our board of directors determines the specific rights of the holders of this preferred stock. However, the effects might include, among other things:

restricting dividends on the common stock;

diluting the voting power of the common stock;

impairing the liquidation rights of the common stock; or

delaying or preventing a change in control of our company without further action by the shareholders.

Series 8 Preferred Stock

As of February 14, 2011, there were 25,000 shares of our Series 8 Preferred Stock outstanding. The Series 8 Preferred Stock is entitled to annual dividends at a rate of 10% per annum from the date of issuance,

Table of Contents

payable in the form of additional shares of Series 8 Preferred Stock. Each share of Series 8 Preferred Stock is entitled to a liquidation preference equal to the initial stated value of \$1,000 per share of Series 8 Preferred Stock, plus any accrued and unpaid dividends, before any distribution of assets may be made to holders of capital stock ranking junior to the Series 8 Preferred Stock. The Series 8 Preferred Stock is not convertible into common stock but is redeemable, at our option, at any time after issuance, either in cash or by offset against recourse notes fully secured with marketable securities. The Series 8 Preferred Stock has no voting rights except as otherwise expressly provided in the articles of amendment to our amended and restated articles of incorporation or as otherwise required by law. However, so long as at least 8,000 or more originally issued shares of Series 8 Preferred Stock are outstanding, we cannot amend our amended and restated articles of incorporation, amended and restated bylaws or other charter documents so as to materially, specifically and adversely affect the rights of the Series 8 Preferred Stock or authorize or create any class of senior preferred stock, in each case without the affirmative written consent of holders of a majority of the outstanding shares of Series 8 Preferred Stock.

Anti-Takeover Effects of Provisions of Washington Law, Our Charter and Bylaws and Our Rights Plan

Washington law contains certain provisions that may have the effect of delaying, deterring or preventing a change in control of the Company. Chapter 23B.19 of the Washington Business Corporation Act prohibits us, with certain exceptions, from engaging in certain significant business transactions with an acquiring person (defined as a person or group of persons who acquire 10% or more of our voting securities without the prior approval of our board of directors) for a period of five years following the acquiring person's share acquisition date. The prohibited transactions include, among others, a merger or consolidation with, disposition of assets to, or issuance or redemption of stock to or from, the acquiring person, or otherwise allowing the acquiring person to receive a disproportionate benefit as a shareholder. Exceptions to this statutory prohibition include approval of the transaction at a shareholders meeting by holders of not less than two-thirds of the shares held by each voting group entitled to vote on the transaction, not counting shares as to which the acquiring person has beneficial ownership or voting control, transactions approved by our board of directors prior to the acquiring person first becoming an acquiring person or, with respect to a merger, share exchange, consolidation, liquidation or distribution entered into with the acquiring person, transactions where certain other requirements regarding the fairness of the consideration to be received by the shareholders have been met. We may not exempt ourselves from coverage of this statute. These statutory provisions may have the effect of delaying, deterring or preventing a change in control of the Company.

Our board of directors is divided into three approximately equal classes of directors serving staggered three-year terms. In addition, our amended and restated articles of incorporation provide that directors may be removed from office only at a meeting of the shareholders called expressly for that purpose and only for cause. Our amended and restated articles of incorporation limit cause to willful misfeasance having a material adverse effect on us or conviction of a felony, provided that any action by a director shall not constitute cause if, in good faith, the director believed the action to be in, or not opposed to, our best interests or if the director is entitled to be indemnified with respect to such action under applicable law, our amended and restated articles of incorporation or amended and restated bylaws or a contract with us. Further, our amended and restated bylaws require a shareholder to provide notice to us of such shareholder's intention to nominate a person or persons for election as directors not later than 90 days prior to the first anniversary of the previous year's annual meeting or, in the case of an election to be held at a special meeting of the shareholders for the election of directors, the close of business on the tenth day following the date on which notice of such meeting is first given to shareholders. A shareholder must also provide us with notice of such shareholder's intent to make any proposal at an annual meeting of shareholders not later than 90 days prior to the first anniversary of the previous year's annual meeting of shareholders. These may have the effect of deterring hostile takeovers or delaying change in control of our management.

In connection with our rights plan, one preferred stock purchase right was distributed for each common share held as of the close of business on January 7, 2010. Initially, the rights are not exercisable and are attached to, and trade with, all of the shares of our common stock outstanding as of, and issued subsequent

Table of Contents

to, the record date. Each right, if and when it becomes exercisable, will entitle the holder to purchase one ten-thousandth of a share of a new series of junior participating cumulative preferred stock for \$6.00, subject to standard adjustment in the rights plan. The rights will become exercisable for our preferred stock if a person or group acquires 20% or more of our common stock. Upon acquisition of 20% or more of our common stock, the board of directors could decide that each right (except those held by a 20% shareholder, which become null and void) would become exercisable, entitling the holder to receive upon exercise, in lieu of a number of units of preferred stock, that number of shares of our common stock having a market value of two times the exercise price of the right. In certain circumstances, including if there are insufficient shares of our common stock to permit the exercise in full of the rights, the holder may receive units of preferred stock, other securities, cash or property or any combination of the foregoing.

If we are acquired in a merger or other business combination transaction after any such event, each holder of a right, except those held by a 20% shareholder, which become null and void, would then have the right to receive, upon exercise, common stock of the acquiring company having a market value equal to two times the exercise price of the right.

Our board of directors may redeem the rights for \$0.0001 per right or terminate the rights plan at any time prior to an acquisition by a person or group holding 20% or more of our common stock. The rights plan will expire on January 7, 2013.

Transfer Agent and Registrar

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

Table of Contents

DESCRIPTION OF DEBT SECURITIES

This summary, together with the additional information we include in any applicable prospectus supplements, summarizes the material terms and provisions of the debt securities that we may offer under this prospectus. While the terms we have summarized below will generally apply to any future debt securities we may offer under this prospectus, we will describe the particular terms of any debt securities that we may offer in more detail in the applicable prospectus supplement. The terms of any debt securities we offer under a prospectus supplement may differ from the terms we describe below.

The debt securities may be either secured or unsecured and will either be senior debt securities or subordinated debt securities. We will issue the senior notes under the senior indenture which we will enter into with one or more trustees. We will issue the subordinated notes under the subordinated indenture which we will enter into with one or more trustees. We have filed forms of these documents as exhibits to the registration statement of which this prospectus forms a part. We use the term "indentures" to refer to both the senior indenture and the subordinated indenture.

The indentures will be qualified under the Trust Indenture Act of 1939, as amended, or the Trust Indenture Act. We use the term "debenture trustee" to refer to either the senior trustee or the subordinated trustee, as applicable.

The following summaries of the material provisions of the senior notes, the subordinated notes and the indentures are subject to, and qualified in their entirety by reference to, all of the provisions of the indenture applicable to a particular series of debt securities. We urge you to read the applicable prospectus supplements related to the debt securities that we sell under this prospectus, as well as the complete indentures that contain the terms of the debt securities. Except as we may otherwise indicate, the terms of the senior indenture and the subordinated indenture are identical.

General

We will describe in the applicable prospectus supplement the terms relating to a series of debt securities, including, to the extent applicable:

the title;

the principal amount being offered and, if a series, the total amount authorized and the total amount outstanding;

any limit on the amount that may be issued;

whether or not we will issue the series of debt securities in global form and, if so, the terms and who the depository will be;

the maturity date;

the principal amount due at maturity and whether the debt securities will be issued with any original issue discount;

whether and under what circumstances, if any, we will pay additional amounts on any debt securities held by a person who is not a United States person for U.S. federal income tax purposes, and whether we can redeem the debt securities if we have to pay such additional amounts;

Table of Contents

the annual interest rate, which may be fixed or variable, or the method for determining the rate, the date interest will begin to accrue, the dates interest will be payable and the regular record dates for interest payment dates or the method for determining such dates;

whether or not the debt securities will be secured or unsecured, and the terms of any secured debt;

whether or not the debt securities will be senior or subordinated, and the terms of the subordination of any series of subordinated debt;

the place where payments will be payable;

restrictions on transfer, sale or other assignment, if any;

our right, if any, to defer payment of interest and the maximum length of any such deferral period;

the date, if any, after which, the conditions upon which, and the price at which we may, at our option, redeem the series of debt securities pursuant to any optional or provisional redemption provisions, and any other applicable terms of those redemption provisions;

provisions for a sinking fund, purchase or other analogous fund, if any;

the date, if any, on which, and the price at which we are obligated, pursuant to any mandatory sinking fund or analogous fund provisions or otherwise, to redeem, or at the holder's option to purchase, the series of debt securities;

whether the indenture will restrict our ability and/or the ability of our subsidiaries to:

incur additional indebtedness;

issue additional securities;

create liens;

pay dividends and make distributions in respect of our capital stock and the capital stock of our subsidiaries;

redeem capital stock;

place restrictions on our subsidiaries' ability to pay dividends, make distributions or transfer assets;

make investments or other restricted payments;

sell or otherwise dispose of assets;

enter into sale-leaseback transactions;

engage in transactions with shareholders and affiliates;

issue or sell stock of our subsidiaries; or

effect a consolidation or merger;

Table of Contents

whether the indenture will require us to maintain any interest coverage, fixed charge, cash flow-based, asset-based or other financial ratios;

a discussion of any material or special U.S. federal income tax considerations applicable to the debt securities;

information describing any book-entry features;

the procedures for any auction and remarketing, if any;

the denominations in which we will issue the series of debt securities, if other than denominations of \$1,000 and any integral multiple thereof;

if other than dollars, the currency in which the series of debt securities will be denominated; and

any other specific terms, preferences, rights or limitations of, or restrictions on, the debt securities, including any events of default that are in addition to those described in this prospectus or any covenants provided with respect to the debt securities that are in addition to those described above, and any terms which may be required by us or advisable under applicable laws or regulations or advisable in connection with the marketing of the debt securities.

Conversion or Exchange Rights

We will set forth in the applicable prospectus supplements the terms on which a series of debt securities may be convertible into or exchangeable for common stock or other securities of ours or a third party, including the conversion or exchange rate, as applicable, or how it will be calculated, and the applicable conversion or exchange period. We will include provisions as to whether conversion or exchange is mandatory, at the option of the holder or at our option. We may include provisions pursuant to which the number of our securities or the securities of a third party that the holders of the series of debt securities receive upon conversion or exchange would, under the circumstances described in those provisions, be subject to adjustment, or pursuant to which those holders would, under those circumstances, receive other property upon conversion or exchange, for example in the event of our merger or consolidation with another entity.

Consolidation, Merger or Sale

The indentures do not contain any covenant which restricts our ability to merge or consolidate, or sell, convey, transfer or otherwise dispose of all or substantially all of our assets. However, any successor of ours or acquiror of such assets must assume all of our obligations under the indentures and the debt securities.

If the debt securities are convertible for our other securities, the person with whom we consolidate or merge or to whom we sell all of our property must make provisions for the conversion of the debt securities into securities which the holders of the debt securities would have received if they had converted the debt securities before the consolidation, merger or sale.

Events of Default Under the Indenture

The following are events of default under the indentures with respect to any series of debt securities that we may issue:

if we fail to pay interest when due and payable and our failure continues for 90 days and the time for payment has not been validly extended;

Table of Contents

if we fail to pay the principal, or premium, if any, or to make payment required by any sinking fund or analogous fund when due and payable and the time for payment has not been validly extended;

if we fail to observe or perform any other covenant contained in the debt securities or the indentures, other than a covenant specifically relating to another series of debt securities, and our failure continues for 90 days after we receive notice from the debenture trustee or holders of at least 25% in aggregate principal amount of the outstanding debt securities of the applicable series; and

if specified events of bankruptcy, insolvency or reorganization occur.

If an event of default with respect to debt securities of any series occurs and is continuing, other than an event of default specified in the last bullet point above, the debenture trustee or the holders of at least 25% in aggregate principal amount of the outstanding debt securities of that series may, by notice to us in writing (and to the debenture trustee if notice is given by such holders), declare the unpaid principal of, premium, if any, and accrued interest, if any, due and payable immediately. If an event of default specified in the last bullet point above occurs with respect to us, the principal amount of and accrued interest, if any, of each issue of debt securities then outstanding shall be due and payable without any notice or other action on the part of the debenture trustee or any holder.

The holders of a majority in principal amount of the outstanding debt securities of an affected series may waive any default or event of default with respect to the series and its consequences, except defaults or events of default regarding payment of principal, premium, if any, or interest, unless we have cured the default or event of default in accordance with the indenture.

Subject to the terms of the indentures, if an event of default under an indenture shall occur and be continuing, the debenture trustee will be under no obligation to exercise any of its rights or powers under such indenture at the request or direction of any of the holders of the applicable series of debt securities, unless such holders have offered the debenture trustee reasonable indemnity. The holders of a majority in principal amount of the outstanding debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the debenture trustee, or exercising any trust or power conferred on the debenture trustee, with respect to the debt securities of that series, provided that:

the direction so given by the holder is not in conflict with any law or the applicable indenture; and

subject to its duties under the Trust Indenture Act, the debenture trustee need not take any action that might involve it in personal liability or might be unduly prejudicial to the holders not involved in the proceeding.

A holder of the debt securities of any series will only have the right to institute a proceeding under the indentures or to appoint a receiver or trustee, or to seek other remedies if:

the holder has given written notice to the debenture trustee of a continuing event of default with respect to that series;

the holders of at least 25% in aggregate principal amount of the outstanding debt securities of that series have made written request, and such holders have offered reasonable indemnity to the debenture trustee to institute the proceeding as trustee; and

the debenture trustee does not institute the proceeding, and does not receive from the holders of a majority in aggregate principal amount of the outstanding debt securities of that series other conflicting directions within 90 days after the notice, request and offer.

Table of Contents

These limitations do not apply to a suit instituted by a holder of debt securities if we default in the payment of the principal, premium, if any, or interest on, the debt securities.

We will periodically file statements with the debenture trustee regarding our compliance with specified covenants in the indentures.

Modification of Indenture; Waiver

We and the debenture trustee may modify an indenture without the consent of any holders with respect to specific matters, including, without limitation:

to fix any ambiguity, defect or inconsistency in the indenture or in the debt securities of any series;

to comply with the provisions described above under Consolidation, Merger or Sale ;

to comply with any requirements of the SEC in connection with the qualification of any indenture under the Trust Indenture Act;

to evidence and provide for the acceptance of appointment under the indenture by a successor trustee;

to provide for uncertificated debt securities in addition to or in place of certificated securities and to make all appropriate changes for such purpose;

to add to, delete from, or revise the conditions, limitations and restrictions on the authorized amount, terms or purposes of issuance, authentication and delivery of debt securities of any series;

to provide for the issuance of and establish the form and terms and conditions of the debt securities of any series authorized pursuant to the indentures, to establish the form of any certifications required to be furnished pursuant to the indentures or any series or to add to the rights of the holders of any series of debt securities;

to add to our covenants such new covenants, restrictions, conditions or provisions for the protection of the holders, to make the occurrence, or the occurrence and the continuance, of a default in any such additional covenants, restrictions, conditions or provisions an event of default, or to surrender any of our rights or powers under the indenture; or

to change anything that does not adversely affect the rights of any holder of debt securities of any series in any material respect.

In addition, under the indentures, the rights of holders of debt securities of any series may be changed by us and the debenture trustee with the written consent of the holders of at least a majority in aggregate principal amount of the outstanding debt securities of each series that is affected. However, we and the debenture trustee may only make the following changes with the consent of each holder of any outstanding debt securities affected:

extending the fixed maturity of the debt securities of any series;

reducing the principal amount, reducing the rate of or extending the time of payment of interest, or reducing any premium payable upon the redemption of any debt securities; or

Table of Contents

reducing the percentage of debt securities, the holders of which are required to consent to any supplemental indenture.

Discharge

The indentures provide that we can elect to be discharged from our obligations with respect to one or more series of debt securities, except for certain obligations, including obligations to:

register the transfer or exchange of debt securities of the series;

replace mutilated, destroyed, lost or stolen debt securities of the series;

maintain paying agencies;

compensate and indemnify the debenture trustee; and

appoint any successor trustee.

In order to exercise our rights to be discharged, we must deposit with the debenture trustee money or government obligations, or a combination of both, sufficient to pay all of the principal of, any premium, if any, and interest on, the debt securities of the series on the dates payments are due.

Form, Exchange and Transfer

We will issue the debt securities of each series only in fully registered form without coupons and, unless we otherwise specify in the applicable prospectus supplement, in denominations of \$1,000 and any integral multiple thereof. The indentures provide that we may issue debt securities of a series in temporary or permanent global form and as book-entry securities that will be deposited with, or on behalf of, The Depository Trust Company, New York, New York, known as DTC, or another depository named by us and identified in a prospectus supplement with respect to that series.

At the option of the holder, subject to the terms of the indentures and the limitations applicable to global securities described in the applicable prospectus supplement, the holder of the debt securities of any series can exchange the debt securities for other debt securities of the same series, in any authorized denomination and of like tenor and aggregate principal amount.

Subject to the terms of the indentures and the limitations applicable to global securities set forth in the applicable prospectus supplements, holders of the debt securities may present the debt securities for exchange or for registration of transfer, duly endorsed or with the form of transfer endorsed thereon duly executed if so required by us or the security registrar, at the office of the security registrar or at the office of any transfer agent designated by us for this purpose. Unless otherwise provided in the debt securities that the holder presents for transfer or exchange, we will not impose a service charge for any registration of transfer or exchange, but we may require payment of any taxes or other governmental charges applicable to or associated with such registration of transfer or exchange.

We will name in the applicable prospectus supplements the security registrar, and any transfer agent in addition to the security registrar, that we initially designate for any debt securities. We may at any time designate additional transfer agents or rescind the designation of any transfer agent or approve a change in the office through which any transfer agent acts, except that we will be required to maintain a transfer agent in each place of payment for the debt securities of each series.

If we elect to redeem the debt securities of any series, we will not be required to:

Edgar Filing: CELL THERAPEUTICS INC - Form 424B5

issue, register the transfer of, or exchange any debt securities of any series being redeemed in part during a period beginning at the opening of business 15 days before the day of mailing of a notice of redemption of any debt securities that may be selected for redemption and ending at the close of business on the day of the mailing; or

Table of Contents

register the transfer of or exchange any debt securities so selected for redemption, in whole or in part, except the unredeemed portion of any debt securities we are redeeming in part.

Information Concerning the Debenture Trustee

The debenture trustee, other than during the occurrence and continuance of an event of default under an indenture, undertakes to perform only those duties as are specifically set forth in the applicable indenture. Upon an event of default under an indenture, the debenture trustee must use the same degree of care as a prudent person would exercise or use in the conduct of his or her own affairs. Subject to this provision, the debenture trustee is under no obligation to exercise any of the powers given it by the indentures at the request of any holder of debt securities unless it is offered reasonable security and indemnity against the costs, expenses and liabilities that it might incur.

Payment and Paying Agents

Unless we otherwise indicate in the applicable prospectus supplement, we will make payment of the interest on any debt securities on any interest payment date to the person in whose name the debt securities, or one or more predecessor securities, are registered at the close of business on the regular record date for the interest.

We will pay principal of, and any premium and interest on, the debt securities of a particular series at the office of the paying agents designated by us, except that, unless we otherwise indicate in the applicable prospectus supplement, we may make certain payments by check which we will mail to the holder or by wire transfer to certain holders. Unless we otherwise indicate in a prospectus supplement, we will designate an office or agency of the debenture trustee in the city of New York as our sole paying agent for payments with respect to debt securities of each series. We will name in the applicable prospectus supplement any other paying agents that we initially designate for the debt securities of a particular series. We will maintain a paying agent in each place of payment for the debt securities of a particular series.

All money we pay to a paying agent or the debenture trustee for the payment of the principal of or any premium or interest on any debt securities which remains unclaimed at the end of two years after such principal, premium or interest has become due and payable will be repaid to us, and the holder of the debt security thereafter may look only to us for payment thereof.

Governing Law

The indentures and the debt securities will be governed by and construed in accordance with the laws of the state of New York, except to the extent that the Trust Indenture Act is applicable.

Subordination of Subordinated Debt Securities

The subordinated debt securities will be subordinate and junior in priority of payment to certain of our other indebtedness to the extent described in a prospectus supplement. The indentures do not limit the amount of indebtedness which we may incur, including senior indebtedness or subordinated indebtedness, and do not limit us from issuing any other debt, including secured debt or unsecured debt. Additional or different subordination provisions may be described in a prospectus supplement relating to a particular series of debt securities.

Table of Contents

DESCRIPTION OF WARRANTS

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

We will issue the warrants directly or under a warrant agreement which we will enter into with a warrant agent to be selected by us. We have filed forms of the warrant agreements and the related warrant certificates for each type of warrant we may offer pursuant to this prospectus as exhibits to the registration statement of which this prospectus forms a part. We use the term `warrant agreement` to refer to any of these warrant agreements. We use the term `warrant agent` to refer to the warrant agent under any of these warrant agreements. The warrant agent will act solely as an agent of ours in connection with the warrants and will not act as an agent for the holders or beneficial owners of the warrants.

The following summary of material provisions of the warrants and the warrant agreements are subject to, and qualified in their entirety by reference to, all of the provisions of the warrant agreement applicable to a particular series of warrants. We urge you to read the applicable prospectus supplements related to the warrants that we sell pursuant to this prospectus, as well as the complete warrant agreements that contain the terms of the warrants.

General

We will describe in the applicable prospectus supplements the terms relating to a series of warrants.

If warrants for the purchase of debt securities are offered, the prospectus supplement will describe the following terms, to the extent applicable:

the offering price and the aggregate number of warrants offered;

the currencies in which the warrants are being offered;

the designation, aggregate principal amount, currencies, denominations and terms of the series of debt securities that can be purchased if a holder exercises a warrant;

the designation and terms of any series of debt securities with which the warrants are being offered and the number of warrants offered with each such debt security;

the date on and after which the holder of the warrants can transfer them separately from the related series of debt securities;

the principal amount of the series of debt securities that can be purchased if a holder exercises a warrant and the price at which and currencies in which such principal amount may be purchased upon exercise;

the terms of any rights to redeem or call the warrants;

Table of Contents

the date on which the right to exercise the warrants begins and the date on which such right expires;

U.S. federal income tax consequences of holding or exercising the warrants;

whether the warrants are issued pursuant to a warrant agreement with a warrant agent or issued directly by us; and

any other specific terms, preferences, rights or limitations of, or restrictions on, the warrants.

Warrants for the purchase of debt securities will be in registered form only.

If warrants for the purchase of our common stock or preferred stock are offered, the prospectus supplements will describe the following terms, to the extent applicable:

the offering price and the aggregate number of warrants offered;

the total number of shares that can be purchased if a holder of the warrants exercises them and, in the case of warrants for preferred stock, the designation, total number and terms of the series of preferred stock that can be purchased upon exercise;

the designation and terms of any series of preferred stock with which the warrants are being offered and the number of warrants being offered with each share of common stock or preferred stock;

the date on and after which the holder of the warrants can transfer them separately from the related common stock or series of preferred stock;

the number of shares of common stock or preferred stock that can be purchased if a holder exercises the warrant and the price at which such common stock or preferred stock may be purchased upon exercise, including, if applicable, any provisions for changes to or adjustments in the exercise price and in the securities or other property receivable upon exercise;

the terms of any rights to redeem or call, or accelerate the expiration of, the warrants;

the date on which the right to exercise the warrants begins and the date on which that right expires;

federal income tax consequences of holding or exercising the warrants;

whether the warrants are issued pursuant to a warrant agreement with a warrant agent or issued directly by us; and

any other specific terms, preferences, rights or limitations of, or restrictions on, the warrants.

Warrants for the purchase of common stock or preferred stock will be in registered form only.

Edgar Filing: CELL THERAPEUTICS INC - Form 424B5

A holder of warrant certificates may exchange them for new certificates of different denominations, present them for registration of transfer and exercise them at the corporate trust office of the warrant agent or any other office indicated in the applicable prospectus supplement. Until any warrants to purchase debt securities are exercised, the holder of the warrants will not have any of the rights of holders of the debt securities that can be purchased upon exercise, including any rights to receive payments of principal, premium

Table of Contents

or interest on the underlying debt securities or to enforce covenants in the applicable indenture. Until any warrants to purchase common stock or preferred stock are exercised, holders of the warrants will not have any rights of holders of the underlying common stock or preferred stock, including any rights to receive dividends or to exercise any voting rights, except to the extent set forth under **Warrant Adjustments** below.

Exercise of Warrants

Each holder of a warrant is entitled to purchase the principal amount of debt securities or number of shares of common stock or preferred stock, as the case may be, at the exercise price described in the applicable prospectus supplements. After the close of business on the day when the right to exercise terminates (or a later date if we extend the time for exercise), unexercised warrants will become void.

A holder of warrants may exercise them by following the general procedure outlined below:

delivering to us or to the warrant agent the payment required by the applicable prospectus supplements to purchase the underlying security;

properly completing and signing the reverse side of the warrant certificate representing the warrants; and

delivering the warrant certificate representing the warrants to us or to the warrant agent within five business days of receipt of payment of the exercise price.

If the holder complies with the procedures described above, the warrants will be considered to have been exercised when we receive or the warrant agent receives, as applicable, payment of the exercise price, subject to the transfer books for the securities issuable upon exercise of the warrant not being closed on such date. After the holder has completed those procedures and subject to the foregoing, we will, as soon as practicable, issue and deliver to such holder the debt securities, common stock or preferred stock that such holder purchased upon exercise. If the holder exercises fewer than all of the warrants represented by a warrant certificate, a new warrant certificate will be issued to such holder for the unexercised amount of warrants. Holders of warrants will be required to pay any tax or governmental charge that may be imposed in connection with transferring the underlying securities in connection with the exercise of the warrants.

Amendments and Supplements to the Warrant Agreements

We may amend or supplement a warrant agreement without the consent of the holders of the applicable warrants to cure ambiguities in the warrant agreement, to cure, correct or supplement a defective provision in the warrant agreement, or to provide for other matters under the warrant agreement that we and the warrant agent deem necessary or desirable, so long as, in each case, such amendments or supplements do not materially adversely affect the interests of the holders of the warrants.

Warrant Adjustments

Unless the applicable prospectus supplements state otherwise, the exercise price of, and the number of securities covered by, a common stock warrant or preferred stock warrant will be adjusted proportionately if we subdivide or combine our common stock or preferred stock, as applicable.

In addition, unless the prospectus supplements state otherwise, if we, without payment therefor:

issue capital stock or other securities convertible into or exchangeable for common stock or preferred stock, or any rights to subscribe for, purchase or otherwise acquire any of the foregoing, as a dividend or distribution to holders of our common stock or preferred stock;

Table of Contents

pay any cash to holders of our common stock or preferred stock other than a cash dividend paid out of our current or retained earnings or other than in accordance with the terms of the preferred stock;

issue any evidence of our indebtedness or rights to subscribe for or purchase our indebtedness to holders of our common stock or preferred stock; or

issue common stock or preferred stock or additional stock or other securities or property to holders of our common stock or preferred stock by way of spinoff, split-up, reclassification, combination of shares or similar corporate rearrangement; then the holders of common stock warrants and preferred stock warrants, as applicable, will be entitled to receive upon exercise of the warrants, in addition to the securities otherwise receivable upon exercise of the warrants and without paying any additional consideration, the amount of stock and other securities and property such holders would have been entitled to receive had they held the common stock or preferred stock, as applicable, issuable under the warrants on the dates on which holders of those securities received or became entitled to receive such additional stock and other securities and property.

Except as stated above, the exercise price and number of securities covered by a common stock warrant or preferred stock warrant, and the amounts of other securities or property to be received, if any, upon exercise of those warrants, will not be adjusted or provided for if we issue those securities or any securities convertible into or exchangeable for those securities, or securities carrying the right to purchase those securities or securities convertible into or exchangeable for those securities.

Holders of common stock warrants and preferred stock warrants may have additional rights under the following circumstances:

certain reclassifications, capital reorganizations or changes of the common stock or preferred stock, as applicable;

certain share exchanges, mergers, or similar transactions involving us and which result in changes of the common stock or preferred stock, as applicable; or

certain sales or dispositions to another entity of all or substantially all of our property and assets.

If one of the above transactions occurs and holders of our common stock or preferred stock are entitled to receive stock, securities or other property with respect to or in exchange for their securities, the holders of the common stock warrants and preferred stock warrants then outstanding, as applicable, will be entitled to receive upon exercise of their warrants the kind and amount of shares of stock and other securities or property that they would have received upon the applicable transaction if they had exercised their warrants immediately before the transaction.

Table of Contents

DESCRIPTION OF RIGHTS

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

The applicable prospectus supplements relating to any rights that we offer will include specific terms of any offering of rights for which this prospectus is being delivered, including the following, to the extent applicable:

the price, if any, per right;

the exercise price payable for each share of common stock, share of preferred stock or debt security upon the exercise of the rights;

the number of rights issued or to be issued to each holder;

the number and terms of the shares of common stock, shares of preferred stock or debt securities that may be purchased per each right;

the extent to which the rights are transferable;

any other terms of the rights, including the terms, procedures and limitations relating to the exchange and exercise of the rights;

the respective dates on which the holder's ability to exercise the rights will commence and will expire;

the extent to which the rights may include an over-subscription privilege with respect to unsubscribed securities; and

if applicable, the material terms of any standby underwriting or purchase arrangement entered into by us in connection with the offering of such rights.

The description in the applicable prospectus supplements of any rights that we may offer will not necessarily be complete and will be qualified in its entirety by reference to the applicable rights agreement and/or rights certificate, which will be filed with the SEC in connection therewith.

DESCRIPTION OF UNITS

As specified in the applicable prospectus supplement, we may issue units consisting of one or more shares of common stock, shares of preferred stock, debt securities, warrants, rights or any combination of such securities.

Table of Contents

LEGAL OWNERSHIP OF SECURITIES

We can issue securities in registered form or in the form of one or more global securities. We describe global securities in greater detail below. We refer to those persons who have securities registered in their own names on the books that we or any applicable trustee or depository or warrant agent maintain for this purpose as the holders of those securities. These persons are the legal holders of the securities. We refer to those persons who, indirectly through others, own beneficial interests in securities that are not registered in their own names, as indirect holders of those securities. As we discuss below, indirect holders are not legal holders, and investors in securities issued in book-entry form or in street name will be indirect holders.

Book-Entry Holders

We may issue securities in book-entry form only, as we will specify in the applicable prospectus supplements. This means securities may be represented by one or more global securities registered in the name of a financial institution that holds them as depository on behalf of other financial institutions that participate in the depository's book-entry system. These participating institutions, which are referred to as participants, in turn, hold beneficial interests in the securities on behalf of themselves or their customers.

Only the person in whose name a security is registered is recognized as the holder of that security. Global securities will be registered in the name of the depository. Consequently, for global securities, we will recognize only the depository as the holder of the securities, and we will make all payments on the securities to the depository. The depository passes along the payments it receives to its participants, which in turn pass the payments along to their customers who are the beneficial owners. The depository and its participants do so under agreements they have made with one another or with their customers; they are not obligated to do so under the terms of the securities.

As a result, investors in a global security will not own securities directly. Instead, they will own beneficial interests in a global security, through a bank, broker or other financial institution that participates in the depository's book-entry system or holds an interest through a participant. As long as the securities are issued in global form, investors will be indirect holders, and not holders, of the securities.

Street Name Holders

We may terminate a global security or issue securities that are not issued in global form. In these cases, investors may choose to hold their securities in their own names or in street name. Securities held by an investor in street name would be registered in the name of a bank, broker or other financial institution that the investor chooses, and the investor would hold only a beneficial interest in those securities through an account he or she maintains at that institution.

For securities held in street name, we or any applicable trustee or depository will recognize only the intermediary banks, brokers and other financial institutions in whose names the securities are registered as the holders of those securities, and we or any such trustee or depository will make all payments on those securities to them. These institutions pass along the payments they receive to their customers who are the beneficial owners, but only because they agree to do so in their customer agreements or because they are legally required to do so. Investors who hold securities in street name will be indirect holders, not holders, of those securities.

Table of Contents

Legal Holders

Our obligations, as well as the obligations of any applicable trustee or third party employed by us or a trustee, run only to the legal holders of the securities. We do not have obligations to investors who hold beneficial interests in global securities, in street name or by any other indirect means. This will be the case whether an investor chooses to be an indirect holder of a security or has no choice because we are issuing the securities only in global form.

For example, once we make a payment or give a notice to the holder, we have no further responsibility for the payment or notice even if that holder is required, under agreements with its participants or customers or by law, to pass it along to the indirect holders but does not do so. Similarly, we may want to obtain the approval of the holders to amend an indenture, to relieve us of the consequences of a default or of our obligation to comply with a particular provision of an indenture, or for other purposes. In such an event, we would seek approval only from the holders, and not the indirect holders, of the securities. Whether and how the holders contact the indirect holders is up to the holders.

Special Considerations For Indirect Holders

If you hold securities through a bank, broker or other financial institution, either in book-entry form because the securities are represented by one or more global securities or in street name, you should check with your own institution to find out:

how it handles securities payments and notices;

whether it imposes fees or charges;

how it would handle a request for the holders' consent, if ever required;

whether and how you can instruct it to send you securities registered in your own name so you can be a holder, if that is permitted in the future;

how it would exercise rights under the securities if there were a default or other event triggering the need for holders to act to protect their interests; and

if the securities are global securities, how the depositary's rules and procedures will affect these matters.

Global Securities

A global security is a security which represents one or any other number of individual securities held by a depositary. Generally, all securities represented by the same global securities will have the same terms.

Each security issued in book-entry form will be represented by a global security that we issue to, deposit with and register in the name of a financial institution or its nominee that we select. The financial institution that we select for this purpose is called the depositary. Unless we specify otherwise in the applicable prospectus supplement, The Depository Trust Company, New York, New York, known as DTC, will be the depositary for all global securities issued pursuant to this prospectus.

A global security may not be transferred to or registered in the name of anyone other than the depositary, its nominee or a successor depositary, unless special termination situations arise. We describe those situations below under "Special Situations When a Global Security Will Be Terminated." As a result of these arrangements, the depositary, or its nominee, will be the sole registered owner and holder of all securities represented by a global security, and investors will be permitted to own only beneficial interests in a global

Table of Contents

security. Beneficial interests must be held by means of an account with a broker, bank or other financial institution that in turn has an account with the depository or with another institution that does. Thus, an investor whose security is represented by a global security will not be a holder of the security, but only an indirect holder of a beneficial interest in the global security.

If the prospectus supplements for a particular security indicate that the security will be issued as a global security, then the security will be represented by a global security at all times unless and until the global security is terminated. If termination occurs, we may issue the securities through another book-entry clearing system or decide that the securities may no longer be held through any book-entry clearing system.

Special Considerations for Global Securities

As an indirect holder, an investor's rights relating to a global security will be governed by the account rules of the investor's financial institution and of the depository, as well as general laws relating to securities transfers. We do not recognize an indirect holder as a holder of securities and instead deal only with the depository that holds the global security.

If securities are issued only as a global security, an investor should be aware of the following:

an investor cannot cause the securities to be registered in his or her name, and cannot obtain non-global certificates for his or her interest in the securities, except in the special situations we describe below;

an investor will be an indirect holder and must look to his or her own bank or broker for payments on the securities and protection of his or her legal rights relating to the securities, as we describe above;

an investor may not be able to sell interests in the securities to some insurance companies and to other institutions that are required by law to own their securities in non-book-entry form;

an investor may not be able to pledge his or her interest in the global security in circumstances where certificates representing the securities must be delivered to the lender or other beneficiary of the pledge in order for the pledge to be effective;

the depository's policies, which may change from time to time, will govern payments, transfers, exchanges and other matters relating to an investor's interest in the global security; we and any applicable trustee have no responsibility for any aspect of the depository's actions or for its records of ownership interests in the global security; and we and the trustee also do not supervise the depository in any way;

the depository may, and we understand that DTC will, require that those who purchase and sell interests in the global security within its book-entry system use immediately available funds, and your broker or bank may require you to do so as well; and

financial institutions that participate in the depository's book-entry system, and through which an investor holds its interest in the global security, may also have their own policies affecting payments, notices and other matters relating to the securities; there may be more than one financial intermediary in the chain of ownership for an investor; and we do not monitor and are not responsible for the actions of any of those intermediaries.

Table of Contents

Special Situations When a Global Security Will Be Terminated

In a few special situations described below, a global security will terminate and interests in it will be exchanged for physical certificates representing those interests. After that exchange, the choice of whether to hold securities directly or in street name will be up to the investor. Investors must consult their own banks or brokers to find out how to have their interests in securities transferred to their own name, so that they will be direct holders. We have described the rights of holders and street name investors above.

A global security will terminate when the following special situations occur:

if the depository notifies us that it is unwilling, unable or no longer qualified to continue as depository for that global security and we do not appoint another institution to act as depository within 90 days after we receive notice or become aware of such condition;

if we notify any applicable trustee that we wish to terminate that global security; or

if an event of default has occurred with regard to securities represented by that global security and has not been cured or waived and we have received a request from the depository for the discontinuance of securities in global form.

The applicable prospectus supplements may also list additional situations for terminating a global security that would apply only to the particular series of securities covered by the prospectus supplements. When a global security terminates, the depository, and not we or any applicable trustee, is responsible for deciding the names of the institutions that will be the initial direct holders.

Table of Contents

PLAN OF DISTRIBUTION

We may sell the securities offered pursuant to this prospectus and any accompanying prospectus supplements:

to or through one or more underwriters or dealers;

to investors directly;

through agents; or

through any combination of these methods of sale.

Our securities may be offered and sold:

at a fixed price or prices, which may be changed;

at market prices prevailing at the time of sale;

at prices related to the prevailing market prices; or

at negotiated prices.

Any of the prices at which we sell securities may be at a discount to market prices. Broker-dealers may also receive from us, as applicable, or the purchasers of the securities compensation that is not expected to exceed that customary in the types of transactions involved.

Each prospectus supplement, to the extent applicable, will describe the number and terms of the securities to which such prospectus supplement relates, including:

any over-allotment options under which underwriters, if any, may purchase additional securities;

the name or names of any underwriters or agents with whom we have entered into an arrangement with respect to the sale of such securities;

the public offering or purchase price of such securities;

any underwriting discounts or commissions or agency fees or other items constituting underwriter or agent compensation;

Edgar Filing: CELL THERAPEUTICS INC - Form 424B5

any discounts, commissions or concessions allowed or reallocated or paid to dealers;

any securities exchanges or markets on which the securities may be listed; and

the net proceeds we will receive from such sale.

Underwritten Offerings

If underwriters are used in the sale of any securities, the securities will be acquired by the underwriters for their own account and may be resold from time to time in one or more transactions described above. The securities may be either offered to the public through underwriting syndicates represented by managing underwriters, or directly by underwriters. Underwriters may sell the securities to or through dealers, and such

Table of Contents

dealers may receive compensation in the form of discounts. Generally, the underwriters' obligations to purchase the securities will be subject to conditions precedent and the underwriters will be obligated to purchase all of the securities if they purchase any of the securities. We may use underwriters with whom we have a material relationship. We will describe any such underwriters in the applicable prospectus supplement, naming the underwriter and the nature of any such relationship.

Direct Sales and Sales through Agents

We may sell securities directly to institutional investors or others who may be deemed to be underwriters within the meaning of the Securities Act with respect to any sale of those securities. We also may, from time to time, authorize dealers or agents to offer and sell these securities, upon such terms and conditions as may be set forth in the applicable prospectus supplement, if applicable. In order to comply with the securities laws of certain states, if applicable, the securities offered will be sold in such jurisdictions only through registered or licensed brokers or dealers. In addition, in certain states securities may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with. This prospectus, one or more prospectus supplements, and the registration statement of which this prospectus forms a part may be used in conjunction with one or more other registration statements to the extent permitted by the Act and the rules and regulations promulgated thereunder.

Rights Offerings

We also may sell directly to investors through subscription rights distributed to our shareholders on a pro rata basis. In connection with any distribution of subscription rights to shareholders, if all of the underlying securities are not subscribed for, we may sell the unsubscribed shares of our securities directly to third parties or may engage the services of one or more underwriters, dealers or agents, including standby underwriters, to sell the unsubscribed securities to third parties.

We may also sell securities in one or more of the following transactions:

block transactions (which may involve crosses) in which a broker-dealer may sell all or a portion of the shares as agent but may position and resell all or a portion of the block as principal to facilitate the transaction;

purchases by a broker-dealer as principal and resale by the broker-dealer for its own account;

ordinary brokerage transactions and transactions in which a broker-dealer solicits purchasers;

sales at the market to or through a market maker or into an existing trading market, on an exchange or otherwise, for securities; and

sales in other ways not involving a market maker or established trading markets, including direct sales to purchasers.

We may also enter into derivative transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. In connection with those derivatives, the third parties may sell securities covered by this prospectus and the applicable prospectus supplement, including in short sale transactions. If so, the third party may use securities pledged by us or borrowed from us or others to settle those sales or to close out any related open borrowings of stock, and may use securities received from us in settlement of those derivatives to close out any related open borrowings of stock. The third party in such sale transactions will be an underwriter and will be identified in the applicable prospectus supplement or in a post-effective amendment to the registration statement of which this prospectus forms a part.

Table of Contents

Any dealers or agents that participate in the distribution of securities may be deemed to be underwriters under the Securities Act, and in such event, any discounts or commissions received by them and any profit realized by them on the resale of securities they realize may be deemed to be underwriting discounts and commissions under the Securities Act.

Indemnification

Underwriters, dealers and agents and remarketing firms may be entitled, under agreements entered into with us, to indemnification against and contribution toward certain civil liabilities, including liabilities under the Securities Act, or to contribute with respect to payments that the agents, dealers, underwriters or remarketing firms may be required to make.

Stabilization

In connection with any offering of the securities hereby, certain underwriters and selling group members and their respective affiliates may engage in transactions that stabilize, maintain or otherwise affect the market price of the applicable securities. These transactions may include stabilization transactions pursuant to which these persons may bid for or purchase securities for the purpose of stabilizing their market price.

The underwriters in an offering of securities may also create a short position for their account by selling more securities in connection with the offering than they are committed to purchase from us. In that case, the underwriters could cover all or a portion of the short position by either purchasing securities in the open market following completion of the offering of these securities or by exercising any over-allotment option granted to them by us. In addition, the managing underwriter may impose penalty bids under contractual arrangements with other underwriters, which means that it can reclaim from an underwriter (or any selling group member participating in the offering) for the account of the other underwriters, the selling concession for the securities that are distributed in the offering but subsequently purchased for the account of the underwriters in the open market. Any of the transactions described in this paragraph or comparable transactions that are described in any accompanying prospectus supplement may result in the maintenance of the price of the securities at a level above that which might otherwise prevail in the open market. None of the transactions described in this paragraph or in an accompanying prospectus supplement are required to be taken by an underwriter and, if they are undertaken, may be discontinued at any time.

Under applicable rules and regulations under the Exchange Act, under certain circumstances a person engaged in the distribution of the securities offered under this prospectus and the accompanying prospectus supplement may not simultaneously engage in market making activities with respect to our securities for a specified period prior to the commencement of such distribution.

Passive Market-Making on NASDAQ

Any underwriters who are qualified market makers on The NASDAQ Capital Market may engage in passive market making transactions in our common stock on The NASDAQ Capital Market in accordance with Rule 103 of Regulation M. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market making bid, however, the passive market making bid must then be lowered when certain purchase limits are exceeded.

Remarketing Arrangements

Offered securities may also be offered and sold in connection with a remarketing upon their purchase, in accordance with a redemption or repayment pursuant to their terms, or otherwise, by one or more remarketing firms, acting as principals for their own accounts or as agents for us. We will identify any remarketing firm and describe the terms of its agreements, if any, with us and its compensation in the applicable prospectus supplement.

Table of Contents

Delayed Delivery Contracts

If indicated in the applicable prospectus supplement, we will authorize dealers acting as our agents to solicit offers by institutions to purchase securities covered by this prospectus from us at the public offering price set forth in the relevant prospectus supplement under delayed delivery contracts providing for payment and delivery on the date or dates stated in the relevant prospectus supplement. Each delayed delivery contract will be for an amount not less than, and the aggregate principal amount of securities sold pursuant to delayed delivery contracts shall be not less nor more than, the respective amounts stated in the applicable prospectus supplement. Institutions with whom delayed delivery contracts, when authorized, may be made include commercial and savings banks, insurance companies, pension funds, investment companies, educational and charitable institutions, and other institutions, but will in all cases be subject to our approval. Delayed delivery contracts will not be subject to any conditions except (i) the purchase by an institution of the securities covered by its delayed delivery contracts may not at the time of delivery be prohibited under the laws of any jurisdiction in the United States to which the institution is subject, and (ii) if the securities are being sold to underwriters, we will be required to have sold to such underwriters the total principal amount of the securities less the principal amount thereof covered by delayed delivery contracts. The underwriters and any other agents will not have any responsibility in respect of the validity or performance of delayed delivery contracts.

Other Relationships

Underwriters, dealers, agents and remarketing firms may engage in transactions with, or perform services for, us and our affiliates in the ordinary course of business. Unless we specify otherwise in the related prospectus supplement, each class or series of securities will be a new issue with no established trading market, other than shares of our common stock, which are listed on The NASDAQ Capital Market. It is possible that one or more underwriters may make a market in our securities, but will not be obligated to do so and may discontinue any market making at any time without notice. Therefore, no assurance can be given as to the liquidity of the trading market for our securities.

Table of Contents

LEGAL MATTERS

Certain legal matters in connection with the securities offered hereby will be passed upon for us by O Melveny & Myers LLP, San Francisco, California.

EXPERTS

Stonefield Josephson, Inc., an independent registered public accounting firm, has audited our consolidated financial statements at December 31, 2009, and for each of the years ended December 31, 2009 and 2008, included in our Annual Report on Form 10-K for the year ended December 31, 2010, as set forth in its report, which is incorporated by reference in this prospectus and elsewhere in the registration statement of which this prospectus forms a part. Such consolidated financial statements are incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

Marcum LLP, an independent registered public accounting firm, has audited our consolidated financial statements at December 31, 2010 and for the year ended December 31, 2010 included in our Annual Report on Form 10-K for the year ended December 31, 2010, as set forth in its report, which is incorporated by reference in this prospectus and elsewhere in the registration statement of which this prospectus forms a part. Such consolidated financial statements are incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing.