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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

for the fiscal year ended December 31, 2003

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 Or 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

for the transition period from _____ to _____ .

Commission file number: 0-28386

CELL THERAPEUTICS, INC.

(Exact name of registrant as specified in its charter)

Washington	**91-1533912**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification Number)
501 Elliott Avenue West, Suite 400 Seattle, WA 98119 (Address of principal executive offices)	**98119** (Zip Code)

Registrant's telephone number, including area code: (206) 282-7100

Securities registered pursuant to Section 12(b) of the Act:

None.

Securities registered pursuant to Section 12(g) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock, no par value	**NASDAQ National Market**

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of the Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

Indicate by check mark whether the registrant is an accelerated filer (as defined in Exchange Act Rule 12b-2). Yes ☒ No ☐

The aggregate market value of the voting and non-voting common equity held by nonaffiliates as of December 31, 2003 was approximately $207,823,000, based on the closing price of such shares on the Nasdaq National Market on June 30, 2003. Shares of common stock held by each executive officer and director and by each person known to the Company who beneficially owns more than 5% of the outstanding Common Stock have been excluded in that such persons may under certain circumstances be deemed to be affiliates. This determination of executive officer or affiliate status is not necessarily a conclusive determination for other purposes.

The number of outstanding shares of the registrant's common stock as of March 1, 2004 was 50,306,447.

DOCUMENTS INCORPORATED BY REFERENCE

The information required by Part III of this Report, to the extent not set forth herein, will be incorporated herein by reference from the registrant's definitive proxy statement relating to the annual meeting of shareholders to be held in 2004, which definitive proxy statement or amendment to this annual report shall be filed with the Securities and Exchange Commission within 120 days after the end of the fiscal year ended December 31, 2003 to which this Report relates.

CELL THERAPEUTICS, INC.

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Forward Looking Statements

This Form 10-K contains, in addition to historical information, forward-looking statements. These statements relate to our future plans, objectives, expectations, intentions and financial performance, and assumptions that underlie these statements. When used in this Form 10-K, terms such as "anticipates," "believes," "continue," "could," "estimates," "expects," "intends," "may," "plans," "potential," "predicts," "should," or "will" or the negative of those terms or other comparable terms are intended to identify forward-looking statements. These statements involve known and unknown risks, uncertainties and other factors that may cause industry trends or our actual results, level of activity, performance or achievements to be materially different from any future results, levels of activity, performance or achievements expressed or implied by these statements. These factors include those listed under "Factors Affecting Our Operating Results," "Management's Discussion and Analysis of Financial Condition and Results of Operations," and "Business" and elsewhere in this Form 10-K.

Although we believe that expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements. We will not update any of the forward-looking statements after the date of this Form 10-K to conform these statements to actual results or changes in our expectations. Readers are cautioned not to place undue reliance on these forward-looking statements, which apply only as of the date of this Form 10-K.

PART I

Item 1. Business

Overview

We develop, acquire and commercialize novel treatments for cancer. Our goal is to build a leading, vertically-integrated biopharmaceutical company with a diversified portfolio of proprietary oncology drugs. Our research and in-licensing activities are concentrated on identifying new, less toxic and more effective ways to treat cancer. We market TRISENOX® for the treatment of relapsed or refractory acute promyelocytic leukemia in the U.S. and in the European Union, or EU, and have more than 70 ongoing or planned Cell Therapeutics Inc. ("CTI") clinical development trials or investigator-sponsored research trials related to potential market expansion for this product. We are developing XYOTAX for the treatment of non-small cell lung cancer, or NSCLC, and ovarian cancer. We are completing enrollment in the second and third of three pivotal phase III trials for the treatment of NSCLC. These three trials are designed to enroll more than 1,600 patients. We are developing pixantrone, a novel anthracycline, for the treatment of non-Hodgkin's lymphoma, or NHL, and plan to initiate a pivotal phase III trial for relapsed, aggressive NHL in the first half of 2004. We are also developing CT-2106, which is entering phase II trials for the treatment of colorectal, ovarian and small cell lung cancer.

We were incorporated in Washington in 1991. Our principal executive offices are located at 501 Elliott Avenue West, Seattle, Washington 98119. Our telephone number is (206) 282-7100. Our website can be found at www.cticseattle.com. We make available free of charge on our Internet website our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and other filings pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, and amendments to such filings, as soon as reasonably practicable after each is electronically filed with, or furnished to, the Securities and Exchange Commission, or the SEC.

"CTI," "TRISENOX," and "XYOTAX" (formerly referred to as PG-TXL) are our proprietary marks. All other product names, trademarks and trade names referred to in this Form 10-K are the property of their respective owners.

Our Products

We acquired our lead product called arsenic trioxide, or TRISENOX, in January 2000. We received Food and Drug Administration, or FDA, approval to market TRISENOX in the U.S. in September 2000, and the European Agency for the Evaluation of Medicinal Products, or EMEA, in the EU in March 2002. TRISENOX is

marketed for patients with a type of blood cell cancer called acute promyelocytic leukemia, or APL, who have relapsed or failed standard therapies. In its pivotal trial in patients with relapsed or refractory APL, 70% of the 40 patients experienced complete remission, or CR, following treatment with TRISENOX with 82% achieving a molecular remission. We have received orphan drug designation for TRISENOX from the FDA for APL, multiple myeloma, myelodysplastic syndromes, or MDS, chronic myeloid leukemia, or CML, acute myeloid leukemia, or AML, chronic lymphocytic leukemia or CLL, and hepatocellular carcinoma, or HCC. In addition, TRISENOX is currently listed in the U.S. Pharmacopeia Oncology Drug Information, or USP DI, under Orphan Product Designation and Approvals in multiple myeloma, MDS, CML, AML, CLL and HCC. We have also received designation as an orphan medicinal product by the EMEA under its orphan drug legislation for APL, MDS, and multiple myeloma. More than 70 clinical and investigator-sponsored trials studying the drug alone or in combination with other therapies are planned or ongoing as of February 2004. Preliminary data from ongoing clinical trials have shown encouraging responses in patients with multiple myeloma, MDS, CML, prostate cancer, and neuroblastoma.

We are also developing a new way to deliver cancer drugs more selectively to tumor tissue to reduce the toxic side effects to normal organs and tissues and to improve the anti-tumor activity of existing chemotherapy agents. Our technology links, or conjugates, chemotherapy drugs to biodegradable polymers, including polyglutamate. Two of our product candidates, XYOTAX and CT-2106, utilize a unique biodegradable protein polymer to deliver a taxane and a camptothecin, respectively, more selectively to tumor tissue. Because tumor blood vessels are more porous than those in normal tissue, polymers within a specific size range circulate in the bloodstream and get trapped in tumor tissue and accumulate preferentially within the tumor. In the tumor tissue, the polymer drug is taken up by cells. The polymer bound drugs are inactive while circulating in the bloodstream, which may also lower toxicity compared to the active drug substance alone.

Once within a cell, naturally occurring enzymes digest the polymer releasing the chemotherapy drug. Preclinical animal studies and human clinical data to date indicate that our polygulatamate technology may allow more drug to reach the tumor, provide increased efficacy using the same amount of chemotherapy drug and less toxicity at the same or higher equivalent doses of drug, as compared to unlinked cancer drugs.

Our first application of the polymer technology is XYOTAX™, or CT-2103, which is paclitaxel linked to polyglutamate. Paclitaxel is the active ingredient in Taxol®, one of the world's best selling cancer drugs. In animal studies, XYOTAX demonstrated fewer side effects and improved tumor killing-activity when compared to paclitaxel alone. Eight phase I clinical trials, three phase II clinical trials and three phase III clinical trials are currently underway. We also anticipate that the Gynecologic Oncology Group, or GOG, will submit a phase III trial protocol through a Special Protocol Assessment, or SPA, to the FDA to compare XYOTAX as maintenance therapy, administered monthly for 12 months, to no maintenance treatment for ovarian cancer patients who have achieved a complete remission, or CR, following front-line treatment with carboplatin and paclitaxel. The trial is expected to begin in the first half of 2004. We also initiated development of a novel polyglutamate-camptothecin molecule, or CT-2106, and filed a U.S. investigational new drug application, or IND, in December 2001. We initiated a phase I clinical trial with CT-2106 in the first quarter of 2002, and plan to initiate phase II trials in 2004.

On January 1, 2004 we completed our acquisition of Novuspharma S.p.A., ("Novuspharma"), an Italian biopharmaceutical company focused on oncology. Prior to its spinout as an independent company in 1998, Novuspharma was the oncology drug development division of Boehringer Mannheim and part of Hoffmann-La Roche. This acquisition provided us worldwide rights to pixantrone, approximately $92.5 million of cash and cash equivalents and a high-quality drug discovery organization with an extensive track record in cancer drug development. We believe pixantrone has potentially higher activity and lower cardiac toxicity than marketed anthracyclines. Cardiac toxicity is a serious limitation that can result in life-threatening heart failure. The Novuspharma acquisition and the drug candidates we obtained are consistent with our strategy of growth through strategic acquisition and our goal of developing less toxic more effective cancer therapies.

In January 2004, we received a Notice of Allowance from the U.S. Patent and Trademark Office for a patent application that would, upon issuance, extend our U.S. intellectual property position for TRISENOX through 2018. This extension is 11 years beyond the original orphan drug designation for APL that currently expires in 2007. We believe further investments in registration-directed clinical trials for various blood-related cancers and solid tumors could accelerate TRISENOX sales growth and increase the drug's market potential.

We are working on a number of drug targets in Discovery Research. Among these programs are HIF-1 alpha:p300, proteasome inhibition, a novel drug target called lysophosphatidic acid acyltransferase, or LPAAT-ß, and other similar enzymatic targets. We are in the process of continued target validation and lead optimization and may elect to move one of these programs into early development in 2005.

The Oncology Market

Overview. According to the American Cancer Society, or ACS, cancer is the second leading cause of death in the United States, resulting in over 555,000 deaths annually. The National Cancer Advisory Board reports that more than 9.2 million people in the United States have cancer, and it is estimated that one in three American women, and one in two American men will develop cancer in their lifetime. Approximately 1.4 million new cases of cancer are diagnosed each year in the United States. The most commonly used methods for treating patients with cancer are surgery, radiation and chemotherapy. Patients usually receive a combination of these treatments depending upon the type and extent of their disease. At the time of diagnosis, 70% of patients have tumors that have already spread to other parts of the body. Therefore, almost all receive systemic therapy such as chemotherapy during the course of their disease.

Despite recent advances in sequencing the human genome and the introduction of new biologic therapies for the treatment of cancer almost all patients with advanced cancer will receive chemotherapy at some point during the treatment of their disease. Four classes of chemotherapy agents, anthracyclines, camptothecins, platinates and taxanes, account for more than 95% of all chemotherapy drug usage. Unfortunately, there are significant limitations and complications associated with these agents that result in a high rate of treatment failure. The principal limitations of chemotherapy include:

- treatment related toxicities,
- inability to selectively target tumor tissue, and
- the development of resistance to the cancer-killing effects of chemotherapy.

We believe next generation agents which have lower toxicity and/or increased effectiveness of these cornerstone chemotherapy classes addresses a significant unmet market need for the majority of cancer patients in the U.S. Our cancer drug development pipeline includes a next-generation drug candidate for each of the four leading classes of chemotherapeutic agents.

Treatment related toxicities. The majority of current chemotherapy agents kill cancer cells by disrupting the cell division and replication process. Although this mechanism often works in cancer cells, which grow rapidly through cell division, non-cancerous cells are also killed because they too undergo routine cell division. This is especially true for cells that line the mouth, stomach and intestines, hair follicles, blood cells and reproductive cells (sperm and ovum). Because the mechanism by which conventional cancer drugs work is not limited to cancer cells, their use is often accompanied by toxicities. These toxicities limit the effectiveness of cancer drugs and seriously impact the patient's quality of life.

Inability to selectively target tumor tissue. When administered, chemotherapy drugs circulate through the bloodstream, reaching both tumor and normal tissues. Normal dividing tissues are generally as sensitive as tumor cells to the killing effects of chemotherapy and toxic side effects limit the treatment that can be given to patients with cancer.

Chemotherapy resistance. Resistance to the cancer killing effects of conventional chemotherapy drugs is a major impediment to continued effective treatment of cancer. Approximately 70% of all cancer patients undergoing chemotherapy ultimately develop resistance to one or more chemotherapy agents and eventually die from their disease. Because many chemotherapy drugs share similar properties, when a tumor develops resistance to a single drug, it may become resistant to many other drugs as well. Drugs that work differently from existing chemotherapies, and are less susceptible to the same mechanisms of resistance, have begun to play an important role in treating resistant tumors.

Strategy

Our goal is to become a leading cancer drug company. The following are the key elements of our business strategy:

- We target development and registration strategies in the United States or Europe that take advantage of the ability to accelerate approval either because there is an unmet medical need, or because our product profiles demonstrate significant improvement in efficacy or safety over competitive drugs.
- We plan to devote a substantial portion of our efforts to develop XYOTAX, pixantrone and to further develop and commercialize TRISENOX for additional indications.
- We have developed our own sales and marketing capabilities in the United States and select European territories and may establish collaborations to commercialize our products.
- We have Discovery Research focused on continued application of our patented polymer drug delivery technology to expand our portfolio of improved versions of currently marketed anti-cancer drugs. In addition, we are actively researching more novel drug targets that will deliver agents with improved side effect and efficacy profiles compared to competitor drugs.
- We plan to continue to in-license or acquire complementary products, technologies, or companies.

Products in Development

The following table lists active trials (indicated by a status of "open"), the trials that will be opened to enrollment during the first quarter of 2004 (status "1Q04") for our products in development, the trials that will be opened to enrollment during the second quarter of 2004 (status "2Q04") and the trials that will be opened to enrollment during the first half of 2004 ("1H04"). Also listed are the trials that have recently closed to enrollment but for which clinical trial reports are in progress (status "enrollment completed"). In addition to clinical trials that are part of our registration strategy, we also assist clinical investigators who request our help for their independent investigations that advance clinical knowledge of the use of our products. These "Investigator-Sponsored Trials" are indicated on the following table by an "*".

Product Candidate	Indication/Intended Use	Phase/Status
TRISENOX®	**HEMATOLOGIC MALIGNANCIES**	
(arsenic trioxide),	**Multiple Myeloma (MM)**	II / enrollment
ATO injection	Single agent (U.S.)	completed
	Single agent (Europe)	II / enrollment completed
	Single agent, twice weekly dosing schedule	II / open
	Combination with ascorbic acid and dexamethasone following high dose chemotherapy and autologous stem cell transplant*	II / open
	Combination with thalidomide in refractory MM*	II / open
	Combination with ascorbic acid prior to high dose chemotherapy with autologous stem cell rescue for stage II/III MM*	II / open
	Combination with dexamethasone after stem cell transplant*	II / open
	Combination with melphalan and ascorbic acid in relapsed/refractory MM*	II / open
	Combination with ascorbic acid and dexamethasone (Europe)*	II / open
	Myelodysplastic Syndromes (MDS)	
	Combination with thalidomide	II / enrollment completed
	Combination with thalidomide*	II / open
	Single agent (2 trials, U.S. and Europe)*	II / open
	Single agent (3 trials)*	II / open
	Combination with cytarabine*	I/II / open
	Combination with ascorbic acid*	II / open
	Combination with Ara-C*	I/II / open
	Combination with amifostine*	II / open
	Acute Promyelocytic Leukemia (APL)	
	Single agent, APL in molecular relapse*	II / open
	Combination with ATRA, de novo APL*	II / open
	Consolidation for primary treatment of APL*	II / open
	Chronic Myeloid Leukemia (CML)	
	Combination with ascorbic acid for non-APL AML*	II / open
	Combination with Gleevec (3 trials)*	I/II / open
	Chronic phase CML (2 trials, U.S. and Europe)*	I/II /open

Product Candidate	Indication/Intended Use	Phase/Status
	Other Leukemia/Lymphoma	
	Combination with ascorbic acid for relapsed/refractory lymphoid malignancies*	II / open
	Single agent in cutaneous T-cell lymphoma*	II / open
	SOLID TUMORS	
	Single agent for relapsed/refractory metastatic melanoma*	II / open
	Single agent for metastatic melanoma*	II / open
	Combination with ascorbic acid and temozolomide in melanoma*	I/II / open
	Combination with ascorbic acid for metastatic colon cancer refractory to chemotherapy*	II / open
	Single agent for advanced carcinoma of the breast*	II / open
	Single agent for advanced non-small cell carcinoma of the lung*	II / open
	Single agent for neuroblastomas and other solid tumors in pediatric patients*	II / open
	Hepatocellular carcinoma	I / open
	Advanced cancer patients with renal dysfunction	I / open
	Combination with DTIC for malignant melanoma*	I/II / open
	Combination with radiosurgery/radiotherapy for recurrent malignant glioma*	I /II/ open
	Pharmacokinetics in patients with APL	I / open
	Combination with docetaxel for prostate cancer*	II/ 1Q04
XYOTAX (CT-2103)	Non-small-cell lung cancer (second-line; “STELLAR 2”)	III / open
	Non-small-cell lung cancer in combination with carboplatin (front-line PS2; “STELLAR3”)	III / enrollment completed
	Non-small-cell lung cancer (front-line PS2; “STELLAR4”)	III / open
	Ovarian front-line maintenance (GOG)	III /1H04
	Ovarian □ second relapse (GOG)	II / open
	Ovarian front-line dose escalation (GOG)	I/II / open
	Ovarian 1st line in combination with carboplatin	II / open
	Advanced solid tumors in combination with cisplatin	I / open
	Advanced solid tumors, single agent—dosing every week (U.S.)	I / open
	Advanced solid tumors, single agent—dosing every 3 weeks (U.S.)	I / enrollment completed
	Non-small-cell lung cancer salvage, single agent	I / enrollment completed
	Advanced solid tumors—Dosing every 3 weeks (UK)	I / enrollment completed
	Advanced solid tumors combined with carboplatin	I / enrollment completed
	Combination with cisplatin and radiation for esophageal and gastric cancer	I / open
	Lung cancer, in combination with radiation	I / open

Product Candidate	Indication/Intended Use	Phase/Status
Pixantrone	Aggressive NHL, > 3 relapses, single agent	III / 1H04
	Relapsed indolent NHL, pixantrone +/- Rituxan	II/III / closing**
	Relapsed aggressive NHL, BSHAP	II / open
	Aggressive NHL, front-line, CPOP-R	II / 2Q04
	Relapsed AML, single agent	I / 2Q04
	Relapsed indolent NHL, FND-R	I/II / enrollment completed
	Relapsed aggressive NHL, BSHAP	I / enrollment completed
	Relapsed aggressive NHL, CPOP	I/II / open
	Multiple sclerosis, single agent, RR or PR	I / 1H04
CT-2106	Phase I Q3wk Dosing	I / open
	Phase I Q1wk Dosing	I / open
	Small cell lung cancer	II / 2Q04
	Relapsed ovarian cancer	II / 2Q04
	Relapsed colorectal cancer	II / 1H04

** As a result of our strategy to conduct a pivotal phase III trial in aggressive NHL, which we believe provides the fastest route to registration for pixantrone, the ongoing phase III trial of pixantrone in indolent NHL has been modified and reduced to a study to support registration and market development.

TRISENOX (arsenic trioxide) injection

We are marketing TRISENOX for the treatment of patients with chemotherapy resistant or relapsed APL. We received FDA approval in this indication in September 2000, and in March 2002, we received EMEA approval in the EU with a subsequent launch in the EU in June 2002. TRISENOX is a highly purified version of arsenic, a natural element. TRISENOX appears to have multiple targets and mechanisms of antileukemic activity: it degrades a protein that causes abnormal levels of immature white blood cells while simultaneously forcing immature cancer cells to self destruct through a process called programmed cell death or apoptosis. Apoptosis is a normal part of a cell's life cycle. Because cancer is often associated with a malfunction of the normal process of apoptosis, drugs that can induce apoptosis offer the hope of affecting cancer cells more selectively without the typical toxic side effects of conventional treatments. Direct induction of apoptosis represents a new method of killing tumor cells that is different from that of the majority of conventional cancer drugs. As a result, in addition to its use as single agent therapy, TRISENOX may work well when administered in combination with other cancer therapies to produce more durable cancer response rates.

We intend to protect TRISENOX by obtaining orphan drug marketing exclusivity in the U.S. and Europe. When granted orphan drug status, products usually receive seven years of marketing exclusivity in the U.S. and ten years in the EU. If a product with an orphan drug designation subsequently receives the first FDA or EMEA approval for the indication for which it has such designation, the product is entitled to orphan drug marketing exclusivity, meaning that the regulatory agency may not approve any other applications to market the same drug for the same indication, except in certain very limited circumstances, for a period of seven or ten years. We have received U.S. orphan drug marketing exclusivity for TRISENOX in APL and have received U.S. orphan drug designation for TRISENOX for the treatment of multiple myeloma, MDS, CML, AML, CLL and HCC. TRISENOX has received orphan drug designation for the treatment of APL, multiple myeloma, and MDS under the European orphan drug regulation. In addition, we recently received a Notice of Allowance from the U.S. Patent and Trademark Office for a patent application that would, upon issuance, extend our U.S. intellectual property position for TRISENOX through 2018, which is 11 years beyond the original orphan drug designation that currently expires in 2007. We believe further investments in registration directed trials for various blood related cancers and solid tumors such as melanoma, prostate cancer and brain cancer could accelerate TRISENOX sales growth and increase the drug's market potential. We also plan to pursue orphan designation for other indications. In addition, we have exclusive rights to several patent applications filed by PolaRx Biopharmaceuticals, Inc., or PolaRx, and The Memorial Sloan-Kettering Cancer Center that are directed to

methods of treating a variety of cancers and conditions with TRISENOX, and a patent application from the Samuel Waxman Cancer Research Foundation that is directed to certain formulations of arsenic trioxide.

We commenced sales of TRISENOX in October 2000, and currently market TRISENOX in the U.S. and in the EU. For the year ended December 31, 2003 we recorded $22.1 million in TRISENOX sales, an increase of 94% over 2002. TRISENOX is approved for patients with a type of blood cell cancer called APL who have relapsed or failed standard therapies. However, most TRISENOX sales result from treatment of multiple myeloma and Myelodysplastic Syndromes, or MDS. There are over 15,000 new cases of multiple myeloma diagnosed per year in the U.S. We are currently conducting or plan to conduct more than 70 clinical and investigator-sponsored trials addressing a variety of blood related cancers, including multiple myeloma and MDS, as well as solid tumors.

TRISENOX for Acute Promyelocytic Leukemia or APL. APL is a malignant disorder of the white blood cells that can occur across all age groups. Based on ACS data, approximately 1,200 to 1,800 patients are diagnosed with APL each year in the United States, with a similar incidence in the EU. Current treatment for newly diagnosed APL patients includes the use of all-trans retinoic acid, commonly called ATRA, in combination with anthracycline chemotherapy. Between 10% to 15% of patients die during front-line therapy, some patients will have long-term toxicity due to anthracycline treatment, and up to 30% of patients who achieve initial remission will eventually relapse. After relapse, the long-term outlook for these patients is poor.

TRISENOX has been investigated in relapsed and refractory APL patients, previously treated with an anthracycline and retinoid regimen, in two open label studies. One was a single investigator clinical, or pilot, trial involving 12 patients and the other was a multicenter, nine-institution study, or pivotal, trial of 40 patients. The pilot trial results and accompanying editorial describing the use of TRISENOX to treat patients with relapsed APL were published in the November 5, 1998 issue of *The New England Journal of Medicine*. The results of this study were confirmed by the pivotal trial that was published in September 2001 in *The Journal of Clinical Oncology*. Long term follow up data from the multicenter study was presented at the 8th International Symposium on APL in Rome, Italy in October 2001. The results demonstrated that among the 85% of patients who achieved a CR, 82% were confirmed to have a molecular remission using a highly sensitive molecular test. With a median follow up of 30 months, the overall survival estimate for the 52 patients in these two studies is 66%.

Side effects of TRISENOX noted in these studies were generally manageable, usually did not require interruption of therapy, and most patients were treated as outpatients once the serious symptoms of their APL were resolved. The most common side effects included nausea, cough, fatigue, headache, vomiting, abdominal pain, diarrhea, shortness of breath, leukocytosis (an increase in the number of white blood cells in circulation), hyperglycemia (increased blood sugar), rash, prolongation of the QT interval (an asymptomatic change in electrocardiogram), edema (water retention), and dizziness.

TRISENOX for Multiple Myeloma. Multiple myeloma is a malignant disease of the bone marrow that is invariably fatal. According to the Multiple Myeloma Research Foundation, multiple myeloma is the second most common blood cell malignancy, affecting nearly 50,000 people in the U.S. with over 15,000 new cases reported annually. The disease is initially treated with oral chemotherapy drugs. Once the disease can no longer be controlled with oral drugs, treatments include high dose corticosteroids, high dose chemotherapy, a combination of high dose chemotherapy and stem cell transplants, and recently thalidomide. Approximately 50% of myeloma patients respond to these treatments.

Preclinical studies have suggested that TRISENOX may be able to kill multiple myeloma cells taken from chemotherapy-resistant patients and that the killing may be enhanced when TRISENOX is combined with vitamin C (ascorbic acid), corticosteroids, or other agents used to treat myeloma. Preliminary reports from two clinical studies and a series of case studies using TRISENOX, alone or in combination with other agents such as ascorbic acid, in patients with myeloma who had failed multiple prior therapies showed encouraging responses. In general, the combinations were well tolerated with no reported grade 4 toxicities. These findings were reported

at the 9th International Workshop on Multiple Myeloma in May 2003, at the American Society of Clinical Oncology, or ASCO, meeting in June 2003, at the 8th Congress of the European Hematology Association, or EHA, also in June, and at the American Society of Hematology, or ASH, meeting in December 2003. We are sponsoring several multicenter trials with TRISENOX used either as a single agent or in combination with corticosteroids, ascorbic acid, or thalidomide for advanced stages of multiple myeloma. TRISENOX has received orphan drug designation from the FDA and the EMEA for this indication.

TRISENOX for Myelodysplastic Syndrome, or MDS. MDS is a preleukemic condition affecting about 36,000 individuals a year with an annual incidence of 15,000 patients a year. Many patients who develop MDS progress to develop acute leukemia. All patients have a progressive decline in their ability to make blood cells, ultimately resulting in anemia requiring red blood cell transfusions, a low white blood cell count placing them at risk for infections, and a low platelet count making them prone to bleeding. There is no specific approved therapy for this disorder except supportive care and the use of growth factors such as epoetin alfa and sargramostim. Reports from two clinical studies, and a series of case studies using TRISENOX, alone or in combination with other agents such as Vitamin C or with dexamethasone, in high and low-risk myelodysplastic syndrome patients showed encouraging responses as reported at the 7th Annual International Symposium on MDS in 2003 as well as at ASCO, at EHA and at ASH. Drug related adverse events were generally manageable and resolved after completion of therapy. Additional trials exploring the activity of TRISENOX, alone or in combination with growth factors, thalidomide and Ara-C have been initiated, and preliminary data is encouraging. Orphan drug designation has been received from both the FDA and the EMEA.

TRISENOX for Chronic Myeloid Leukemia, or CML. CML is a form of leukemia affecting approximately 26,000 individuals in the U.S. and has an annual incidence of 4,600 patients per year. It is caused by a highly specific chromosomal rearrangement that produces an abnormal fusion gene called the bcr-abl (this is similar to the cause of APL, which results from a different chromosomal rearrangement). A dramatic advance was made in the treatment of CML in 2001 with the approval of Gleevec, a drug that specifically targets and inactivates the bcr-abl gene product. Gleevec can induce durable clinical remissions in a very high percentage of patients with early stage CML. Although it is active in patients with later stages of the disease, termed accelerated phase or blast crisis, the remissions are short-lived as resistance to Gleevec develops. There is a need to identify drugs that will enhance the efficacy of Gleevec in advanced stages of CML and in particular, prevent the emergence of resistance. Data reviewed as part of abstracts presented at the ASH (2002) and at the Advances in Cancer Differentiation Therapy Symposia, Shanghai, China (2000), suggest that TRISENOX may be an agent to use with Gleevec for the following reasons:

- It is active in CML by itself producing CRs in 74% of newly diagnosed CML patients in a study from China;
- It causes degradation of the bcr-abl and therefore works in concert with Gleevec against the direct cause of the disease and prevents the emergence of resistance to Gleevec; and
- CML cells are far more sensitive to TRISENOX than are normal blood cells.

Trials exploring the use of TRISENOX in conjunction with Gleevec in both early and later stages of CML are in progress or are about to begin.

TRISENOX for Other Hematologic Malignancies. A number of other cancers of blood and lymphatic organs are under study with TRISENOX including lymphomas and leukemias, including NHL, which has affected more than 350,000 people in the U.S. and there are approximately 54,000 new cases per year according to the ACS. Despite new effective therapies, relatively few patients are cured and additional treatments are needed. Studies are currently in progress to evaluate the activity of TRISENOX as a single agent and in combination with standard therapies for lymphoma.

TRISENOX for Solid Tumors. Solid tumors include malignancies that develop in various tissues throughout the body, as opposed to hematologic cancers described above. Genitourinary cancers, such as

cervical, renal cell, bladder and prostate, have affected approximately three million patients in the U.S., with over 350,000 new cases diagnosed annually. Preclinical data and preliminary clinical trial results have suggested that TRISENOX may have anti-tumor activity in a number of solid tumors including cancers of the ovary, prostate, bladder, liver, lung and melanoma. Preliminary data from phase I and II studies indicate clinical activity in prostate cancer, melanoma and neuroblastoma. A number of other studies looking at TRISENOX as a single agent and in combination with standard therapy in patients with solid tumors are either underway or planned.

Polyglutamate Drug Delivery Technology

We licensed the worldwide exclusive rights to polyglutamate (PG) and related polymers with their applications to anticancer drugs from PG-TXL Company, L.P. in 1998. This technology was originally developed at the M.D. Anderson Cancer Center. The PG technology represents a new way to deliver cancer drugs more selectively to tumor tissue with the goal of reducing the toxic side effects and improving the anti-tumor activity of existing chemotherapy agents. PG is a biodegradable polymer of glutamic acid, a naturally occurring amino acid. To build a PG drug, we link glutamic acid molecules together to an optimal size and then link them to active drug agents. We believe the polymer technology takes advantage of a well-described difference between tumor blood vessels and blood vessels in normal tissues. The blood vessels in tumor tissues are more porous than those in normal tissues, and they are therefore more permeable to large molecules, such as our polymers, that are within a specific size range. As the polymer, carrying its tumor-killing drug, circulates in the bloodstream and passes through the tumor blood vessels, it becomes trapped in the tumor tissue allowing a significantly greater percentage of the anti-cancer drug to accumulate in tumor tissue compared to normal tissue. The toxicity of the chemotherapy drug to normal tissues also may be reduced because the drug is inactive as long as it is bound to the polymer. Once the polymer backbone is digested in the tumor, the cancer-killing drug is released directly into the cancer tissues.

Based on observations from preclinical animal studies, along with clinical trial data from phase I and phase II studies, we believe that our polymer-chemotherapy drug conjugates may be able to achieve a number of benefits over existing chemotherapy drugs, including:

- eliminates the need for toxic solubilizing agents such as Cremophor/ethanol,
- eliminates the need for routine pre-medication,
- allows more drug to reach the tumor,
- less active drug to reach normal tissues resulting in decreased toxicity,
- increases efficacy using the same amount of active drug,
- lessens toxicity at the same or higher doses of active drug, and
- has potential to overcome resistance to the underlying chemotherapy drug.

In addition, we believe that linking our polymers to existing drugs will yield patentable subject matter and that our polymer-drug conjugates will not infringe third party patents covering the underlying drug. However, there can be no assurance that we will receive a patent for our polymer conjugates or that we will not be challenged by the holder of a patent covering the underlying drug.

Our strategy is to use this novel polymer technology to build a portfolio of potentially safer and more effective versions of well-known anti-cancer agents. We believe that our polymer drug development program may lower the risks inherent in developing new drugs because we are linking polymers to well defined and widely used chemotherapy drugs. We are initially focusing our development efforts on applying PG to two of the fastest growing classes of anticancer drugs, taxanes and camptothecins.

XYOTAX (paclitaxel poliglutamex). XYOTAX, or CT-2103, utilizes a biodegradable protein polymer to deliver the chemotherapy drug paclitaxel more selectively to tumor tissue, for the treatment of non-small cell lung cancer, ovarian cancer and other cancers where taxanes are widely used. Taxanes are one of the best-selling classes of chemotherapy drugs. Paclitaxel, one of two marketed taxanes, is branded as paclitaxel and is approved for the treatment of NSCLC, ovarian cancer and breast cancer, although its widest usage is in lung and ovarian cancers. XYOTAX is PG linked to paclitaxel, the active ingredient in paclitaxel. Paclitaxel is difficult to administer because it is formulated in Cremophor, a mixture of castor oil and ethanol, which is extremely irritating to blood vessels and requires surgical placement of a large catheter for administration. It also may cause allergic reactions, and typically requires a minimum of three hours of intravenous infusion. XYOTAX is 80,000 times more water-soluble than paclitaxel, allowing it to be dissolved in 100 ML of a simple water and sugar based solution and infused over ten minutes. Also, because XYOTAX is water-soluble, its administration does not require routine premedication with steroids and antihistamines to prevent severe allergic reactions; such premedication can be reserved for those patients who show signs of sensitivity during treatment. XYOTAX may also allow delivery of higher doses than can be achieved with paclitaxel.

It is estimated that in the United States, more than 3.8 million people have breast, ovarian, lung and colorectal cancer, with more than 550,000 new cases diagnosed each year. IMS Health reported taxane U.S. sales of approximately $881 million, and worldwide sales of roughly $2.5 billion for 2003, despite the difficulties associated with their administration and their serious dose-limiting toxicities. The majority of taxane use has been in breast, ovarian and lung cancer indications.

XYOTAX has been compared to paclitaxel in multiple animal studies with a variety of different tumors. These animal studies indicate that XYOTAX has a unique profile resulting in better tolerability and efficacy, both when used by itself as a single agent or in combination with other chemotherapy, radiation therapy, or therapeutic monoclonal antibodies. In preclinical animal studies:

- The maximum tolerated dose in mice, or MTD, for XYOTAX is approximately twice that for the approved formulation of paclitaxel.
- When the MTD of XYOTAX is compared to the MTD of paclitaxel, XYOTAX was more effective and in a number of models was curative. Cures are generally not observed with paclitaxel in similar models.
- Examination of the distribution of XYOTAX to tumor tissue in mice and comparing it to tumors in mice who received the equivalent dose of paclitaxel showed that approximately 12-fold more paclitaxel was delivered with XYOTAX. More paclitaxel was present in the tumors at the end of one week following XYOTAX administration than was present one day after administration of standard paclitaxel.
- Because in XYOTAX, paclitaxel is directly bound to PG backbone, it is both highly water soluble and inactive until released. Therefore, it can be delivered without toxic solubilizing agents such as Cremophor (used in paclitaxel), which minimizes the requirement for premedications to prevent infusional hypersensitivity. Moreover, little free paclitaxel is present in circulation, potentially reducing side effects to normal tissues such as the bone marrow, nervous tissue, and hair follicles.
- XYOTAX is engulfed by tumor cells instead of passively diffusing into them. Because of this, it may bypass a common mechanism of paclitaxel resistance associated with a cell membrane pump known as the multi-drug resistance pump; XYOTAX in preclinical studies is effective in tumors that are resistant to standard paclitaxel.

Lastly, based on additional preclinical data, XYOTAX is more effective than standard paclitaxel at enhancing the effectiveness of other cancer therapies including chemotherapy and radiation. A March 2003 report in the International Journal of Radiation Oncology Biology-Physics shows that in a curative, standard radiation model, XYOTAX selectively improved tumor response to radiation by up to eightfold after single-dose or fractionated irradiation. Most importantly, unlike standard paclitaxel, XYOTAX did not sensitize normal

organs such as skin, hair follicles, or the gastrointestinal tract to radiation. A grant from the National Cancer Institute to the MD Anderson Cancer Center and CTI will support a clinical trial using XYOTAX in sensitive patients undergoing potentially curative radiation for lung cancer.

The phase I clinical trial of XYOTAX sponsored by the Cancer Research Campaign, or CRC, has completed patient enrollment and has been reported to show that XYOTAX may have a more favorable toxicity profile than expected from equivalent doses of paclitaxel, while demonstrating evidence of anti-tumor activity across a variety of types of cancer including gastric cancer and mesothelioma, tumors that are intrinsically resistant to taxanes.

Based on the preliminary data generated in the phase I CRC trial, and following discussions with a number of opinion leaders and cooperative groups, we initiated phase II development for XYOTAX in the U.S. and other countries. Eight phase I clinical trials, three phase II clinical trials and three phase III clinical trials are currently underway. Most studies utilize a 10-minute infusion time.

Our development strategy for XYOTAX is to examine its potential safety and efficacy as single agent therapy or in combination with other chemotherapy drugs in solid tumors. The phase III trials in non-small-cell lung cancer patients are intended to demonstrate the safety and efficacy of XYOTAX compared to current treatment standards. Based upon a successful conclusion, we anticipate submitting a New Drug Application, or NDA, at the end of 2004.

In 2002, we announced that the GOG plans to conduct a phase III trial of XYOTAX in treatment of ovarian cancer We anticipate that the GOG will submit a phase III trial protocol through a SPA to the FDA to compare XYOTAX as maintenance therapy, administered monthly for 12 months, to no maintenance treatment for ovarian cancer patients who have achieved a CR following front-line treatment with carboplatin and paclitaxel. This trial is expected to begin in the first half of 2004.

Based on our phase I and II data from over 400 patients, we believe that XYOTAX may have less severe side effects, including a reduction in severe neutropenia, allergic reactions and hair loss, and superior anti-tumor activity than marketed taxanes. In a phase II study of XYOTAX for the front-line treatment of advanced NSCLC patients who were either over 70 years old or performance status 2, or PS2, we observed a median survival time of 5.4 months among PS2 patients, which compares favorably to the 2.4 months reported in a separate randomized trial of standard paclitaxel. In the fourth quarter of 2002, we initiated three pivotal XYOTAX phase III clinical trials. These include two phase III trials of XYOTAX for the front-line treatment of poor PS2, NSCLC patients and one phase III trial for the second-line treatment of NSCLC.

The following table summarizes our ongoing pivotal trials for XYOTAX.

Trial	Design	Comparator	XYOTAX dose	Primary Endpoint	# of Patients	Status
STELLAR 3 1st line NSCLC, PS2	Superiority	paclitaxel + carboplatin	210 mg/m^2 + carboplatin	Survival	402	Enrollment complete; data 2H04
STELLAR 4 1st line NSCLC, PS2	Superiority	gemcitabine or vinorelbine	175 mg/m^2	Survival	464	Enrollment ongoing; data 2H04
STELLAR 2 2nd line NSCLC	Superiority	docetaxel	210 mg/m^2 + carboplatin 175 mg/m^2 in PS2	Survival	840	Enrollment ongoing; data mid-2005

In November 2003 we completed enrollment in STELLAR 3, our first pivotal trial in lung cancer. We anticipate completing enrollment for STELLAR 2 and STELLAR 4, the other two pivotal XYOTAX lung cancer trials, by mid-2004. We anticipate releasing clinical data from STELLAR 3 and STELLAR 4 in the second half

of 2004 ("2H04") and releasing clinical data from STELLAR 2 by mid-2005. We have followed the FDA guidelines for SPA on all of our ongoing pivotal trials. Based on the positive outcome of the first of these phase III trials (STELLAR 3) and supporting data from phase II studies, it is anticipated that an NDA will be filed at the end of 2004.

Lung cancer is the most common cause of cancer death in the U.S. and Europe. The ACS estimates that 139,000 new cases of non-small cell lung cancer will be diagnosed in the U.S. in 2004 and approximately 106,000 of these are expected to receive chemotherapy in 2004. Of these 106,000 patients approximately 30,000 are classified as PS2. These patients tolerate chemotherapy poorly and have a significantly shorter median survival than healthier patients. The chemotherapy drug most commonly used to treat NSCLC in the U.S. is paclitaxel. Data from a randomized trial of paclitaxel in NSCLC showed a median survival of approximately 2.4 months in front-line therapy of PS2 patients when administered as a single agent and 4.7 months when administered in combination with platinum-containing chemotherapy drugs. Approximately 55,000 patients in the U.S. receive second line treatment for lung cancer U.S. annually, for which docetaxel is the most commonly used agent to treat recurrent NSCLC.

In June 1998, we licensed exclusive worldwide rights to paclitaxel linked to polyglutamate, branded as XYOTAX, and to all potential uses of the polyglutamate polymer technology.

In October 2003, following a planned safety analysis by an independent Data Monitoring Committee of our three XYOTAX pivotal trials, we reduced the dose of XYOTAX from 235mg/m^2 to 175mg/m^2 in the STELLAR 4 trial. This change was based on a small percentage of patients in the study who appeared to develop early (first- or second-cycle) neutropenic-related toxicities when compared to the number of patients in the gemcitabine comparison arm. While the incidence of grade 4 neutropenia observed in our phase II trials of 235mg/m^2 XYOTAX is substantially lower than that reported in the label for the equivalent dose of paclitaxel (25% vs 50% respectively), when compared to the reported incidence of gemcitabine 6% (label claim), the observed higher occurrence of early neutropenic events in the XYOTAX arm was not surprising. Since the incidence of neutropenia is low at the 175mg/m^2 dose of XYOTAX (2%) we believe lowering the dose in STELLAR 4 should prevent any increase in early neutropenic related events relative to the gemcitabine comparator arm. The 175mg/m^2 dose was well tolerated in prior phase II studies in more than 125 patients and resulted in encouraging duration of median survival in the phase II NSCLC study. All patients currently enrolled in STELLAR 4 are continuing their treatment at the lower dose of 175mg/m^2, while the comparator arm dosages will continue according to the protocol at their approved marketed dose. The recommendation of the Data Monitoring Committee did not impact the STELLAR 3 trial, which completed enrollment last year With this dose adjustment, we do not anticipate there being an effect on the integrity or utility of these pivotal studies for registration since the single-agent dose of 175mg/m^2 of XYOTAX is standardized across all PS2 patients, including PS2 patients in the STELLAR 2 pivotal trial.

At last year's European Cancer Conference, meeting, we reported data on a phase II study of XYOTAX in the front-line treatment of advanced NSCLC patients who were either over 70 years old and/or PS2. In the first part of the study, 28 patients were treated with XYOTAX every 21 days. Using standard criteria to assess efficacy, 18 patients (64%) achieved disease control, with two patients (7%) achieving a partial remission and 16 patients (57%) having stable disease. XYOTAX therapy was well tolerated with 50% of patients receiving four or more cycles of therapy and almost 30% of patients receiving six or more cycles. No alopecia or hypersensitivity reactions, which are commonly seen with standard paclitaxel formulations, were reported. Only one patient experienced grade 4 neutropenia and four patients reported grade 3 neuropathy, which occurred mostly in patients with concomitant progressive disease and significant disease-related comorbid conditions. We observed a median survival time of 5.4 months among PS2 patients, which compares favorably to the 2.4 months reported in a separate randomized trial of standard paclitaxel.

Ovarian cancer is diagnosed in approximately 26,000 women per year in the U.S. The standard of care for front-line treatment of ovarian cancer is paclitaxel and carboplatin. In the fourth quarter of 2002, we announced

that the GOG agreed to conduct a phase III trial of XYOTAX in the treatment of ovarian cancer. We anticipate the GOG will submit a phase III trial protocol through an SPA to the FDA to compare XYOTAX as maintenance therapy, administered monthly for 12 months, to no maintenance treatment for patients who have achieved CR following front-line treatment with carboplatin and paclitaxel. The planned primary endpoint of the study will be progression free survival with overall survival as a secondary endpoint. A prior study of monthly paclitaxel maintenance for 12 months significantly increased progression-free survival, however, toxicities prevented full dose treatment with paclitaxel for the majority of patients in this trial. Based on discussion with the GOG, we believe the pivotal trial will begin in the first half of 2004. We are also currently conducting three other phase II clinical trials of XYOTAX in ovarian cancer.

Pixantrone

We are developing pixantrone for the treatment of NHL. Preclinical data and clinical studies in over 175 patients indicate that pixantrone is easy to administer, may exhibit significantly lower potential for cardiac toxicity and may have more potent anti-tumor activity than marketed anthracyclines. We are currently conducting or plan to conduct one phase III trial, three phase II trials, one phase II/III trial in indolent NHL and two phase I trials. The trial in indolent NHL has been modified and reduced to a registration supporting study based on our strategy to conduct a pivotal phase III trial in aggressive NHL, which we believe provides the fastest route to registration for pixantrone. We intend to begin a randomized pivotal phase III trial for relapsed, aggressive NHL during the first half of 2004. We expect to have data from the pivotal trial and, if the trial is successful, we intend to file an NDA for pixantrone in late 2005 or early 2006. We believe pixantrone complements our hematology and oncology expertise and our growing TRISENOX commercial franchise.

Anthracyclines are one of the most potent classes of anti-cancer agents used in front-line treatment of aggressive lymphoma, leukemia and breast cancer. For these diseases, anthracycline-containing chemotherapy regimens can often produce long-term cancer remissions. However, the currently marketed anthracyclines can cause severe, permanent and life threatening cardiac toxicity when administered beyond widely recognized cumulative lifetime doses. This toxicity prevents repeat use of anthracyclines in the 70% of patients who relapse after front-line anthracycline treatment. In addition, the cardiac toxicity of anthracyclines prevents their use in combination with other drugs that also can cause cardiac toxicity. For example, Herceptin and anthracyclines are both used for the treatment of breast cancer, but overlapping cardiac toxicity prevents these agents from being used together. An anthracycline with lower cardiac toxicity could potentially allow the use of both drugs in combination.

We believe a next-generation anthracycline with better ease of administration, greater anti-tumor activity and less cardiac toxicity could gain a significant share of the anthracycline market. We also believe such a drug could expand anthracycline use by allowing repeat anthracycline therapy in relapsed patients and by allowing combination therapy with a broader range of chemotherapy drugs.

Recently, we met with the FDA and discussed the design for a pivotal clinical trial of single-agent pixantrone in the treatment of third-line relapsed aggressive NHL. A SPA package was filed and we expect to initiate a pivotal trial of pixantrone for relapsed NHL in approximately 320 patients in the first half of 2004. We believe such a trial would qualify for accelerated review and approval under current FDA guidelines. Enrollment is expected to take approximately one year and assuming a positive outcome for this trial we would intend to file an NDA in late 2005 or early 2006.

In a phase II trial published in the journal Hematologica in August 2003, among patients with relapsed aggressive NHL who failed a median of two or more prior regimens including prior anthracycline therapy, single-agent pixantrone produced an objective tumor response in 9 of 33 patients (27%) with 5 patients experiencing a complete response. Median duration of response was encouraging, in some cases lasting over 17 months. Pixantrone was well tolerated in this trial with neutropenia being the most frequently reported side effect. Cardiac symptoms were infrequent with only three patients experiencing a decrease of more than 10% of the left ventricular ejection fraction, or LVEF, a marker of cardiac function, which was possibly treatment-related. We believe that the low incidence of cardiac toxicity reported in this trial was encouraging because

patients had previously been exposed to anthracylcines, an equivalent dose of high cumulative doses of doxorubicin.

We have also reported promising clinical data for pixantrone in combination with other agents that are used in the treatment of lymphoma. In one trial, pixantrone was used to replace the standard anthracycline agent doxorubicin as part of the CHOP (a combination-chemotherapy regimen consisting of cyclophosphamide, doxorubicin (an anthracycline), vincristine and predisone which is the standard of care for front-line treatment) regimen. The CHOP regimen is highly active when used in front-line patients, but for patients who relapse following front-line CHOP therapy further treatment with doxorubicin may not be possible due to the high risk of cardiac toxicity. Preliminary results from this trial, which were presented at the 2003 ASH meeting, revealed that of the 22 patients evaluable for a response, 13 patients (59%) had a complete response, with four patients experiencing a partial response. This corresponds to a major objective response rate of 77%. At the highest pixantrone dose (150 mg/m^2), all seven patients responded, with six patients (86%) experiencing a complete response. All patients had failed prior CHOP therapy for relapsed NHL. The median prior exposure to anthracyclines in this patient group was 560 mg/m^2. Despite prior heavy anthracycline exposure, only one patient with a prior history of heart disease reported symptoms of chest pain. A phase II study at the highest dose level studied is ongoing in up to 30 additional patients.

We have also conducted clinical trials for pixantrone using a variant of the ESHAP (a regimen consisting of etoposide, methylprednisdone, cytarabine and cisplatin), termed the BSHAP regimen, a non-anthracycline multi-agent regimen developed as a second line therapy for patients who fail front-line CHOP and who are not able to receive further anthracycline treatment. In this modified regimen, pixantrone replaces etoposide, with a goal to improve efficacy. In this trial, 11 of 18 (61%) of evaluable patients achieved an objective tumor response with six patients (33%) achieving a complete response. No clinically significant cardiac events were observed in this trial and no patient experienced a decrease in LVEF of more than 20%.

Other clinical data suggest the product may also be useful in treating indolent NHL a less rapidly progressive but none the less ultimately fatal form of NHL. In one trial pixantrone was administered in a variation of the FND-R regimen, where pixantrone replaces the anthracycline derivative mitoxantrone. Preliminary results reveal that all six evaluable patients in this trial achieved an objective response. A randomized phase III clinical trial designed to compare the efficacy and safety of pixantrone administered in combination with the monoclonal antibody Rituxan, to Rituxan alone, is ongoing. This trial is currently accruing patients in the U.S. and Europe and is expected to support the marketing of pixantrone, as well as to provide pharmacokinetic and additional safety data in the indolent NHL setting.

In the U.S., aggressive relapsed NHL affects over 160,000 people with approximately 30,000 new cases diagnosed per year. The standard of care for front-line treatment is known as CHOP. This regimen is used either alone or in conjunction with Rituxan, and is able to induce CRs in up to half of patients. However, upon relapse, many patients are unable to undergo an additional course of CHOP therapy due to the risk of cardiac toxicity, and other, less effective chemotherapy regimens are often used for the second-line treatment of relapsed NHL. There are no approved treatments for second or third line treatment for the 73,000 patients with relapsed aggressive NHL in the U.S.

A pilot study in multiple sclerosis is planned to start in the first half of 2004. Preliminary data from this phase I study will be used to guide future business development strategies in 2005.

CT-2106 (polyglutamate camptothecin)

We are also developing a novel polyglutamate-camptothecin molecule, CT-2106. Linking a camptothecin to our polyglutamate polymer renders it water soluble, and animal studies suggest that it permits up to 400% more drug to be administered without an increase in toxicity. CT-2106 as a single agent and/or in combination with 5FU showed significantly enhanced anti-tumor activity in several animal tumor models. We initiated a phase I clinical study for this product candidate in 2002. CT-2106 has been administered to 29 patients with a variety of advanced stage cancers with encouraging preliminary safety data with the dose limiting toxicity observed being

neutropenia and thrombocytopenia. Notably patients did not experience severe gastrointestinal or genitourinary toxicity, two side effects common with camptothecin therapy. In 2004, we plan to initiate phase II clinical trials of CT-2106 in combination with standard chemotherapy in colorectal cancer and as a single agent in ovarian cancer and small cell lung cancer.

Camptothecins are an important and one of the fastest growing classes of anti-cancer drugs. However, like taxanes, their full clinical benefit is limited by poor solubility and significant toxicity. Orally delivered analogs, such as topotecan and irinotecan, are soluble, but are less effective in combating tumors. Camptothecins are important drugs in the treatment of advanced colon, lung and ovarian cancers. Worldwide sales for camptothecins were approximately $1.3 billion in 2003.

Preclinical Programs

We are working on a number of drug targets in Discovery Research. Among these programs are bisplatinates, HIF-1 alpha:p300, proteasome inhibition, a novel enzymatic drug target called LPAAT-ß and other cytotoxic and/or antiangiogenic targets. We are in the process of continued target validation and lead optimization and may elect to move one of these programs into early development in 2005. In addition to Discovery Research, preclinical activities are focused on product lifecycle management, including the development of alternative dosage forms and routes of administration for TRISENOX and existing products in the development pipeline.

Research and development is essential to our business. We spent $89.5 million in 2003, $58.8 million in 2002 and $44.7 million in 2001 on Company sponsored research and development activities. Under a licensing agreement with Chugai Pharmaceutical Co., Ltd., we received development expenditure reimbursements of approximately $1.1 million and $1.9 million in 2003 and 2002, respectively, which we recorded as revenue.

Collaboration and Licensing Arrangements

PG-TXL Company, L.P. On June 30, 1998, we entered into an agreement with PG-TXL Company, L.P. granting us an exclusive worldwide license for the rights to PG-TXL and to all potential uses of PG-TXL Company's polymer technology. Under the terms of the agreement, we acquired the rights to fund the research, development, manufacture, marketing and sale of anti-cancer drugs developed using this polymer technology. We are obligated to make payments upon the attainment of significant development milestones, as defined in the agreement. We also granted warrants to purchase 350,000 shares of our common stock to PG-TXL Company, L.P., which became exercisable upon our entering a licensing agreement for CT-2103 with Chugai Pharmaceutical Co., Ltd. As of December 31, 2003, we have made an aggregate of $5.0 million in milestone payments**.** The aggregate amount of future milestone payments we may be required to pay pursuant to the PG-TXL agreement is $15.5 million. These additional payments may become due upon future milestones, such as trial commencements and completions, filings and regulatory approvals.

Chugai Pharmaceutical Co., Ltd. In October 2001, we entered into a licensing agreement with Chugai Pharmaceutical Co., Ltd., or Chugai, for the development and commercialization of XYOTAX. This agreement grants an exclusive license to Chugai to develop and commercialize XYOTAX in several Asian markets. Upon execution of the agreement, Chugai paid us a $3.0 million initial payment. Under the agreement, we may also receive future milestone payments totaling up to $13.0 million upon Chugai's achievement of certain product development milestones, and we are entitled to receive royalties on product sales in the territories covered under the agreement. We received approximately $1.1 million and $1.9 million in development expenditure reimbursements from Chugai in 2003 and 2002, respectively, as well as a $3.0 million milestone payment in 2002. Chugai has also committed up to $54 million in development expenditures over the course of the licensing agreement. The agreement will terminate on a country-by-country basis upon the earlier to occur of the expiration of the applicable patent rights, if any, in a given country or fifteen years from the date of the first commercial sale of XYOTAX in such country.

Nippon Shinyaku Co. Ltd. In December 2002, we entered into a distribution agreement with Nippon Shinyaku Co. Ltd., or Nippon. This agreement grants certain rights to Nippon to exclusively market and distribute TRISENOX (arsenic trioxide) injection in Japan, South Korea, and Taiwan. Under the agreement, we received and recognized as revenue a $500,000 milestone payment in June 2003 for Nippon's submission of an NDA in Japan. We are also eligible to receive future milestone payments totaling up to $3.5 million upon attainment of certain regulatory achievements.

Patents and Proprietary Rights

We dedicate significant resources to protecting our intellectual property, which we believe is important to our business. Through our acquisition of PolaRx, we obtained rights to four pending patent families that, in the aggregate, cover dosage formulations, methods of administration and methods of use for various forms of arsenic trioxide and related compounds. This portfolio includes one allowed U.S. patent application and 35 U.S. and foreign pending patent applications directed to TRISENOX.

We have exclusive rights to five issued U.S. patents and 101 U.S. and foreign pending patent applications relating to our polymer drug delivery technology. There are five issued U.S. patents and 28 pending U.S. and foreign patent applications directed to XYOTAX. Of the five issued U.S. patents, two of them and another 18 pending U.S. and foreign patent applications are directed to CT-2106. Additionally, we have four issued U.S. patents and 57 foreign pending and issued patents directed to pixantrone.

We intend to file additional patent applications when appropriate, with respect to improvements in our core technology and to specific products and processes that we develop. Patents may not issue from any present or future applications or, if patents do issue, such patents may not be issued on a timely basis or claims allowed on issued patents may not be sufficient to protect our technology. In addition, the patents issued to us may be challenged, invalidated or circumvented or the rights granted thereunder may not provide proprietary protection or commercial advantage to us. With respect to such issued U.S. patents or any patents that may issue in the future, they may not effectively protect the technology involved, foreclose the development of competitive products by others or otherwise be commercially valuable.

We have sought and intend to aggressively seek patent protection in the United States, Canada, Mexico, Europe and Japan to protect any products that we may develop. We also intend to seek patent protection or rely upon trade secrets to protect certain of our enabling technologies that will be used in discovering and evaluating new drugs that could become marketable products. However, such steps may not effectively protect the technology involved. To protect any such trade secrets and other proprietary information, we rely on confidentiality and material transfer agreements with our corporate partners, employees, consultants, outside scientific collaborators and sponsored researchers and other advisors. These agreements may be breached, we may not have adequate remedies for breach or our trade secrets may otherwise become known or independently discovered by competitors. We also have our clinical advisors, our consultants and, in most cases, our employees enter into agreements requiring disclosure to us of ideas, developments, discoveries or inventions conceived during employment or consulting and assignment to us of proprietary rights to such matters related to our business and technology.

Manufacturing

We currently use, and expect to continue to be dependent upon, contract manufacturers to manufacture each of our product candidates. We have established a quality control and quality assurance program, including a set of standard operating procedures and specifications, designed to ensure that our products are manufactured in accordance with current Good Manufacturing Procedures, or cGMPs, and other applicable domestic and foreign regulations. These manufacturers may not meet our requirements for quality, quantity or timeliness.

We will need to invest in additional manufacturing resources, and may seek to enter into additional collaborative arrangements with other parties that have established manufacturing capabilities. It is likely that we

will continue to rely on third party manufacture of our development and commercial products on a contract basis. Currently, we have agreements with third party vendors to furnish TRISENOX, XYOTAX**,** pixantrone and CT-2106 drug supply for clinical studies and in the case of TRISENOX, for commercial market demand.

In September 2001, we entered into a supply agreement with Natural Pharmaceuticals, Inc. for paclitaxel, a key starting material for XYOTAX. Under the supply agreement, we purchased paclitaxel at a pre-determined price and expect to receive supply through 2004. We will be dependent upon these third parties to supply us in a timely manner with products manufactured in compliance with cGMPs or similar standards imposed by foreign regulatory authorities where our products are tested and/or marketed.

Sales and Marketing

We have developed an experienced sales and marketing infrastructure in the United States to commercialize our portfolio of oncology products. The oncology market is highly concentrated. It is comprised primarily of the approximately 8,500 physicians who order the vast majority of cancer therapeutics, but we sell TRISENOX primarily to pharmaceutical wholesalers and oncology distributors, who in turn sell TRISENOX primarily to hospitals and clinics. We currently are marketing TRISENOX with our direct sales force in the U.S. consisting of one national account manager, five regional business directors, and 40 field based oncology account managers. An additional seven medical science liaisons provide scientific support in the field.

In February 2004, we announced a significant expansion of our European commercial operations by hiring additional sales personnel. We have 16 fully trained field-based country managers and sales representatives in eight major market countries selling TRISENOX. We believe this experienced sales force will increase European sales of TRISENOX as well as aid in the promotion of any additional commercial products that we may acquire or develop internally.

Competition

Competition in the pharmaceutical and biotechnology industries is intense. We face competition from a variety of companies focused on developing oncology drugs. We compete with large pharmaceutical companies and with other specialized biotechnology companies, including but not limited to Bristol-Myers Squibb Co., Aventis, American Pharmaceutical Partners, Neopharm Inc. and Sonus Pharmacuticals for XYOTAX, Celgene Corporation, Millennium Pharmaceuticals, Inc., Pharmion Corporation and SuperGen Corporation for TRISENOX and Inex/Enzon Pharmaceuticals Corporation for pixantrone. Many of our existing or potential competitors have substantially greater financial, technical and human resources than us and may be better equipped to develop, manufacture and market products. Smaller companies may also prove to be significant competitors, particularly through collaborative arrangements with large pharmaceutical and established biotechnology companies. Many of these competitors have significant products that have been approved or are in development and operate large, well-funded research and development programs.

We expect to encounter significant competition for the principal pharmaceutical products we plan to develop. Companies that complete clinical trials, obtain required regulatory approvals and commence commercial sales of their products before us may achieve a significant competitive advantage if their products work through a similar mechanism as our products and if the approved indications are similar. Accordingly, we do not believe competition is as intense among products that treat cancer through novel delivery or therapeutic mechanisms where these mechanisms translate into a clinical advantage in safety and/or efficacy. A number of biotechnology and pharmaceutical companies are developing new products for the treatment of the same diseases being targeted by us. In some instances, such products have already entered late-stage clinical trials or received FDA approval. However, cancer drugs with distinctly different mechanisms of action are often used together in combination for treating cancer, allowing several different products to target the same cancer indication or disease type. Such combination therapy is typically supported by clinical trials that demonstrate the advantage of combination therapy over that of a single agent treatment.

We believe that our ability to compete successfully will be based on our ability to create and maintain scientifically advanced technology, develop proprietary products, attract and retain scientific personnel, obtain patent or other protection for our products, obtain required regulatory approvals and manufacture and successfully market our products either alone or through outside parties. We will continue to seek licenses with respect to technology related to our field of interest and may face competition with respect to such efforts.

Government Regulation

The research, development, testing, manufacture, labeling, promotion, advertising, distribution, and marketing, among other things, of our products are extensively regulated by governmental authorities in the United States and other countries. In the United States, the FDA regulates drugs under the Federal Food, Drug, and Cosmetic Act, or the FDCA, and its implementing regulations. Failure to comply with the applicable U.S. requirements may subject us to administrative or judicial sanctions, such as FDA refusal to approve pending NDAs, warning letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, and/or criminal prosecution.

Drug Approval Process. None of our drugs may be marketed in the U.S. until the drug has received FDA approval. The steps required before a drug may be marketed in the U.S. include:

- preclinical laboratory tests, animal studies, and formulation studies,
- submission to the FDA of an IND for human clinical testing, which must become effective before human clinical trials may begin,
- adequate and well-controlled human clinical trials to establish the safety and efficacy of the drug for each indication,
- submission to the FDA of an NDA,
- satisfactory completion of an FDA inspection of the manufacturing facility or facilities at which the drug is produced to assess compliance with cGMPs, and
- FDA review and approval of the NDA.

Preclinical tests include laboratory evaluation of product chemistry, toxicity, and formulation, as well as animal studies. The conduct of the preclinical tests and formulation of the compounds for testing must comply with federal regulations and requirements. The results of the preclinical tests, together with manufacturing information and analytical data, are submitted to the FDA as part of an IND, which must become effective before human clinical trials may begin. An IND will automatically become effective 30 days after receipt by the FDA, unless before that time the FDA raises concerns or questions about issues such as the conduct of the trials as outlined in the IND. In such a case, the IND sponsor and the FDA must resolve any outstanding FDA concerns or questions before clinical trials can proceed. We cannot be sure that submission of an IND will result in the FDA allowing clinical trials to begin.

Clinical trials involve the administration of the investigational drug to human subjects under the supervision of qualified investigators. Clinical trials are conducted under protocols detailing the objectives of the study, the parameters to be used in monitoring safety, and the effectiveness criteria to be evaluated. Each protocol must be submitted to the FDA as part of the IND.

Clinical trials typically are conducted in three sequential phases, but the phases may overlap or be combined. The study protocol and informed consent information for study subjects in clinical trials must also be approved by an Institutional Review Board for each institution where the trials will be conducted. Study subjects must sign an informed consent form before participating in a clinical trial. Phase I usually involves the initial introduction of the investigational drug into people to evaluate its short-term safety, dosage tolerance, metabolism, pharmacokinetics and pharmacologic actions, and, if possible, to gain an early indication of its

effectiveness. Phase II usually involves trials in a limited patient population to (i) evaluate dosage tolerance and appropriate dosage; (ii) identify possible adverse effects and safety risks; and (iii) evaluate preliminarily the efficacy of the drug for specific indications. Phase III trials usually further evaluate clinical efficacy and test further for safety by using the drug in its final form in an expanded patient population. There can be no assurance that phase I, phase II, or phase III testing will be completed successfully within any specified period of time, if at all. Furthermore, the Company or the FDA may suspend clinical trials at any time on various grounds, including a finding that the subjects or patients are being exposed to an unacceptable health risk.

The FDCA permits FDA and the IND sponsor to agree in writing on the design and size of clinical studies intended to form the primary basis of an effectiveness claim in an NDA application. This process is known as Special Protocol Assessment, or SPA. These agreements may not be changed after the clinical studies begin, except in limited circumstances.

Assuming successful completion of the required clinical testing, the results of the preclinical studies and of the clinical studies, together with other detailed information, including information on the manufacture and composition of the drug, are submitted to the FDA in the form of an NDA requesting approval to market the product for one or more indications. The testing and approval process requires substantial time, effort, and financial resources. The agencies review the application and may deem it to be inadequate to support the registration and we cannot be sure that any approval will be granted on a timely basis, if at all. The FDA may also refer the application to the appropriate advisory committee, typically a panel of clinicians, for review, evaluation and a recommendation as to whether the application should be approved. The FDA is not bound by the recommendations of the advisory committee.

The FDA has various programs, including fast track, priority review, and accelerated approval, that are intended to expedite or simplify the process for reviewing drugs, and/or provide for approval on the basis surrogate endpoints. Generally, drugs that may be eligible for one or more of these programs are those for serious or life-threatening conditions, those with the potential to address unmet medical needs, and those that provide meaningful benefit over existing treatments. We cannot be sure that any of our drugs will qualify for any of these programs, or that, if a drug does qualify, that the review time will be reduced.

Before approving an NDA, the FDA usually will inspect the facility or the facilities at which the drug is manufactured, and will not approve the product unless cGMP compliance is satisfactory. If the FDA evaluates the NDA and the manufacturing facilities as acceptable, the FDA may issue an approval letter, or in some cases, an approvable letter followed by an approval letter. Both letters usually contain a number of conditions that must be met in order to secure final approval of the NDA. When and if those conditions have been met to the FDA's satisfaction, the FDA will issue an approval letter. The approval letter authorizes commercial marketing of the drug for specific indications. As a condition of NDA approval, the FDA may require postmarketing testing and surveillance to monitor the drug's safety or efficacy, or impose other conditions.

After approval, certain changes to the approved product, such as adding new indications, making certain manufacturing changes, or making certain additional labeling claims, are subject to further FDA review and approval. Before we can market TRISENOX for additional indications, we must obtain additional approvals from FDA. Obtaining approval for a new indication generally requires that additional clinical studies be conducted. We cannot be sure that any additional approval for new indications for TRISENOX will be approved on a timely basis, or at all.

Post-Approval Requirements. TRISENOX was approved by the FDA under its accelerated approval process in September 2000. In order to secure this approval, we committed to completing several post-approval requirements, including the conduct of additional clinical studies. Should we fail to fulfill these obligations, the FDA may withdraw approval of TRISENOX. In addition, holders of an approved NDA are required to: (i) report certain adverse reactions to the FDA, (ii) comply with certain requirements concerning advertising and promotional labeling for their products, and (iii) continue to have quality control and manufacturing procedures

conform to cGMP after approval. The FDA periodically inspects the sponsor's records related to safety reporting and/or manufacturing facilities; this latter effort includes assessment of compliance with cGMP. Accordingly, manufacturers must continue to expend time, money, and effort in the area of production and quality control to maintain cGMP compliance. We use and will continue to use third party manufacturers to produce our products in clinical and commercial quantities, and future FDA inspections may identify compliance issues at our facilities or at the facilities of our contract manufacturers that may disrupt production or distribution, or require substantial resources to correct. In addition, discovery of problems with a product after approval may result in restrictions on a product, manufacturer, or holder of an approved NDA, including withdrawal of the product from the market.

TRISENOX was also approved in Europe by way of the centralized process and marketing authorization was granted by the EMEA "under exceptional circumstances." We have agreed to fulfill several post-approval commitments regarding TRISENOX. In addition, reporting of adverse reactions, compliance with certain requirements concerning advertising and promotional labeling and adherence to cGMP in the area of production and quality control is also required. Not completing these commitments or maintaining adherence to cGMP may result in similar actions as those described above for FDA, including withdrawal of TRISENOX.

Orphan Drug. The FDA may grant orphan drug designation to drugs intended to treat a "rare disease or condition," which generally is a disease or condition that affects fewer than 200,000 individuals in the United States. Orphan drug designation must be requested before submitting an NDA. If the FDA grants orphan drug designation, which it may not, the identity of the therapeutic agent and its potential orphan use are publicly disclosed by the FDA. Orphan drug designation does not convey an advantage in, or shorten the duration of, the review and approval process. If a product which has an orphan drug designation subsequently receives the first FDA approval for the indication for which it has such designation, the product is entitled to orphan exclusivity, meaning that the FDA may not approve any other applications to market the same drug for the same indication, except in certain very limited circumstances, for a period of seven years. Orphan drug designation does not prevent competitors from developing or marketing different drugs for that indication.

We have obtained orphan drug market exclusivity from the FDA for TRISENOX to treat patients with drug resistant or relapsed APL. We have also received orphan drug designation for TRISENOX for the treatment of patients with refractory multiple myeloma and MDS, CML, AML, CLL and HCC. However, TRISENOX may not receive an orphan drug marketing exclusivity for any of these indications, or any of our other drug products may not receive orphan drug exclusivity for any indication. Also, it is possible that our competitors could obtain approval, and attendant orphan drug exclusivity, for products that would preclude us from marketing our products for specified indications for some time.

Non-United States Regulation. Before our products can be marketed outside of the United States, they are subject to regulatory approval similar to that required in the United States, although the requirements governing the conduct of clinical trials, including additional clinical trials that may be required, product licensing, pricing and reimbursement vary widely from country to country. No action can be taken to market any product in a country until an appropriate application has been approved by the regulatory authorities in that country. The current approval process varies from country to country, and the time spent in gaining approval varies from that required for FDA approval. In certain countries, the sales price of a product must also be approved. The pricing review period often begins after market approval is granted. Even if a product is approved by a regulatory authority, satisfactory prices may not be approved for such product.

In Europe, marketing authorizations may be submitted at a centralized, a decentralized or national level. The centralized procedure is mandatory for the approval of biotechnology products and provides for the grant of a single marketing authorization that is valid in all EU members states. As of January 1995, a mutual recognition procedure is available at the request of the applicant for all medicinal products that are not subject to the centralized procedure. There can be no assurance that the chosen regulatory strategy will secure regulatory approvals on a timely basis or at all.

Environmental Regulation

In connection with our research and development activities, we are subject to federal, state and local laws, rules, regulations and policies governing the use, generation, manufacture, storage, air emission, effluent discharge, handling and disposal of certain materials, biological specimens and wastes. Although we believe that we have complied with these laws, regulations and policies in all material respects and have not been required to take any significant action to correct any noncompliance, we may be required to incur significant costs to comply with environmental and health and safety regulations in the future. Our research and development involves the controlled use of hazardous materials, including, but not limited to, certain hazardous chemicals and radioactive materials. Although we believe that our safety procedures for handling and disposing of such materials comply with the standards prescribed by state and federal regulations, the risk of accidental contamination or injury from these materials cannot be eliminated. In the event of such an accident, we could be held liable for any damages that result and any such liability could exceed our resources.

Employees

As of February 29, 2004, we employed 372 individuals, including 261 in the U.S. and 111 in Europe. In the U.S., 76 employees hold doctoral or other advanced degrees while 55 hold doctoral or other advanced degrees in Europe. Our U.S. employees do not have a collective bargaining agreement. Our European employees are subject to a collective bargaining agreement. We consider our relations with our employees to be good.

Information regarding our executive officers is set forth in Item 10 of this Report, which information is incorporated herein by reference.

Factors Affecting Our Future Operating Results

This annual report on Form 10-K contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including the risks faced by us described below and elsewhere in this annual report on Form 10-K.

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

We were incorporated in 1991 and have incurred a net operating loss every year. As of December 31, 2003, we had an accumulated deficit of approximately $470.5 million, not including losses of Novuspharma. We may never become profitable, even if we are able to commercialize additional products. We will need to conduct significant research, development, testing and regulatory compliance activities that, together with projected general and administrative expenses, we expect will result in substantial increasing operating losses for at least the next couple of years. Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis.

If we do not successfully develop additional products, we may be unable to generate significant revenue or become profitable.

We have only one product, TRISENOX, for relapsed or refractory APL that has received marketing approval to date. Our leading drug candidates, TRISENOX for other indications, XYOTAX, pixantrone and CT-2106, are currently in clinical trials and may not be successful. Even if our drugs progress successfully through initial human testing, they may fail in later stages of development. Many drugs in human clinical trials fail to demonstrate the desired safety and efficacy characteristics. 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. For example, in our first phase III human trial for lisofylline, completed in March 1998, we failed to meet our two primary endpoints, or goals, even though we met our endpoints in two earlier phase II trials for lisofylline. As a result, we are no longer developing lisofylline as a potential product. Many of our drug candidates are still in research and pre-clinical development, which means that they have not

yet been tested on humans. We will need to commit significant time and resources to develop these and additional product candidates. 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.

We may need to raise additional funds in the future, and they may not be available on acceptable terms, or at all.

We expect that our existing and anticipated capital resources will enable us to maintain our planned operations through at least the first half of 2005. We expect to receive certain grants and subsidized loans from the Italian government and the EU through our Italian branch into which Novuspharma's operating assets and liabilities will be contributed. However, we may not receive the relevant funding because the grants and subsidies are awarded at the discretion of the relevant authorities.

Beyond the first half of 2005, or if our plans or assumptions change or are inaccurate, we will have to raise additional funds to continue the development of our technologies and complete the commercialization of products, if any, resulting from our technologies. We may raise such capital through public or private equity financings, partnerships, debt financings, bank borrowings or other sources.

Additional funding may not be available on favorable terms or at all. If adequate funds are not otherwise available, we may curtail operations significantly, including the delay, modification or cancellation of research and development programs aimed at bringing new products to market. 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. To the extent that additional capital is raised through the sale of equity, or securities convertible into equity, you may experience dilution of your proportionate ownership of us.

Our operations in Italy make us subject to increased risk regarding currency exchange rate fluctuations.

As a result of our merger with Novuspharma and our consequent operations in Italy, we are exposed to risks associated with foreign currency transactions insofar as we might desire to use U.S. dollars to make contract payments denominated in Euros or vice versa. As the net positions of our foreign currency transactions might fluctuate, our earnings might be negatively affected. In addition, as a result of our merger with Novuspharma, we are exposed to risks associated with the translation of Novuspharma's Euro-denominated financial results and balance sheet into United States dollars. Our reporting currency will remain as the United States dollar, however, a portion of our consolidated financial obligations will arise in Euros. In addition, the carrying value of some of our assets and liabilities will be affected by fluctuations in the value of the United States dollar as compared to the Euro. Changes in the value of the United States dollar as compared to the Euro might have an adverse effect on our reported results of operations and financial condition.

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, both on its own terms, and as compared to the other principal drugs on the market that have the same therapeutic indication. 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.

We may not obtain authorization to permit product candidates that are already in the pre-clinical development phase to enter the human clinical testing phase. Authorized pre-clinical or clinical testing may not be completed successfully within any specified time period by us, or without significant additional resources or expertise to those originally expected to be necessary. Many drugs in human clinical trials fail to demonstrate the desired safety and efficacy characteristics. Clinical testing may not show potential products to be safe and efficacious and potential products may not be approved for a specific indication. Further, the results from pre-clinical studies and early clinical trials may not be indicative of the results that will be obtained in later-stage clinical trials. Data obtained from clinical trials are susceptible to varying interpretations. Government regulators and our collaborators may not agree with our interpretation of our future clinical trial results. In addition, we or regulatory authorities may suspend clinical trials at any time on the basis that the participants are being exposed to unacceptable health risks. Completion of clinical trials depends on, among other things, the number of patients available for enrollment in a particular trial, 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 co-operative 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 or complete, or experience delays in any of our present or planned clinical trials, including the Phase III clinical trials of XYOTAX, the Phase II clinical trials of TRISENOX and the Phase II and Phase III clinical trials of pixantrone, our ability to conduct our business as planned could be harmed. Our development costs may increase if we experience any future delays in our clinical trials for XYOTAX, TRISENOX, pixantrone or our other product candidates or if we need to perform more or larger clinical trials than planned. If delays or costs are significant, our financial results and our ability to commercialize our product candidates may be adversely affected.

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. With the exception of TRISENOX for patients with APL who have relapsed or failed standard therapies, all of our compounds currently are in research or development, and none has been submitted for marketing approval. Our other compounds may not enter human clinical trials on a timely basis, if at all, and we may not develop any product candidates suitable for commercialization.

Prior to commercialization, each product candidate will require significant additional research, development and pre-clinical 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 pre-clinical 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.

The occurrence of any of these events could adversely affect the commercialization of our products. Any 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 fail to establish and maintain collaborations or if our partners do not perform, we may 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 have entered into an agreement with Chugai Pharmaceutical Co., Ltd. to develop and commercialize XYOTAX in several Asian markets. 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.

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;
- 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;
- 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 novel technologies, we may never develop them into commercial products.

We base many of our product candidates upon novel delivery technologies that we are using to discover and develop drugs for the treatment of cancer. These technologies have not been proven. Furthermore, pre-clinical 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 may not develop into commercial products.

We may face difficulties in achieving acceptance of our products in the market if we do not continue to expand our sales and marketing infrastructure.

We currently are marketing TRISENOX with our direct sales force. Competition for these individuals is intense, and in the event we need additional sales personnel, we may not be able to hire individuals with the

experience required or number of sales personnel we need. In addition, if we market and sell products other than TRISENOX, we may need to further expand our marketing and sales force with sufficient technical expertise and distribution capacity. If we are unable to expand our direct sales operations and train new sales personnel as rapidly as necessary, we may not be able to increase market awareness and sales of our products, which may prevent us from growing our revenues and achieving and maintaining profitability.

If any of our license agreements for intellectual property underlying TRISENOX, XYOTAX, pixantrone or any other products are terminated, we may lose our rights to develop or market that product.

We have licensed intellectual property, including patent applications from The Memorial Sloan-Kettering Cancer Center, Samuel Waxman Cancer Research Foundation, Beijing Medical University, The University of Vermont, Hoffman La Roche and others, including the intellectual property relating to TRISENOX and pixantrone. We have also in-licensed the intellectual property relating to our drug delivery technology that uses polymers that are linked to drugs, known as polymer-drug conjugates, including XYOTAX and CT-2106. 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 agreements, we may lose our right to market and sell any products based on the licensed technology.

If we fail to protect adequately 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 drugs to biodegradable polymers. For example, XYOTAX 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 our polymer-drug conjugates and we may be challenged by the holder of a patent covering the underlying drug.

The patent position of biopharmaceutical firms generally is highly uncertain and involves complex legal and factual questions. The United States 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 our orphan drug designations in the United States or EU, which are designations for products meeting criteria based on the size of the potential United States or EU patient population for a drug, respectively, and which entitle that drug to seven years of exclusive rights in the United States market or ten years in the EU market, as applicable, or 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 on the intellectual property rights of others, which may cause us to engage in costly litigation and, if we are not successful, could cause us to pay substantial damages and prohibit us from selling our products.

We attempt to monitor the patent filings 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. We may not be able to successfully challenge the validity of these patents and could have to pay substantial damages, possibly including treble damages, for past infringement 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.

If we are unable to enter into new 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. Substantially all of our product candidates in clinical development are in-licensed from a third party, including TRISENOX, XYOTAX and pixantrone. 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 be unable to obtain the raw materials necessary to produce our XYOTAX 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 XYOTAX, including paclitaxel, in adequate volume and quality. Paclitaxel is derived from certain varieties of yew trees. Supply of paclitaxel is controlled by a limited number of companies. We purchase the majority of the paclitaxel we need from a single vendor. We also purchase the raw material polyglutamic acid from a single source on a purchase order basis. Should the paclitaxel or polyglutamic acid purchased from our sources prove to be insufficient in quantity or quality, or should these relationships terminate, we may not be able to obtain a sufficient supply from alternate sources on acceptable terms, or at all.

Our dependence on third party manufacturers means that we may not have sufficient control over the manufacture of our products.

We do not currently have internal facilities for the cGMP manufacture of any of our development or commercial products. In addition, TRISENOX, our first commercial product, is currently manufactured by a single vendor. In 2002, we began the process of qualifying an additional supplier for our finished product manufacturing for TRISENOX. This additional supplier received FDA approval to manufacture TRISENOX in June 2003. Because we do not directly control our suppliers, these vendors may not be able to provide us with

finished product when we need it. Plans are in place to develop additional manufacturing resources, such as entering into collaborative arrangements with other parties that have established manufacturing capabilities or elect to have other additional third parties manufacture our products on a contract basis.

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 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 may at times violate cGMPs. The FDA and other regulatory authorities may take action against a contract manufacturer who violates cGMPs. Such actions may include requiring the contract manufacturer to cease its manufacturing activities.

Another one of our products under development, XYOTAX, has a complex manufacturing process, 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.

We are subject to extensive government regulation, including the requirement of approval before our products may be marketed.

Regulatory agencies have approved only one of our products, TRISENOX, for sale in the United States and the EU, to treat patients with a type of blood cancer called APL who have relapsed or failed standard therapies. Before we can market TRISENOX for other indications in the United States, or EU, we must obtain additional FDA approval and/or approval of the EMEA. Our other products are in development, and will have to be approved by the FDA before they can be marketed in the United States and by the EMEA before they can be marketed in the EU. Obtaining FDA or other national regulatory approval requires substantial time, effort and financial resources, and we may not obtain approval on a timely basis, if at all. If the FDA or the EMEA do not approve our developmental products and any additional indications for marketed products in a timely fashion, or does not approve them at all, our business and financial condition may be adversely affected.

In addition, we and our currently marketed product and our product candidates are subject to comprehensive regulation by the FDA and the EMEA. Regulation by the FDA and EMEA begins before approval for marketing is granted and continues during the life of each product. For example, TRISENOX was approved for its current indication by the FDA under its accelerated approval process and by the EMEA "under exceptional circumstances," and we committed to completing several post-approval requirements to both the FDA and the EMEA, including the conduct of additional clinical studies. If we fail to fulfill these obligations, the FDA or EMEA may withdraw approval of TRISENOX. In addition, the FDA and other regulatory authorities regulate, for example, research and development, including pre-clinical and clinical testing, safety, effectiveness, manufacturing, labeling, advertising, promotion, export, and marketing of our products. Manufacturing processes must conform to 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. Also, a drug may not be promoted for other than its approved indication, and the FDA, EMEA and other regulatory authorities may institute enforcement actions against companies that do so. Our failure to comply with this or other FDA or other regulatory requirements may result in various adverse consequences, including possible delay in approval or refusal to approve a product, recalls, seizures, withdrawal of an approved product from the market, and/or the imposition of civil or criminal sanctions.

Additionally, we are subject to numerous regulations and statutes regulating the manner of selling and obtaining reimbursement for our products that receive marketing approval. 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 CTI or its 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.

As a result of our merger with Novuspharma, we are required to comply with the regulatory structure of Italy, which could result in administrative challenges.

As a result of our merger with Novuspharma, our operations now need to comply not only with applicable laws of and rules of the United States, including Washington law and the rules and regulations of the Securities and Exchange Commission and the Nasdaq National Market, but also the EU legal system and the Republic of Italy, including the rules and regulations of CONSOB and Borsa Italiana, which collectively regulate companies listed on Italy's public markets such as the Nuovo Mercato. Conducting our operations in a manner that complies with all applicable laws and rules will require 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 regulatory regimes.

As a result of our merger with Novuspharma, we are subject to new legal duties and additional political and economic risks related to our operations in Italy.

As a result of our merger with Novuspharma, a portion of our business is based in Italy. We are subject to duties and risks arising from doing business in Italy, such as:

- Italian employment law, including collective bargaining agreements negotiated at the national level and over which we have no control;
- EU data protection regulations, under which we will be unable to send private personal data, including many employment records and some clinical trial data, from our Italian offices to our United States offices until our United States offices self-certify their adherence to the safe harbor framework established by the United States Department of Commerce in consultation with the European Commission;
- tariffs, customs, duties and other trade barriers; and
- capital controls, terrorism and other political risks.

These risks related to doing business in Italy could harm the results of our operations.

Uncertainty regarding third party reimbursement and health care cost containment initiatives may limit our returns.

The ongoing efforts of governmental and third party payors to contain or reduce the cost of health care may affect our ability to commercialize our products successfully. Governmental and other third party payors are increasingly attempting to contain health care 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 trend toward managed health care in the United States, the growth of organizations such as health maintenance organizations, and legislative proposals to reform healthcare and government insurance programs 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.

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. While we cannot predict whether any such legislative or regulatory proposals will be adopted, the adoption of such proposals could make it difficult or impossible to sell our products. TRISENOX has been reimbursed by third party payors, but there is no guarantee this reimbursement will continue.

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 industry 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 our markets. 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 XYOTAX to market, we will face direct competition from oncology-focused multinational corporations. XYOTAX will compete with other taxanes, which are drugs that inhibit cell growth by stopping cell division and are widely used as treatments for cancer. Many oncology-focused multinational corporations currently market or are developing taxanes, epothilones, which inhibit cancer cells by a mechanism similar to taxanes, or similar products (including, among others, Bristol-Myers Squibb Co., which markets paclitaxel, one of the best-selling cancer drugs, Aventis, which markets docetaxel. In addition, several companies, including American Pharmaceutical Partners, NeoPharm Inc. and Sonus Pharmaceuticals are also developing novel taxanes and formulations which could compete with our products.
- In the hematology market, we hope to receive approval to market TRISENOX to larger indications than currently authorized. We will face competition from a number of biopharmaceutical companies, including:
  - — Celgene Corporation, which currently sells thalidomide used in the treatment of multiple myeloma, a cancer of the bone marrow, and is developing ImiDs™;
  - — Millennium Pharmaceuticals, Inc., which recently launched Velcade® for treatment of multiple myeloma;
  - — Pharmion Corporation, which has signed an agreement with Celgene to expand internationally the marketing of thalidomide and is developing 5-Azacytidine for MDS also known as ‘smoldering’ leukemia or preleukemia, which are a group of diseases in which the bone marrow does not function normally, and insufficient numbers of mature blood cells are in circulation; and
  - — SuperGen Corporation, which is developing decitabine, which is in phase III studies in MDS.
- Because pixantrone is intended to provide less toxic treatment to patients who have failed standard chemotherapy treatment, if pixantrone is brought to market, it is not expected to compete directly with many existing chemotherapy drugs. However, pixantrone 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, including vincristine sulfate liposome for injection, a product being developed by Inex Pharmaceuticals Corporation (“Inex”) that is currently in late stage clinical trials. In January 2004, Enzon Pharmaceuticals (“Enzon”) entered into a partnership with Inex in which Enzon received exclusive North American commercialization rights for Inex’s vincristine product for all indications.

Many of our competitors, either alone or together with their collaborators and in particular, the multinational pharmaceutical companies, have substantially greater financial resources and 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, to be less expensive, to have fewer side effects or to be easier to administer than ours. In any such case, sales of our products or eventual products would likely suffer and we might never recoup the significant investments we are making to develop these product candidates.

If we lose our key personnel or we are unable to attract and retain additional personnel, we may be unable to pursue collaborations or develop our own products.

We are highly dependent on Dr. James A. Bianco, our president and chief executive officer, Dr. Jack W. Singer, our chief medical officer and Silvano Spinelli, our executive vice president of development and managing director of European operations. The loss of any one of these principal members of our scientific or management staff, or failure to attract or retain other key scientific employees, could prevent us from pursuing collaborations or developing and commercializing our products and core technologies. Recruiting and retaining qualified scientific personnel to perform research and development work are critical to our success. There is intense competition for qualified scientists and managerial personnel from numerous pharmaceutical and biotechnology companies, as well as from academic and government organizations, research institutions and other entities. In addition, we will rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating our research and development strategy. All of our consultants and advisors will be employed by other employers or are self-employed, and will have commitments to or consulting or advisory contracts with other entities that may limit their availability to us.

The integration of Novuspharma's business and operations will be a challenging, complex, time-consuming and expensive process and may disrupt our business if not completed in a timely and efficient manner.

The challenges involved in the integration of Novuspharma include the following:

- effectively pursuing the clinical development and regulatory approvals of all product candidates while effectively marketing our current approved product (TRISENOX);
- successfully commercializing products under development and increasing revenues from TRISENOX;
- retaining certain existing strategic partners;
- retaining and integrating management and other key employees;
- coordinating research and development activities to enhance introduction of new products and technologies;
- integrating purchasing and procurement operations in multiple locations;
- maintaining an adequate level of liquidity to fund our continuing operations and expansion;
- integrating the business culture of Novuspharma with our culture and maintaining employee morale;
- transitioning all facilities to a common information technology system;
- developing and maintaining uniform standards, controls, procedures and policies relating to financial reporting and employment related matters that comply with both United States and Italian laws and regulations;
- maintaining adequate focus on the core business of the combined company while integrating operations;
- maintaining relationships with employees, strategic partners, manufacturers and suppliers while integrating management and other key personnel;
- realizing the benefits and synergies to the extent or in the time frame anticipated; and
- coping with unanticipated expenses related to integration.

We may not succeed in addressing these challenges or any other problems encountered in connection with integration following the merger, which may be exacerbated by the geographic separation of our operations in the United States and in Italy. If management is not able to address these challenges, we may not achieve the anticipated benefits of the merger, which may have a material adverse effect on our business and could result in the loss of key personnel.

Our limited operating experience may cause us difficulty in managing our growth and could seriously harm our business.

As a result of additional trials for TRISENOX for indications other than relapsed or refractory APL and clinical trials currently underway for XYOTAX, pixantrone and our other products in development, we have expanded our operations in various areas, including our management, regulatory, clinical, financial and information systems and other elements of our business process infrastructure. We may need to add additional key personnel in these areas. In addition, as growth occurs, it may strain our operational, managerial and financial resources. We may not be able to increase revenues or control costs unless we continue to improve our operational, financial, regulatory and managerial systems and processes, and expand, train and manage our work force.

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 product use in our clinical trials, and currently have product liability insurance for TRISENOX, it is possible that we will not be able to maintain such insurance on acceptable terms or that any insurance obtained will 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 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 state and federal 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.

Our stock price is extremely volatile, which may affect our ability to raise capital in the future.

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 twelve months ended December 31, 2003, our stock price ranged from a low of $5.18 to a high of $15.70. Fluctuations in the trading price or liquidity of our common stock may adversely affect our ability to raise capital through future equity financings.

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

- announcements of technological innovations or new commercial therapeutic products by us, our collaborative partners or our present or potential competitors;
- our quarterly operating results;
- announcements by us or others of results of pre-clinical testing and clinical trials;
- developments or disputes concerning patent or other proprietary rights;
- developments in our relationships with collaborative partners;
- our success in integrating the business and operations of Novuspharma;
- acquisitions;
- litigation and government proceedings;
- adverse legislation, including changes in governmental regulation and the status of our regulatory approvals or applications;
- third-party reimbursement policies;
- changes in securities analysts' recommendations;
- changes in health care policies and practices;
- economic and other external factors; and
- 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. If a securities class action suit is filed against us, we would incur substantial legal fees and our management's attention and resources would be diverted from operating our business in order to respond to the litigation.

Our charter documents contain provisions that may prevent or delay removal of incumbent management or a change of control.

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

- a classified board so that only one third of the 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 bylaws without shareholder approval;

- the ability of our board of directors to issue up to 10,000,000 shares of preferred stock without shareholder approval upon the terms and conditions and with the rights, privileges and preferences as the board of directors may determine; and
- a shareholder rights plan.

In addition, as a Washington corporation, we are subject to Washington law, including Chapter 23 of the Washington Business Corporations Act, which prohibits public companies from engaging in some business combinations without the approval of a majority of the votes within each voting group entitled to vote separately on the transaction.

These provisions, alone or together, could have the effect of deterring or delaying changes in incumbent management, proxy contests or changes in control.

Item 2. Properties

We lease approximately 68,000 square feet of space at 201 Elliott Avenue West in Seattle, Washington for our laboratory and administrative operations. The lease expires in January 2008, with a one five-year renewal option at the then prevailing market rent. We also lease approximately 110,000 square feet of space at 501 Elliott Avenue West in Seattle, Washington for our executive offices and administrative operations. The lease expires in July 2012. To accommodate the operational requirements of our wholly-owned subsidiaries, Cell Therapeutics (UK) Limited and Cell Therapeutics Corporate Development, Inc., we leased additional space in London, UK and Hillsboro, Oregon, respectively. CTI (Europe), our newly acquired European branch, leases approximately 75,000 square feet of office and laboratory space in Bresso (Milan), Italy. We believe our existing and planned facilities are adequate to meet our present requirements. We currently anticipate that additional space will be available to us, when needed, on commercially reasonable terms.

Item 3. Legal Proceedings

On February 10, 2004, Micromet AG ("Micromet"), a German company, filed a complaint against the Company in federal district court in Washington, asserting that CTI (Europe), the Company's European Branch (formerly known as Novuspharma S.p.A.), had purportedly breached a contract with Micromet for the development of a drug candidate known as MT-201. The alleged breach is based on the assertion that CTI (Europe) failed to pay for certain milestones and development expenses owed under the contract. On February 23, 2004, the Company answered the complaint, denying the substance of the allegations, and filing counterclaims for breach of contract and for rescission of the contract based on Micromet's misrepresentations and failures to disclose material information. The Company believes that Micromet's complaint is without merit and intends to vigorously defend against the Micromet action, as well as to seek recovery based upon its counterclaims.

Item 4. Submission of Matters to a Vote of Security Holders

(a) On October 23, 2003, we held a Special Meeting of Shareholders (the "Special Meeting"). Each share of Common Stock was entitled to one vote per share.

(b) Not applicable.

(c) At the Special Meeting, our shareholders approved the merger between Cell Therapeutics, Inc. and Novuspharma, S.p.A. (the "Proposal"). With respect to the Proposal, the total votes cast represented over 50% of all shares of our common stock entitled to vote on the Proposal. There were 18,884,647 votes cast for the Proposal, 164,358 votes cast against the Proposal and 17,158 abstentions.

The foregoing Proposal is described in detail in the Company's definitive proxy statement/prospectus filed by CTI on September 22, 2003 for the Special Meeting. No other matters were voted on at the Special Meeting.

(d) Not applicable.

PART II

Item 5. Market for Registrant's Common Equity and Related Shareholder Matters

Our common stock is traded on the Nasdaq National Market under the symbol "CTIC." The following table sets forth, for the periods indicated, the high and low reported sales prices per share of the common stock as reported on the Nasdaq National Market.

	High	Low
2002		
First Quarter	27.45	19.31
Second Quarter	25.50	4.57
Third Quarter	5.89	2.68
Fourth Quarter	9.85	3.85
2003		
First Quarter	8.89	5.18
Second Quarter	15.70	7.76
Third Quarter	13.76	9.35
Fourth Quarter	12.49	7.49
2004		
First Quarter (through March 4, 2004)	10.25	8.30

On March 4, 2004, the last reported sale price of our common stock on the Nasdaq Market was $8.70 per share. As of March 4, 2004, there were approximately 255 shareholders of record of our common stock.

Effective January 2, 2004, we commenced the trading of our common stock on the Nuovo Mercato in Italy under the ticker symbol (CTIC).

Dividend Policy

We have not declared or paid any cash dividends on our capital stock since our inception. We currently intend to retain all of our cash and any future earnings to finance the growth and development of our business and therefore do not anticipate paying any cash dividends in the foreseeable future. Any future determination to pay cash dividends will be at the discretion of the Board of Directors and will be dependent upon our consolidated financial condition, results of operations, capital requirements and such other factors as the Board of Directors deems relevant.

Sales of Unregistered Securities

None.

Equity Compensation Plan Information

The following table gives information about our common stock that may be issued upon the exercise of options, warrants, and rights under all of our existing compensation plans as of December 31, 2003, including the 2003 Equity Incentive Plan, 1994 Equity Incentive Plan and the 1996 Employee Stock Purchase Plan.

Plan Category	(a) Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights	(b) Weighted Average Exercise Price of Outstanding Options, Warrants, and Rights	(c) Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column (a))	(d) Total of Securities Reflected in Columns (a) and (c)
Plans Approved by Shareholders	5,909,115(1)	$ 15.45	492,807(2)	6,401,922
Plans Not Approved by Shareholders	702,790(3)	$ 13.57	None	702,790
Plans Not Approved by Shareholders (Novuspharma)	201,800(4)	$ 9.68	148,200	350,000

(1) Consists of the 2003 Equity Incentive Plan and the 1994 Equity Incentive Plan.
(2) Consists of 249,089 shares available for future issuance under the 2003 Equity Incentive Plan and 243,718 shares available for future issuance under the 1996 Employee Stock Purchase Plan.
(3) Consists of warrants to purchase 350,000 shares and 103,665 restricted share rights issued in connection with a license agreement with PG-TXL Company, L.P., warrants to purchase 149,125 shares issued to placement agents in connection with private placements of our stock, and warrants to purchase 100,000 shares issued in connection with a research services agreement with The Hope Heart Institute.
(4) Consists of options issued in 2004 in connection with the merger between CTI and Novuspharma.

Cell Therapeutics, Inc. Novuspharma S.p.A. Stock Option Plan

In December 2003, the Board of Directors approved the assumption and amendment and restatement of the Cell Therapeutics, Inc. Novuspharama S.p.A. Stock Option Plan (the "Plan") in connection with the merger between CTI and Novuspharma. The Plan provides for the grant of nonqualified stock options and restricted stock to certain of our (and our affiliates) officers, employees, members of our Board of Directors, and consultants. The plan administrator determines, on a grant-by-grant basis, what terms and conditions apply to options and restricted stock granted under the Plan (including vesting restrictions). The Plan permits options to be exercised with cash or certain other legal forms of consideration. In the event of our change of control (including our merger with or into another corporation or our sale of substantially all of our assets), the Plan provides that we may determine, in our discretion, that each optionee may vest in his or her option or restricted stock award with respect to any or all of the shares subject to the award (including shares that were unvested prior to the change of control) and that such awards may otherwise be assumed or substituted for by the successor corporation. There are 350,000 shares of common stock reserved under the Plan, and 148,200 shares remain for future issuance.

License Agreement with PG-TXL Company, L.P.

In 1998, we issued warrants to purchase 350,000 shares of our common stock in connection with a license agreement with PG-TXL Company, L.P. These warrants expire in 2008 and have an exercise price of $20.00. We also issued 103,665 restricted share rights to non-employees for which ownership vests upon the achievement of future events.

Warrants Issued to Placement Agents

In 1999, we completed a $10 million private placement of 10,000 shares of Series D convertible preferred stock and warrants to acquire 1,523,810 shares of common stock. In connection with the offering, we issued warrants to purchase shares of common stock to a placement agent. These warrants expire in 2004, and have an exercise price of $2.38.

In 2000, we completed a $40 million private placement of 3,333,334 shares of common stock. In connection with the offering, we issued warrants to purchase shares of common stock to a placement agent and finder. These warrants expire in 2005, and have an exercise price of $13.20.

Research Services Agreement with The Hope Heart Institute

In 2002, we entered into an agreement with The Hope Heart Institute for research services. In connection with this agreement, we issued fully-vested warrants to purchase shares of common stock at an exercise price of $10.00. These warrants expire in 2007.

Item 6. Selected Consolidated Financial Data

The data set forth below should be read in conjunction with Item 7. "Management's Discussion and Analysis of Consolidated Financial Condition and Results of Operations" and the Consolidated Financial Statements and Notes thereto appearing at Item 8 of this report.

	Year ended December 31,				
	2003	2002	2001	2000	1999
	(In thousands, except per share data)				
Consolidated Statements of Operations Data:					
Revenues:					
Product sales	$ 22,105	$ 11,393	$ 6,130	$ 502	$ —
License and contract revenue	2,660	5,503	106	—	—
Total revenues	24,765	16,896	6,236	502	—
Operating expenses:					
Cost of product sold	840	423	394	19	—
Research and development(1)	89,534	58,759	44,669	26,574	27,682
Selling, general and administrative	55,641	49,800	35,268	20,421	9,788
Amortization of purchased intangibles	1,335	6,701	9,390	9,390	—
Total operating expenses	147,350	115,683	89,721	56,404	37,470
Loss from operations	(122,585)	(98,787)	(83,485)	(55,902)	(37,470)
Other income (expense):					
Investment income	1,880	4,819	9,200	4,517	1,692
Interest expense	(9,326)	(11,240)	(5,988)	(544)	(502)
Gain on exchange of convertible subordinated notes	—	55,305	—	—	—
Net loss	(130,031)	(49,903)	(80,273)	(51,929)	(36,280)
Preferred stock dividend	—	—	(1,372)	(508)	(5,201)
Net loss applicable to common shareholders	$(130,031)	$ (49,903)	$ (81,645)	$ (52,437)	$ (41,481)
Basic and diluted net loss per common share(2)	$ (3.89)	$ (1.48)	$ (2.41)	$ (2.07)	$ (2.67)
Shares used in computation of basic and diluted net loss per common share	33,418	33,763	33,822	25,345	15,552

	December 31,				
	2003	2002	2001	2000	1999
	(In thousands)				
Consolidated Balance Sheets Data:					
Cash, cash equivalents, securities available-for-sale and interest receivable	$ 92,838	$ 142,157	$ 259,421	$ 156,434	$ 24,248
Working capital	71,898	129,849	250,142	146,384	17,705
Total assets	146,090	186,780	303,750	190,111	30,848
5.75% Convertible senior subordinated notes(3)	85,459	85,460	—	—	—
4.0% Convertible senior subordinated notes(4)	75,000	—	—	—	—
5.75% Convertible subordinated notes(5)	29,640	29,640	175,000	—	—
Other long-term obligations, less current portion	5,012	6,704	3,892	1,060	2,653
Accumulated deficit	(470,486)	(340,455)	(290,552)	(210,279)	(158,350)
Total shareholders' equity (deficit)	(82,542)	43,483	109,557	177,943	20,904

(1) Amount in 2001 includes an equity-based expense of $9.2 million related to the issuance of warrants to purchase 350,000 shares of common stock for the achievement of a XYOTAX milestone.

(2) See Notes 1 and 11 of Notes to Consolidated Financial Statements for a description of the computation of the number of shares and net loss per common share.

(3) The 5.75% convertible senior subordinated notes are convertible into shares of CTI common stock at a conversion rate of 100 shares of common stock per $1,000 principal amount of the notes, which is equivalent to a conversion price of $10.00 per share.

(4) The 4.0% convertible senior subordinated notes are convertible into shares of CTI common stock at a conversion rate of 74.0741 shares of common stock per $1,000 principal amount of the notes, which is equivalent to a conversion price of approximately $13.50 per share.

(5) The 5.75% convertible subordinated notes are convertible into shares of CTI common stock at a conversion rate of 29.4118 shares of common stock per $1,000 principal amount of the notes, which is equivalent to a conversion price of approximately $34.00 per share.

Item 7. Management's Discussion and Analysis of Consolidated Financial Condition and Results of Operations

The following discussion should be read in conjunction with the "Selected Financial Data" and the Consolidated Financial Statements and the related Notes included in Items 6 and 8 of this Form 10-K. The following discussion contains forward-looking statements that involve risks and uncertainties. Such statements, which include statements concerning research and development expenses, selling, general and administrative expenses, additional financings and additional losses, are subject to risks and uncertainties, including, but not limited to, those discussed below and elsewhere in this Form 10-K, particularly in "Factors Affecting Our Operating Results," that could cause actual results to differ significantly from those projected.

Overview

We develop, acquire and commercialize novel treatments for cancer. Our goal is to build a leading, vertically-integrated biopharmaceutical company with a diversified portfolio of proprietary oncology drugs. Our research and in-licensing activities are concentrated on identifying new, less toxic and more effective ways to treat cancer. As of December 31, 2003, we had incurred aggregate net losses of approximately $470.5 million since inception, not including losses of Novuspharma. We expect to continue to incur significant additional operating losses over the next couple of years from our research and development efforts.

On January 1, 2004, we completed our acquisition of Novuspharma, an Italian-public biopharmaceutical company focused on oncology. At the time of the merger, approximately 15,629,000 shares of CTI common stock were issued based on the conversion of approximately 6,379,000 outstanding Novuspharma ordinary shares multiplied by the fixed exchange ratio of 2.45. The total cost of the merger is estimated to be approximately $196.3 million. This acquisition provided us worldwide rights to pixantrone, approximately $92.5 million of cash and cash equivalents, a high-quality drug discovery organization and staff with an extensive track record in cancer drug development. The Novuspharma acquisition and pixantrone are consistent with our strategy of growth by strategic acquisition and our goal to develop improved cancer therapies.

XYOTAX

In June 1998, we entered into an agreement with PG-TXL Company, L.P. and scientists at the M.D. Anderson Cancer Center, granting us an exclusive worldwide license to the rights to PG-TXL, and to all potential uses of PG-TXL's polymer technology. PG-TXL is paclitaxel linked to polyglutamate, and is branded as XYOTAX™. Under the terms of the agreement, we will fund the research, development, manufacture, marketing and sale of drugs developed using PG-TXL's polymer technology. We will be obligated to make future milestone payments upon the attainment of significant achievements, as defined in the agreement, of up to $15.5 million, and royalty payments on net product sales. As of December 31, 2003, we have made $5.0 million in milestone payments.

In September 2001, we entered into a supply agreement with Natural Pharmaceuticals, Inc. for paclitaxel, a key starting material for our XYOTAX drug candidate. Under the supply agreement, we purchased paclitaxel at a pre-determined price and expect to receive supply through 2004.

In October 2001, we entered into a licensing agreement with Chugai Pharmaceutical Co., Ltd., or Chugai, for the development and commercialization of XYOTAX. This agreement grants an exclusive license to Chugai to develop and commercialize XYOTAX in several Asian markets. Upon execution of the agreement, Chugai paid us a $3.0 million initial payment, which has been recorded as deferred revenue and is being recognized as license revenue over the development period of approximately six years on a straight-line basis. Under the agreement, we received and recognized as revenue a $3.0 million milestone payment during 2002, we may also receive future milestone payments totaling up to $13.0 million upon Chugai's achievement of certain product development milestones, and we are entitled to receive royalties on product sales in the territories covered under

the agreement. Chugai has also committed to incur up to $54.0 million in development expenditures over the course of the licensing agreement.

In 2002, we initiated a XYOTAX phase III clinical trial for second-line treatment of NSCLC, and two additional phase III trials of XYOTAX in the front line treatment of poor performance status patients with NSCLC.

In November 2002, we announced that the GOG plans to conduct a phase III trial of XYOTAX in treatment of ovarian cancer. The GOG plans to submit a protocol under the FDA's special protocol assessment and the trial is expected to begin in the first half of 2004. In June 2003, we received fast track designation from the FDA for our XYOTAX pivotal trials in PS2 patients with advance NSCLC.

In November 2003, we completed enrollment in one of our XYOTAX phase III pivotal trials for the front-line treatment of poor performance status patients with non-small cell lung cancer.

TRISENOX

On January 7, 2000, we entered into a Merger Agreement to acquire PolaRx Biopharmaceuticals, Inc., or PolaRx, a biopharmaceutical company that owned the rights to TRISENOX (arsenic trioxide), an anti-cancer compound for which we submitted and received approval for a New Drug Application with the FDA. The acquisition was accounted for as a purchase transaction. Under the terms of the Merger Agreement, we have made an additional contingent payment of approximately $4.0 million for meeting a $10.0 million TRISENOX sales threshold in 2002 and are currently obligated to pay $5.0 million in cash for achieving a $20.0 million TRISENOX sales threshold in 2003, recorded as goodwill and a short-term liability as of December 31, 2003. We are also required to make an additional payout of a 2% royalty on total net sales, payable in cash or common stock at the then fair market of our stock, for any calendar year that sales of TRISENOX exceed $40.0 million.

In September 2000, we received marketing approval of our NDA by the FDA for TRISENOX (arsenic trioxide). Sales of TRISENOX in the U.S. commenced in October 2000 and in March 2002, we received from the EMEA approval to market TRISENOX in the EU. We commenced the launch and sale of TRISENOX in the EU during the second quarter of 2002. We have recorded cumulative net product sales for TRISENOX of approximately $40.1 million through December 31, 2003. TRISENOX is manufactured primarily by a single vendor and sold through our direct sales force.

In December 2002, we entered into a distribution agreement with Nippon Shinyaku Co. Ltd., or Nippon. This agreement grants an exclusive license to Nippon to market and distribute TRISENOX (arsenic trioxide) injection in Japan, South Korea, and Taiwan. Upon execution of the agreement, Nippon paid us a $750,000 initial payment, which we recorded as deferred revenue and which is being recognized as revenue over the performance period of approximately eighteen months on a straight-line basis. Under the agreement, we received and recognized as revenue a $500,000 milestone payment from Nippon in 2003 and we may also receive additional future milestone payments totaling up to $3.5 million upon attainment of certain achievements.

PIXANTRONE

We acquired pixantrone, a novel anthracycline, for the treatment of NHL, through our merger with Novuspharama S.p.A. in January 2004. We are developing pixantrone, and plan to initiate a pivotal phase III trial in relapsed aggressive NHL in the first half of 2004.

OTHER COMPOUNDS

We are developing a novel polyglutamate-camptothecin molecule, or CT-2106. We filed a U.S. investigational new drug application, or IND, in December 2001 for this compound, initiated a phase I clinical study in the first quarter of 2002 and plan to initiate three phase II trials in small cell lung cancer, relapsed ovarian cancer and relapsed colorectal cancer during 2004.

Critical Accounting Policies and Estimates

Management makes certain judgments and uses certain estimates and assumptions when applying accounting principles generally accepted in the United States in the preparation of our consolidated financial statements. We evaluate our estimates and judgments on an on-going basis and base our estimates on historical experience and on assumptions that we believe to be reasonable under the circumstances. Our experience and assumptions form the basis for our judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may vary from what we anticipate and different assumptions or estimates about the future could change our reported results. While our significant accounting policies are more fully described in Note 1 to our consolidated financials statements, we believe the following accounting policies are the most critical to us, in that they are important to the portrayal of our consolidated financial statements and require our most difficult, subjective or complex judgments in the preparation of our consolidated financial statements.

Product Sales

We recognize revenue from product sales when there is persuasive evidence that an arrangement exists, title has passed and delivery has occurred, the price is fixed and determinable, and collectibility is reasonably assured. Product sales are recorded net of an allowance for estimated returns and discounts. Customers may return damaged or expired inventory up to twelve months after the expiration date. In estimating returns, we analyze historical returns, sales patterns, estimated inventory on hand at the distributors and the remaining shelf life of that inventory. In arriving at the accrual for product returns we match the returns to the corresponding production batch to assess the historical trend for returns. Based on this analysis, the estimated return percentage is applied to current period sales. Allowances for returns, discounts and bad debts are netted against accounts receivable.

License Agreement Revenues

We may generate revenue from technology licenses, collaborative research and development arrangements, and cost reimbursement contracts. Revenue under technology licenses and collaborative agreements typically consists of nonrefundable and/or guaranteed technology license fees, collaborative research funding, and various milestone and future product royalty or profit-sharing payments.

Revenue associated with up-front license fees, and research and development funding payments under collaborative agreements is recognized ratably over the relevant periods specified in the agreement, generally the research and development period. If the time period is not defined in the agreement, we calculate the revenue recognition period based on our current estimate of the research and development period considering experience with similar projects, level of effort and the stage of development. Should there be a change in our estimate of the research and development period, we will revise the term over which the initial payment is recognized. Revenue from substantive at-risk milestones and future product royalties is recognized as earned based on the completion of the milestones and product sales, as defined in the respective agreements. Revenue under cost reimbursement contracts is recognized as the related costs are incurred. Payments received in advance of recognition as revenue are recorded as deferred revenue.

In November 2002, the Emerging Issues Task Force (or "EITF") of the Financial Accounting Standards Board (or "FASB") issued EITF 00-21, "Revenue Arrangements with Multiple Deliverables," which addresses

certain aspects of the accounting for arrangements that involve the delivery or performance of multiple products, services and/or rights to use assets. Under EITF 00-21, revenue arrangements with multiple deliverables should be divided into separate units of accounting if the deliverables meet certain criteria, including whether the delivered items have a stand-alone value for the customer and whether there is evidence of fair value of the undelivered items. In addition, the total consideration should be allocated among the separate units of accounting based on their fair values and the applicable revenue recognition criteria should be considered separately for each of the separate units of accounting. We have adopted EITF 00-21 as of July 1, 2003, and will apply its provisions for all revenue arrangements we enter into on or after this date. The adoption of EITF 00-21 did not have a material impact on our revenue recognition accounting policies, financial position or result of operations. We will continue to evaluate the impact of EITF 00-21 as we enter into new revenue arrangements in the future.

Inventory

Inventory is stated at the lower of cost or market. Cost is determined using a weighted-average method. Finished goods inventory consists of our FDA and EMEA approved pharmaceutical drug, TRISENOX. We also record an allowance for inventory that may expire and become unsaleable due to the expiration of shelf life. In estimating inventory obsolescence reserves, we analyze (i) the shelf life and the expiration date, (ii) sales forecasts and (iii) inventory levels compared to forecasted usage. Judgment is required in determining whether the forecasted sales and usage information is sufficiently reliable to enable us to estimate inventory obsolescence reserve.

Research and Development Expenses

Research and development expenses include related salaries and benefits, clinical trial and related clinical manufacturing costs, contract and other outside service fees, and facilities and overhead costs. Research and development expenses consist of costs incurred for proprietary and collaboration research and development and also include activities such as product registries and investigator sponsored trials. Research and development costs are expensed as incurred. In instances where we enter into agreements with third parties for research, clinical trial, and related clinical trial manufacturing costs, costs are expensed upon the earlier of when non-refundable amounts are due or as services are performed. Amounts due under such arrangements may be either fixed fee or fee for service, and may include upfront payments, monthly payments, and payments upon the completion of milestones or receipt of deliverables.

Derivative Financial Instruments

We are subject to risks associated with fluctuations in the LIBOR interest rate from lease payments on our aircraft. Our policy is to hedge a portion of these forecasted transactions through an interest rate swap agreement. This swap agreement has been designated as a cash flow hedge. The portion of the net gain or loss on the derivative instrument that is effective as a hedge is reported as a component of accumulated other comprehensive income or loss in shareholders' equity (deficit) and is reclassified into earnings in the same period during which the hedged transaction affects earnings. The remaining net gain or loss on the derivative in excess of the present value of the expected cash flows of the hedged transaction is recorded in earnings immediately. If a derivative does not qualify for hedge accounting, or a portion of the hedge is deemed ineffective, the change in fair value is recorded in earnings. The swap was perfectly effective at December 31, 2003 and 2002. We do not enter into forward agreements for trading purposes.

Purchase price allocation

The purchase price for Novuspharma S.p.A. was allocated to the tangible and identifiable intangible assets acquired and liabilities assumed based on their estimated fair values at the acquisition date of January 1, 2004. An independent third-party valuation firm was engaged to assist in determining the fair values of in-process research and development, identifiable intangible assets, and certain property, plant, and equipment. Such a

valuation requires significant estimates and assumptions including but not limited to: determining the timing and expected costs to complete the in-process projects, projecting regulatory approvals, estimating future cash flows from product sales resulting from in-process projects, and developing appropriate discount rates and probability rates by project. The Company believes the fair values assigned to the assets acquired and liabilities assumed are based on reasonable assumptions. However, these assumptions may be incomplete or inaccurate, and unanticipated events and circumstances may occur. Additionally, estimates for the purchase price allocation may change as subsequent information becomes available.

Results of Operations

Years ended December 31, 2003 and 2002.

Product sales. TRISENOX is our pharmaceutical grade arsenic product that has been approved by the FDA and EMEA to treat patients with relapsed or refractory APL. We recorded net product sales of approximately $22.1 million and $11.4 million for TRISENOX for the years ended December 31, 2003 and 2002, respectively. The increase in net sales is primarily due to greater demand for our product in 2003. An increase in net sales in the fourth quarter was due to both an increase in product demand and additional wholesaler purchases resulting from an anticipated price increase that occurred in December 2003.

We expect first quarter sales 2004 may be at or below first quarter sales in 2003 primarily as a result of a technical error made by Center for Medicare Services (CMS) stating a payment rate of $2.81/mg for TRISENOX when administered in a physician's office versus the correct rate of $32.94/mg. This delayed physicians/patients from receiving accurate approved reimbursement for the product. Following several inquiries from our congressional delegates regarding the CMS error, the correct payment rate was published in early February. While this error will likely contribute to softer than anticipated first quarter sales, based upon recent new patient starts and wholesaler ordering trends we anticipate product demand to increase with overall net sales for 2004 being substantially higher than 2003. As a result, we expect that fourth quarter sales may be higher than sales in the first quarter of 2004.

License and contract revenue. In October 2001, we entered into a licensing agreement with Chugai Pharmaceutical Co., Ltd., or Chugai, for the development and commercialization of XYOTAX. Upon execution of the agreement, Chugai paid us a $3.0 million initial payment, which we recorded as deferred revenue and which is being recognized as revenue over the estimated development period of approximately six years on a straight-line basis. In December 2002, we entered into a distribution agreement with Nippon Shinyaku Co., Ltd., or Nippon, for the distribution and commercialization of TRISENOX. We received $750,000 upon execution of the agreement which we recorded as deferred revenue and which is being recognized as revenue over the performance period of approximately eighteen months on a straight-line basis. For the year ended December 31, 2003, we recognized approximately $2.7 million of license and contract revenue, of which approximately $1.2 million related to cost reimbursements for development expenses received from Chugai in 2003, $1.0 million related to the amortization of the initial payments from Chugai and Nippon, and $0.5 million related to a milestone payment received from Nippon in 2003 for their submission of an NDA in Japan. For the year ended December 31, 2002, we recognized $5.5 million of license and contract revenue, of which $3.0 million related to a milestone payment and $1.9 million for cost reimbursements for development expenses received from Chugai in 2002, and $0.5 million related to the amortization of the initial payments from Chugai and Nippon.

Cost of product sold. The cost of product sold during the year ended December 31, 2003 and 2002 was approximately $840,000 and $423,000, respectively. Our gross margins have remained consistent. Cost of product sold consists primarily of manufacturing costs, allowances for excess inventory that may expire and become unsaleable, and royalties paid on product sales. We expect product costs in the future to continue to approximate a small percentage of product sales.

Research and development expenses. Our research and development expenses for compounds under development and discovery research are as follows (in thousands):

	2003	2002
Compounds under development:		
XYOTAX	$52,888	$26,193
TRISENOX	4,862	5,225
Other compounds	1,655	2,804
Operating expenses	18,699	14,099
Discovery research	11,430	10,438
Total research and development expenses	$89,534	$58,759

Costs for compounds under development include external direct expenses such as principal investigator fees, clinical research organization charges and contract manufacturing fees incurred for preclinical, clinical, manufacturing and regulatory activities associated with preparing the compounds for submissions of new drug applications to the FDA or similar regulatory filings with agencies outside the U.S. Operating costs include our personnel and occupancy expenses associated with developing these compounds. Discovery research costs include primarily personnel, occupancy, and laboratory expenses associated with the discovery and identification of new drug targets and lead compounds. We do not allocate operating costs to the individual compounds under development as our accounting system does not track these costs by individual compound. As a result, we are not able to capture the total cost of each compound. Direct external costs incurred to date for XYOTAX and TRISENOX are $107.8 million and $18.2 million, respectively.

Research and development expenses increased to approximately $89.5 million for the year ended December 31, 2003, from approximately $58.8 million for the year ended December 31, 2002. Costs for our XYOTAX program increased primarily due to increased clinical and manufacturing costs of approximately $27.8 million associated with the set up, initiation and execution of our three phase III clinical trials and other clinical trials. These manufacturing costs were offset in part by a $2.0 million charge for a payment related to the achievement of contractual milestones associated with the completion of a phase II trial and the filing of the first IND application in Japan during the year ended December 31, 2002. TRISENOX costs decreased primarily as a result of a reduction in manufacturing and clinical costs of approximately $1.0 million offset in part by an increase in investigator sponsored trial expenses of approximately $0.6 million. Costs incurred for other compounds decreased primarily due to a $1.0 million milestone payment made in 2002 for the commencement of our phase I clinical trial for CT-2106. Operating expenses increased by approximately $4.6 million primarily due to additional personnel and occupancy costs related to our expanded development plans for XYOTAX, TRISENOX and CT-2106, including employee termination benefits of $0.6 million resulting from a reduction in workforce associated with our merger with Novuspharma. Costs for discovery research increased primarily as a result of $0.9 million in employee termination benefits and $0.8 million in additional occupancy costs. These costs were offset in part by a $0.5 million charge related to the fair value of warrants issued to the Hope Heart Institute in connection with a Sponsored Research Agreement entered into in November 2002 and a $0.4 million decrease in personnel costs. We anticipate increased research and development expenses during 2004 in connection with our clinical development plans for XYOTAX, pixantrone and our other products. Research and development costs may also increase as a result of restructuring charges to be incurred in connection with our election to vacate certain excess laboratory facilities during 2004 due to our integration with Novuspharma.

Our lead drug candidates, XYOTAX, pixantrone and TRISENOX for indications other than relapsed or refractory APL, are currently in clinical trials. Many drugs in human clinical trials fail to demonstrate the desired safety and efficacy characteristics. Even if our drugs progress successfully through initial human testing, they may fail in later stages of development. 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. Regulatory agencies, including the FDA and EMEA, regulate many aspects of a product candidate's life cycle, including research and development and pre-clinical and clinical testing. We or regulatory authorities may

suspend clinical trials at any time on the basis that the participants are being exposed to unacceptable health risks. Completion of clinical trials depends on, among other things, the number of patients available for enrollment in a particular trial, which is a function of many factors, including the availability and proximity of patients with the relevant condition. We rely on third parties to conduct clinical trials, which may result in delays or failure to complete trials if the third parties fail to perform or meet applicable standards. Many of our drug candidates are still in research and preclinical development, which means that they have not yet been tested on humans. We will need to commit significant time and resources to develop these and additional product candidates.

Our products 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.

We will be 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. We also enter into collaboration agreements for the development and commercialization of our product candidates. We cannot control the amount and timing of resources our collaborators devote to product candidates, which may also result in delays in the development or marketing of products.

Because of these risks and uncertainties, we cannot accurately predict when or whether we will successfully complete the development of our product candidates or the ultimate product development cost. Based on our current development plans, we anticipate launching XYOTAX for non-small-cell lung cancer in 2005. If this launch is successful, we would expect to receive significant cash inflows in 2005 from this compound.

With the exception of TRISENOX, we anticipate that we will not generate revenue from the sale of commercial drugs for a couple of years, if ever. Without revenue generated from commercial sales, we anticipate that funding to support our ongoing research, development and general operations will primarily come from public or private equity financings, collaborations, milestones and licensing opportunities from current or future collaborators.

Selling, general and administrative expenses. Selling, general and administrative expenses increased to approximately $55.6 million for the year ended December 31, 2003, from approximately $49.8 million for the year ended December 31, 2002. This increase is primarily attributed to approximately $4.6 million of additional sales and marketing costs mainly related to TRISENOX as well as increased marketing costs associated with product awareness and medical education for XYOTAX, approximately $3.2 million of additional personnel, operating and occupancy costs associated with supporting our research, development and marketing activities and an increase of approximately $0.6 million in stock-based compensation charges. These costs were offset in part by reductions of approximately $1.4 million in our corporate communications program and approximately $1.6 million in maintenance and operating costs of our leased aircraft. We expect selling, general and administrative expenses to increase during 2004 as a result of our merger with Novuspharma in addition to expenses related to our expanded research, development and commercialization efforts. Additionally, due to the variable accounting treatment of certain stock options, fluctuation in quoted prices for our common stock may result in unpredictable and potentially significant charges or credits to our stock-based compensation.

Goodwill and amortization of acquisition related intangibles. Amortization for the year ended December 31, 2003 decreased to approximately $1.3 million from approximately $6.7 million for the year ended December 31, 2003, due to a marketing intangible asset that became fully amortized in December 2002.

We are required to perform an annual impairment test, which we will perform in the fourth quarter of each year. During the fourth quarter of 2003, we completed our annual impairment test and determined that our goodwill had not been impaired. The net book value of goodwill will be reviewed for impairment annually and whenever there is an indication that the value of the goodwill may be impaired. Any resulting impairment will be recorded in the income statement in the period it is identified and quantified.

Investment income. Investment income decreased to approximately $1.9 million for the year ended December 31, 2003 from approximately $4.8 million for the year ended December 31, 2002. This decrease is attributed to lower average cash balances and lower prevailing interest rates on our securities available-for-sale during the year ended December 31, 2003 compared with the year ended December 31, 2002, offset by a reduction of investment premium amortization of approximately $1.0 million.

Interest expense. Interest expense decreased to approximately $9.3 million for the year ended December 31, 2003 from approximately $11.2 million for the year ended December 31, 2002. In December 2002, we completed an exchange offer for our 5.75% convertible subordinated notes, in which approximately $145.4 million of our 5.75% convertible subordinated notes were tendered in exchange for approximately $85.5 million of our new 5.75% convertible senior subordinated notes. The decrease in interest expense is attributable to the reduction of debt resulting from this exchange and was partially offset by an increase in interest expense due to the issuance of $75.0 million principal amount of our 4% convertible senior subordinated notes in June 2003. We expect interest expense to increase in 2004 due to our 4% convertible senior subordinated notes which will be outstanding during the entire year.

Income Taxes

As of December 31, 2003, we had net operating loss carryforwards of approximately $467.7 million, of which $43.9 million relates to stock option deductions, and research and development credit carryforwards of approximately $15.2 million. The carryforwards begin to expire in 2007. Utilization of stock option deductions will not result in a reduction of tax expense.

Due to rounds of equity financings, and other ownership changes as defined in Section 382 of the Internal Revenue Code of 1986, as amended, or the Code, we incurred "ownership changes" pursuant to the Code. Accordingly, our use of the net operating loss carryforwards is limited to approximately $102.4 million annually for losses incurred prior to September 30, 2000 (which aggregate $209.7 million) and may be subject to additional limitations thereafter. Additionally, all losses incurred prior to March 27, 1997 (which aggregate $75.5 million) are subject to an annual limitation of approximately $4.2 million. To the extent that any single-year loss is not utilized to the full amount of the limitation, such unused loss is carried over to subsequent years until the earlier of its utilization or the expiration of the relevant carryforward period, which is generally 15-20 years. Approximately $13.2 million of pre-March 27, 1997 losses are expected to expire unused in the year 2012.

Years ended December 31, 2002 and 2001.

Product sales. We recorded net product sales of approximately $11.4 million and $6.1 million for TRISENOX for the years ended December 31, 2002 and 2001, respectively. The increase in net sales is primarily due to greater demand for our product in 2002.

License and contract revenue. For the year ended December 31, 2002, we recognized approximately $5.5 million of license and contract revenue, of which $3.0 million related to a milestone payment and $1.9 million for cost reimbursements for development expenses received from Chugai, and $0.5 million related to the amortization of the initial payments from Chugai and Nippon.

Cost of product sold. The cost of product sold during the year ended December 31, 2002 and 2001 was approximately $423,000 and $394,000, respectively. Our gross margins improved mainly due to lower charges for excess inventory in 2002. Cost of product sold consists primarily of manufacturing costs, allowances for excess inventory that may expire and become unsaleable, and royalties paid on product sales.

Research and development expenses. Our research and development expenses for compounds under development and discovery research are as follows (in thousands):

	2002	2001
Compounds under development:		
XYOTAX	$26,193	$18,345
TRISENOX	5,225	3,244
Other compounds	2,804	2,845
Operating expenses	14,099	10,428
Discovery research	10,438	9,807
Total research and development expenses	$58,759	$44,669

Research and development expenses increased to approximately $58.8 million for the year ended December 31, 2002, from approximately $44.7 million for the year ended December 31, 2001. Costs for our XYOTAX program increased primarily due to approximately $11.9 million of clinical and manufacturing costs associated with the set up and initiation of phase III clinical trials as well as several other clinical trials, approximately $3.3 million of preclinical and quality assurance development costs related to our agreement with Chugai and $2.0 million in milestone payments to PG-TXL Company, L.P. for completion of a phase II clinical trial and the filing of the first IND application in Japan. These increases were offset in part by a $9.2 million decrease in an equity-based development expense related to the vesting of warrants to purchase 350,000 shares of common stock upon the achievement of a milestone in 2001. TRISENOX costs increased due to approximately $2.5 million of medical affairs, manufacturing, quality assurance and clinical expenses associated with ongoing clinical trials offset by reduced costs of approximately $.9 million of regulatory and preclinical expenses. Costs incurred for other compounds in 2002 included a $1.0 million milestone payment for the commencement of our phase I clinical trial for PG-CPT, offset by lower expenses due to the discontinued clinical development of CT-2584 during 2001. We also incurred additional personnel and operating expenses of approximately $3.7 million related to our expanded development plans for XYOTAX, TRISENOX and PG-CPT.

Selling, general and administrative expenses. Selling, general and administrative expenses increased to approximately $49.8 million for the year ended December 31, 2002, from approximately $35.3 million for the year ended December 31, 2001. This increase is primarily attributed to approximately $5.9 million of additional personnel, operating and occupancy costs associated with supporting our research, development and marketing activities and our expanded corporate communication program, $5.6 million of lease, maintenance and operating costs for our leased aircraft, $4.8 million of additional sales personnel and marketing costs for TRISENOX, offset in part by an approximate $1.8 million reduction in stock-based compensation.

Amortization of acquisition related intangibles. In January 2000, we acquired PolaRx Biopharmaceuticals, Inc., which was accounted for using the purchase method of accounting. Our intangible assets are amortized over their remaining lives, estimated to be three to five years. Amortization for the year ended December 31, 2002 was approximately $6.7 million compared to approximately $9.4 million for the year ended December 31, 2001. This $2.7 million decrease is due to our adoption of SFAS 142, Goodwill and Other Intangible Assets, which we adopted January 1, 2002. Upon adoption, we ceased amortization of the net goodwill balance of $8.1 million. Accordingly, there are no charges for the amortization of goodwill in 2002 or thereafter.

We completed our transitional goodwill impairment test and based on our analysis, determined that no goodwill impairment had occurred as of January 1, 2002. Other intangibles resulting from the acquisition will continue to be amortized on a straight-line basis over the estimated remaining useful lives. The net book value of these intangibles at December 31, 2002 was approximately $2.7 million.

Investment income. Investment income decreased to approximately $4.8 million for the year ended December 31, 2002 from approximately $9.2 million for the year ended December 31, 2001. This decrease is attributed primarily to lower prevailing interest rates on our securities available-for-sale during the year ended December 31, 2002.

Interest expense. Interest expense increased to approximately $11.2 million for the year ended December 31, 2002 from approximately $6.0 million for the year ended December 31, 2001. The increase is attributable to the interest associated with the $175.0 million of 5.75% convertible subordinated notes issued in the second and third quarters of 2001.

Gain on exchange of convertible notes. In December 2002, we completed an exchange offer for our convertible subordinated notes, in which approximately $145.4 million of our 5.75% convertible subordinated notes were tendered in exchange for approximately $85.5 million of our new 5.75% convertible senior subordinated notes. The exchanged notes had an effective conversion price of $34.00 per share, while the new notes have an effective conversion price of $10.00 per share. Both notes are due in June 2008. We recognized a net gain of $55.3 million on the early extinguishment of these notes. This net gain is based on the carrying value of the exchanged notes less the fair value of the new notes, net of debt issue costs of $4.6 million attributable to the exchanged notes. As of December 31, 2002, we had $29.6 million of original convertible subordinated notes outstanding, and $85.5 million of new convertible senior subordinated notes outstanding.

Liquidity and Capital Resources

As of December 31, 2003, we had $92.8 million in cash, cash equivalents, securities available-for-sale and interest receivable.

Net cash used in operating activities increased to $107.1 million in 2003, compared to $88.9 million in 2002 and $61.9 million in 2001. The increase in net cash used in operating activities in 2003 as compared to 2002, was primarily due to the increase in our net loss offset in part by an increase in accrued expenses. The increase in net cash used in operating activities in 2002 as compared to 2001, was primarily due to the increase in our operating expenses.

We expect the amount of net cash used in operating activities in 2004 to be higher than 2003 due to our acquisition of Novuspharma in addition to anticipated progress in our phase III clinical trials for XYOTAX and pixantrone and phase II clinical trials for both pixantrone and CT-2106. The extent of cash flow used in operating activities will be significantly affected by our ability to in-license or acquire rights to other products, or increase TRISENOX sales.

Net cash provided by investing activities totaled $24.9 million in 2003 and $80.6 million in 2002, compared to net cash used of $92.7 million in 2001. The decrease in net cash provided by investing activities in 2003, as compared to 2002, was primarily due to a decrease in proceeds from sales and maturities of securities available-for-sale partially offset by a decrease in purchases of securities available-for-sale. The increase in net cash provided by investing activities in 2002, as compared to 2001, was primarily due to an increase in proceeds from sales and maturities of securities available-for-sale.

Net cash provided by financing activities totaled approximately $72.7 million in 2003, compared to net cash used in financing activities of approximately $12.5 million in 2002, and net cash provided by financing activities of approximately $169.6 million in 2001. The net cash provided by financing activities during 2003 was primarily due to the issuance of 4.0% convertible senior subordinated notes resulting in net proceeds of $72.1 million. The net cash used in financing activities during 2002 was due primarily to the repurchase of our common stock for $16.4 million. The net cash provided by financing activities during 2001 was primarily due to the issuance of 5.75% convertible subordinated notes resulting in net proceeds of $167.9 million. In December 2002, we completed an exchange offer for our convertible subordinated notes, in which approximately $145.4 million of our convertible subordinated notes were tendered in exchange for approximately $85.5 million of our new convertible senior subordinated notes.

Through our acquisition of Novuspharma, effective January 1, 2004, we acquired approximately $92.5 million of cash and cash equivalents in addition to pixantrone, a novel anthracycline, which is expected to begin a pivotal phase III trial for relapsed, aggressive NHL in the first half of 2004. If this trial is successful, we intend to file an NDA for pixantrone by the end of 2005 or early 2006.

We expect to generate losses from operations due to substantial additional research and development costs, including costs related to clinical trials, increased sales and marketing expenditures and costs associated with the integration of Novuspharma into CTI. We expect that our existing and anticipated capital resources will enable us to maintain our planned operations through at least the first half of 2005. Our future capital requirements will depend on many factors, including:

- success of our sales and marketing efforts,
- success in acquiring complementary product, technologies or businesses,
- success in the integration of Novuspharma into CTI,
- progress in and scope of our research and development activities, and
- competitive market developments.

Future capital requirements will also depend on the extent to which we acquire or invest in businesses, products and technologies. If we should require additional financing due to unanticipated developments, additional financing may not be available when needed or, if available, we may not be able to obtain this financing on terms favorable to us or to our shareholders. Insufficient funds may require us to delay, scale back or eliminate some or all of our research and development programs, or may adversely affect our ability to operate as a going concern. If additional funds are raised by issuing equity securities, substantial dilution to existing shareholders may result.

The following table includes information relating to our contractual obligations as of December 31, 2003 (in thousands):

Contractual Obligations	Payments Due by Period				
	Total	1 Year	2-3 Years	4-5 Years	After 5 Years
5.75% Convertible senior subordinated notes(1)	$ 85,459	$ —	$ —	$ 85,459	$ —
4.0% Convertible senior subordinated notes(2)	75,000	—	—	—	75,000
5.75% Convertible subordinated notes(3)	29,640	—	—	29,640	—
Interest on convertible and convertible senior subordinated notes	48,988	9,618	19,237	15,633	4,500
Operating leases:					
Aircraft	14,775	1,927	3,854	3,854	5,140
Facilities	50,885	7,015	14,401	12,281	17,188
Long term debt	4,658	1,766	1,657	360	875
Payment related to PolaRx acquisition	5,019	5,019	—	—	—
	$314,424	$25,345	$39,149	$147,227	$ 102,703

(1) The 5.75% convertible senior subordinated notes are convertible into shares of CTI common stock at a conversion rate of 100 shares of common stock per $1,000 principal amount of the notes, which is equivalent to a conversion price of $10.00 per share.

(2) The 4.0% convertible senior subordinated notes are convertible into shares of CTI common stock at a conversion rate of 74.0741 shares of common stock per $1,000 principal amount of the notes, which is equivalent to a conversion price of approximately $13.50 per share.

(3) The 5.75% convertible subordinated notes are convertible into shares of CTI common stock at a conversion rate of 29.4118 shares of common stock per $1,000 principal amount of the notes, which is equivalent to a conversion price of approximately $34.00 per share.

The remaining amount of milestone payments we may be required to pay pursuant to the agreement with PG-TXL Company L.P. is $15.5 million. We may also be required to make an additional payout in future years based on a 2% royalty on total net sales, payable in cash or common stock at the then fair market value of our stock, related to the PolaRx acquisition contingent upon achieving sales of TRISENOX in excess of $40.0 million for any calendar year.

Recent Accounting Pronouncements

Effective January 1, 2003, we adopted SFAS 146, *Accounting for Costs Associated with Exit or Disposal Activities,* which addresses accounting for restructuring, discontinued operation, plant closing, or other exit or disposal activity. SFAS 146 requires companies to recognize costs associated with exit or disposal activities when they are incurred rather than at the date of a commitment to an exit or disposal plan. SFAS 146 is to be applied prospectively to exit or disposal activities initiated after December 31, 2002. During 2003, we initiated plans to reduce our workforce to eliminate areas of redundancy and capitalize on synergies and efficiencies expected to be created by the merger with Novuspharma. We recognized approximately $1.5 million in research and development expenses for employee termination benefits during 2003 and expect to incur additional expenses of approximately $0.5 million during 2004.

In May 2003, the Financial Accounting Standards Board ("FASB") issued Statement of Financial Accounting Standards ("SFAS") No. 150, Accounting for Certain Financial Instruments with Characteristics of Both Liabilities and Equity. This Statement establishes standards for how an issuer classifies and measures certain financial instruments with characteristics of both liabilities and equity. It requires that an issuer classify a financial instrument that is within its scope as a liability (or an asset in some circumstances) because that financial instrument embodies an obligation of the issuer. This Statement is effective for financial instruments entered into or modified after May 31, 2003, and otherwise is effective at the beginning of the first interim period beginning after June 15, 2003. It is to be implemented by reporting the cumulative effect of a change in an accounting principle for financial instruments created before the issuance date of the Statement and still existing at the beginning of the interim period of adoption. In November 2003, the FASB indefinitely deferred the effective date of the statement for certain types of mandatorily redeemable financial instruments. The adoption of SFAS No. 150 did not have a material effect on our financial position or results of operations.

Item 7a. Quantitative and Qualitative Disclosure about Market Risk

Interest Rate Market Risk

We are exposed to market risk related to changes in interest rates that could adversely affect the value of our investments. We maintain a short-term investment portfolio consisting of interest bearing securities with an average maturity of less than one year. These securities are classified as "available-for-sale". These securities are interest bearing and thus subject to interest rate risk and will fall in value if market interest rates increase. Because we have the ability to hold our fixed income investments until maturity, we do not expect our operating results or cash flows to be affected to any significant degree by a sudden change in market interest rates related to our securities portfolio. The fair value of our securities available-for-sale at December 31, 2003 and 2002 was $83.1 million and $122.3 million, respectively. For each one percent change in interest rates, the fair value of our securities available-for-sale would change by approximately $0.3 million and $0.4 million as of December 31, 2003 and 2002, respectively.

We may manage our interest rate market risk, when deemed appropriate, through the use of derivative financial instruments. Derivative financial instruments are viewed as risk management tools and are not used for speculative or trading purposes. In 2001, we entered into a long-term operating lease that had a variable rent component that was based on LIBOR. In connection with this lease, we entered into an interest rate swap agreement to limit our interest rate exposure. This swap agreement has been designated as a cash flow hedge. The portion of the net gain or loss on the derivative instrument that is effective as a hedge is reported as a component of accumulated other comprehensive loss in shareholders' equity. As of December 31, 2003 and 2002, the fair value of the interest rate swap was a liability of $0.8 million and $1.2 million, respectively.

Foreign Exchange Market Risk

We have operated primarily in the United States and revenues to date have been primarily in U.S. dollars. Accordingly, we do not have material exposure to foreign currency rate fluctuations as of December 31, 2003. We have not entered into any foreign exchange contracts to hedge any exposure to foreign currency rate fluctuations because such exposure is immaterial.

We anticipate increased risks related to foreign currency rate fluctuations as a result of our acquisition of Novuspharma. We may be exposed to risks associated with foreign currency transactions insofar as we might desire to use U.S. dollars to make contract payments denominated in euros or vice versa. In addition, we are exposed to risks associated with the translation of euro-denominated financial results and accounts into U.S. dollars. We will need to analyze the magnitude of this exposure to determine what, if any, hedging instruments we will enter into going forward to minimize our risk.

Item 8. Consolidated Financial Statements and Supplementary Data

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

REPORT OF ERNST & YOUNG LLP, INDEPENDENT AUDITORS

The Board of Directors and Shareholders
Cell Therapeutics, Inc.

We have audited the accompanying consolidated balance sheets of Cell Therapeutics, Inc. as of December 31, 2003 and 2002, and the related consolidated statements of operations, shareholders' equity, and cash flows for each of the three years in the period ended December 31, 2003. Our audits also included the financial statement schedule listed in the Index at Item 15(a). These financial statements and schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and schedule based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Cell Therapeutics, Inc. at December 31, 2003 and 2002, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2003, in conformity with accounting principles generally accepted in the United States. Also, in our opinion, the related financial statement schedule, when considered in relation to the basic financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

As discussed in Note 1 to the consolidated financial statements, in 2002 the Company changed its method of accounting for goodwill and other intangibles in connection with the adoption of Statement of Financial Accounting Standards No. 142, Goodwill and Other Intangible Assets.

ERNST & YOUNG LLP

Seattle, Washington
February 6, 2004
except for Note 19,
as to which the date is February 10, 2004

CELL THERAPEUTICS, INC.

CONSOLIDATED BALANCE SHEETS
(In thousands, except share amounts)

	December 31, 2003	December 31, 2002
ASSETS		
Current assets:		
Cash and cash equivalents	$ 8,438	$ 17,946
Securities available-for-sale	83,144	122,311
Interest receivable	1,256	1,900
Accounts receivable, net	1,980	2,150
Inventory	1,008	878
Note receivable from officer	3,500	—
Prepaid expenses and other current assets	6,093	6,157
Total current assets	105,419	151,342
Property and equipment, net	11,341	11,652
Note receivable from officer	—	3,500
Goodwill	17,064	12,064
Other intangibles, net	1,335	2,670
Other assets and deferred charges	10,931	5,552
Total assets	$ 146,090	$ 186,780
LIABILITIES AND SHAREHOLDERS' EQUITY (DEFICIT)		
Current liabilities:		
Accounts payable	$ 4,031	$ 2,444
Accrued expenses	21,940	11,796
Accrued liability related to PolaRx acquisition	5,019	4,000
Current portion of deferred revenue	765	1,003
Current portion of long-term obligations	1,766	2,250
Total current liabilities	33,521	21,493
Convertible senior subordinated notes	160,459	85,460
Convertible subordinated notes	29,640	29,640
Deferred revenue, less current portion	1,310	2,090
Other long-term obligations, less current portion	3,702	4,614
Commitments and contingencies		
Shareholders' equity (deficit):		
Preferred Stock, no par value:		
Authorized shares—10,000,000		
Series C, 100,000 shares designated, none issued or outstanding	—	—
Series D, 10,000 shares designated, none issued or outstanding	—	—
Common Stock, no par value:		
Authorized shares—100,000,000		
Issued and outstanding shares—34,339,040 and 33,054,176 at December 31, 2003 and December 31, 2002, respectively	394,750	384,994
Deferred stock-based compensation	(5,956)	—
Accumulated other comprehensive loss	(850)	(1,056)
Accumulated deficit	(470,486)	(340,455)
Total shareholders' equity (deficit)	(82,542)	43,483
Total liabilities and shareholders' equity (deficit)	$ 146,090	$ 186,780

See accompanying notes.

CELL THERAPEUTICS, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share amounts)

	Year Ended December 31,		
	2003	2002	2001
Revenues:			
Product sales	$ 22,105	$ 11,393	$ 6,130
License and contract revenue	2,660	5,503	106
Total revenues	24,765	16,896	6,236
Operating expenses:			
Cost of product sold	840	423	394
Research and development	89,534	58,759	44,669
Selling, general and administrative	55,641	49,800	35,268
Amortization of purchased intangibles	1,335	6,701	9,390
Total operating expenses	147,350	115,683	89,721
Loss from operations	(122,585)	(98,787)	(83,485)
Other income (expense):			
Investment income	1,880	4,819	9,200
Interest expense	(9,326)	(11,240)	(5,988)
Gain on exchange of convertible subordinated notes	—	55,305	—
Other income (expense), net	(7,446)	48,884	3,212
Net loss	(130,031)	(49,903)	(80,273)
Preferred stock dividend	—	—	(1,372)
Net loss applicable to common shareholders	$(130,031)	$ (49,903)	$(81,645)
Basic and diluted net loss per common share	$ (3.89)	$ (1.48)	$ (2.41)
Shares used in calculation of basic and diluted net loss per common share	33,418	33,763	33,822

See accompanying notes.

CELL THERAPEUTICS, INC.

CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY (DEFICIT)
(In thousands)

	Preferred Stock Series D		Common Stock		Deferred Stock-based Compensation	Notes Receivable from Officers	Accumulated Deficit	Accumulated Other Comprehensive Income/(Loss)	Total Shareholders' Equity (Deficit)
	Shares	Amount	Shares	Amount					
Balance at January 1, 2001	2	$ 1,510	33,563	$ 386,895	$ —	$ (255)	$ (210,279)	$ 72	$ 177,943
Conversion of preferred stock to common stock	(2)	(1,510)	1,121	1,510	—	—	—	—	—
Preferred stock dividend	—	—	21	(872)	—	—	—	—	(872)
Proceeds from stock warrants exercised	—	—	20	264	—	—	—	—	264
Proceeds from stock options exercised and stock sold via employee stock purchase plan	—	—	347	1,489	—	—	—	—	1,489
Rescission of option exercises	—	—	(91)	(266)	—	—	—	—	(266)
Equity-based expense related to warrants vesting	—	—	—	9,212	—	—	—	—	9,212
Equity-based compensation expense	—	—	—	1,400	—	—	—	—	1,400
Reclass to current asset for former officer	—	—	—	—	—	30	—	—	30
Donation of common stock	—	—	1	17	—	—	—	—	17
Comprehensive loss:									
Unrealized gains on securities available-for-sale	—	—	—	—	—	—	—	312	312
Unrealized gains on interest rate swap	—	—	—	—	—	—	—	301	301
Net loss for the year ended December 31, 2001	—	—	—	—	—	—	(80,273)	—	(80,273)
Comprehensive loss									(79,660)
Balance at December 31, 2001	—	—	34,982	399,649	—	(225)	(290,552)	685	109,557
Preferred stock dividend	—	—	113	500	—	—	—	—	500
Proceeds from stock options exercised and stock sold via employee stock purchase plan	—	—	413	1,253	—	—	—	—	1,253
Equity-based compensation expense	—	—	147	11	—	—	—	—	11
Repurchase of common stock	—	—	(2,601)	(16,419)	—	—	—	—	(16,419)
Repayment of notes receivable from officers	—	—	—	—	—	225	—	—	225
Comprehensive loss:									
Unrealized losses on securities available-for-sale	—	—	—	—	—	—	—	(249)	(249)
Unrealized losses on interest rate swap	—	—	—	—	—	—	—	(1,492)	(1,492)
Net loss for the year ended December 31, 2002	—	—	—	—	—	—	(49,903)	—	(49,903)
Comprehensive loss									(51,644)
Balance at December 31, 2002	—	—	33,054	384,994	—	—	(340,455)	(1,056)	43,483
Conversion of senior subordinated notes to common stock	—	—	—	1	—	—	—	—	1
Conversion of warrants to common stock	—	—	134	—	—	—	—	—	—
Preferred stock dividend	—	—	44	500	—	—	—	—	500
Proceeds from stock options exercised and stock sold via employee stock purchase plan	—	—	603	2,303	—	—	—	—	2,303
Deferred compensation	—	—	504	6,581	(6,581)	—	—	—	—
Amortization of deferred compensation of restricted stock	—	—	—	—	625	—	—	—	625
Equity-based compensation expense	—	—	—	371	—	—	—	—	371
Comprehensive loss:									
Unrealized losses on securities available-for-sale	—	—	—	—	—	—	—	(175)	(175)
Unrealized gains on interest rate swap	—	—	—	—	—	—	—	381	381
Net loss for the year ended December 31, 2003	—	—	—	—	—	—	(130,031)	—	(130,031)
Comprehensive loss									(129,825)
Balance at December 31, 2003	—	$ —	34,339	$ 394,750	$ (5,956)	$ —	$ (470,486)	$ (850)	$ (82,542)

See accompanying notes.

CELL THERAPEUTICS, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Year Ended December 31,		
	2003	2002	2001
Operating activities			
Net loss applicable to common shareholders	$ (130,031)	$ (49,903)	$ (81,645)
Adjustments to reconcile net loss applicable to common shareholders to net cash used in operating activities:			
Depreciation and amortization	4,868	9,703	11,197
Noncash interest expense	758	992	553
Amortization of investment premium	3,572	4,537	1,040
Equity-based compensation expense	996	11	1,417
Preferred stock dividend	—	—	1,372
Noncash rent expense (benefit)	1,170	(115)	(115)
Equity-based expense related to warrants vesting	—	—	9,212
Loss on disposition of property and equipment	113	—	—
Loss (gain) on sale of investment securities	13	(15)	(26)
Gain on exchange of convertible subordinated notes	—	(55,305)	—
Changes in operating assets and liabilities:			
Interest receivable	644	1,578	(1,952)
Accounts receivable, net	170	(697)	(1,344)
Inventory	(130)	95	(806)
Prepaid expenses and other current assets	64	(2,561)	(2,537)
Other assets and deferred charges	1,573	1,038	(4,152)
Accounts payable	1,587	1,238	93
Accrued expenses	8,507	275	2,907
Deferred revenue	(1,018)	199	2,894
Total adjustments	22,887	(39,027)	19,753
Net cash used in operating activities	(107,144)	(88,930)	(61,892)
Investing activities			
Purchases of securities available-for-sale	(167,433)	(287,516)	(297,471)
Proceeds from sales of securities available-for-sale	27,403	111,554	35,183
Proceeds from maturities of securities available-for-sale	175,437	266,134	175,503
Purchases of property and equipment	(3,335)	(6,259)	(5,938)
Additional consideration related to PolaRx acquisition	(3,981)	—	—
Deferred acquisition costs related to Novuspharma merger	(3,160)	—	—
Issuance of note receivable to officer	—	(3,500)	—
Repayment of notes receivable from officers	—	225	—
Net cash provided by (used in) investing activities	24,931	80,638	(92,723)
Financing activities			
Proceeds from issuance of convertible subordinated notes, net	72,143	—	167,954
Repurchase of common stock	—	(16,419)	—
Proceeds from common stock options exercised and stock sold via employee stock purchase plan	2,303	1,253	1,489
Rescission of stock options exercised	—	—	(266)
Proceeds from common stock warrants exercised	—	—	264
Repayment of long-term obligations	(1,741)	(1,781)	(1,425)
Proceeds from the issuance of long-term obligations	—	4,497	1,552
Net cash provided by (used in) financing activities	72,705	(12,450)	169,568
Net increase (decrease) in cash and cash equivalents	(9,508)	(20,742)	14,953
Cash and cash equivalents at beginning of period	17,946	38,688	23,735
Cash and cash equivalents at end of period	$ 8,438	$ 17,946	$ 38,688
Supplemental disclosure of cash and noncash flow information			
Cash paid during the period for interest	$ 8,439	$ 10,469	$ 4,987
Reduction upon exchange of outstanding convertible notes	$ —	$ 59,900	$ —
Issuance of common stock for payment of preferred stock dividend	$ 500	$ 500	$ 500
Conversion of Series D preferred stock into common stock	$ —	$ —	$ 1,510

See accompanying notes.

CELL THERAPEUTICS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
December 31, 2003

1. Description of Business and Summary of Significant Accounting Policies

Description of Business

Cell Therapeutics, Inc., or CTI, focuses on the discovery, development, and commercialization of drugs for the treatment of cancer. Our principal business strategy is to focus our activities on cancer therapeutics, an area that represents a large market opportunity that is not adequately served by existing therapies.

We operate in a highly regulated and competitive environment. The manufacturing and marketing of pharmaceutical products require approval from, and are subject to, ongoing oversight by the Food and Drug Administration, or FDA, in the United States and by comparable agencies in other countries. Obtaining approval for a new therapeutic product is never certain and may take several years and involve expenditure of substantial resources.

We operate in one business segment. Sales of TRISENOX, our current commercial product, are primarily to pharmaceutical wholesalers who distribute the drug in the United States. We purchase raw material from one supplier, and we currently have two vendors approved by regulatory agencies to manufacture finished product for TRISENOX in the United States.

Principles of Consolidation

The consolidated financial statements include the accounts of Cell Therapeutics, Inc., its wholly owned subsidiaries (CTI Technologies, Inc., PolaRx Biopharmaceuticals, Inc., CTI Corporate Development, Inc. and Cell Therapeutics (UK) Limited), and its majority owned subsidiary (PanGenex, Inc.). All intercompany transactions and balances are eliminated in consolidation.

Cash and Cash Equivalents

We consider all highly liquid debt instruments with maturities of three months or less at the time acquired to be cash equivalents. Cash equivalents represent short-term investments consisting of investment-grade corporate and government obligations, carried at cost, which approximates market value.

Securities Available-for-Sale

Management determines the appropriate classification of debt securities at the time of purchase. Management currently classifies our investment portfolio as available-for-sale and carries the securities at fair value based on quoted market prices with unrealized gains and losses included in accumulated other comprehensive income or loss. The amortized cost of debt securities in this category is adjusted for amortization of premiums and accretion of discounts to maturity. Interest on securities available-for-sale and amortization and accretion of premiums and discounts are included in investment income. Realized gains and losses and declines in value judged to be other than temporary on available-for-sale securities are included in investment income. The cost of securities sold is based on the specific identification method. Interest on securities classified as available-for-sale is included in investment income.

Certain Concentrations

We are subject to concentration of credit risk primarily from our cash investments. Under our investment guidelines, credit risk is managed by diversification of the investment portfolio and by the purchase of investment-grade securities. We do not require collateral or other security to support credit sales, but provide an allowance for bad debts when warranted.

We entered into a supply agreement with our primary supplier of paclitaxel, a key starting material for our XYOTAX drug candidate. We have an agreement with a contract manufacturer for TRISENOX and an additional supplier received FDA approval to manufacture TRISENOX in June 2003. If we are unable to obtain sufficient quantities from these suppliers, and if we were unable to source these materials and services from other suppliers and manufacturers, certain research and development and sales activities may be delayed.

Product Sales

We recognize revenue from product sales when there is persuasive evidence that an arrangement exists, title has passed and delivery has occurred, the price is fixed and determinable, and collectibility is reasonably assured. Product sales are recorded upon shipment net of an allowance for returns and discounts. In estimating returns, we analyze historical returns, sales patterns, estimated inventory on hand at the distributors and the remaining shelf life of that inventory. Allowances for returns, discounts and bad debts, which are netted against accounts receivable, totaled approximately $2.1 million and $0.9 million for the years ended December 31, 2003 and 2002, respectively.

License Agreement Revenues

We may generate revenue from technology licenses, collaborative research and development arrangements, and cost reimbursement contracts. Revenue under technology licenses and collaborative agreements typically consists of nonrefundable and/or guaranteed technology license fees, collaborative research funding, and various milestone and future product royalty or profit-sharing payments.

Revenue associated with up-front license fees, and research and development funding payments under collaborative agreements is recognized ratably over the relevant periods specified in the agreement, generally the research and development period. Revenue from substantive at-risk milestones and future product royalties is recognized as earned based on the completion of the milestones and product sales, as defined in the respective agreements. Revenue under cost reimbursement contracts is recognized as the related costs are incurred. Payments received in advance of recognition as revenue are recorded as deferred revenue.

Cost of Product Sold

Cost of product sold consists primarily of the cost of product sold to our customers, including allowances for excess inventory that may expire and become unsaleable. Royalties paid on product sales, as well as shipping and handling costs are also included.

Inventory

Inventory is stated at the lower of cost or market. Cost is determined using a weighted-average method. Finished goods inventory consists of our FDA and EMEA-approved pharmaceutical drug, TRISENOX. If the cost of the inventory exceeds the expected market value, provisions are recorded for the difference between the cost and the net realizable value. When required, an allowance for excess inventory that may expire and become unsaleable is recorded. The components of inventories are as follows as of December 31 (in thousands):

	2003	2002
Work in process	$ 759	$548
Finished goods	249	330
	$1,008	$878

Research and Development Expenses

Research and development expenses include related salaries and benefits, clinical trial and related clinical trial manufacturing costs, contract and other outside service fees, and facilities and overhead costs. Research and development expenses consist of costs incurred for proprietary and collaboration research and development and also include activities such as product registries and investigator sponsored trials. Research and development costs are expensed as incurred. In instances where we enter into agreements with third parties for research, clinical trial, and related clinical trial manufacturing costs, costs are expensed upon the earlier of when non-refundable amounts are due or as services are performed. Amounts due under such arrangements may be either fixed fee or fee for service, and may include upfront payments, monthly payments, and payments upon the completion of milestones or receipt of deliverables.

Property and Equipment

Property and equipment, including assets pledged as security in financing agreements, are carried at cost, less accumulated depreciation and amortization. Leasehold improvements are amortized over the lesser of the useful life or the term of the applicable lease using the straight-line method. Depreciation commences at the time assets are placed in service and is calculated using the straight-line method over the estimated useful lives of the assets ranging from three to five years.

We perform reviews of our long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount might not be recoverable. We do not perform a periodic assessment of assets for impairment in the absence of such information or indicators. To date, there has been no material impairment of long-lived assets.

Goodwill and Intangible Assets

Intangible assets consist of goodwill and other acquisition-related intangible assets. Intangible assets with finite lives are carried at cost less accumulated amortization. Amortization is computed using the straight-line method over the estimated useful lives of the respective assets, ranging from three to five years.

On January 1, 2002, we adopted Statement of Financial Accounting Standards, or SFAS, No. 142, *Goodwill and Other Intangible Assets*. SFAS 142 requires that goodwill no longer be amortized, but rather be tested for impairment at least annually and written down when impaired, and also requires purchased intangible assets other than goodwill to be amortized over their useful lives unless these lives are determined to be indefinite. We performed an impairment test of goodwill upon transition to SFAS 142 on January 1, 2002, and an annual impairment test in the fourth quarters of 2002 and 2003, and found no impairment. We will continue to evaluate our goodwill for impairment on an annual basis and whenever events and changes in circumstances suggest that the carrying amount may not be recoverable.

Changes in the net carrying amount of goodwill in 2002 and 2003 are as follows (in thousands):

Balance as of January 1, 2002	$ 8,064
Additional goodwill in 2002	4,000
Balance as of December 31, 2002	12,064
Additional goodwill in 2003	5,000
Balance as of December 31, 2003	$17,064

During 2003 and 2002, we recorded as goodwill an additional $5.0 million and $4.0 million, respectively, related to contingent consideration that became due and payable in connection with our 2000 acquisition of PolaRx Biopharmaceuticals, Inc., or PolaRx, (see Note 15).

Other intangible assets are composed of the following as of December 31 (in thousands):

	2003		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Patents and other intangibles	$ 6,674	$ 5,339	$1,335

	2002		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Marketing intangible asset	$16,100	$ 16,100	$ —
Patents and other intangibles	6,674	4,004	2,670
	$22,774	$ 20,104	$2,670

Amortization expense of our goodwill and other intangible assets is as follows (in thousands):

	Year Ended December 31,		
	2003	2002	2001
Marketing intangible asset	$ —	$ 5,367	$5,367
Patents and other intangibles	1,335	1,334	1,181
Goodwill	—	—	2,842
	$ 1,335	$ 6,701	$9,390

We expect amortization expense on patents and other intangible assets acquired from PolaRx to be approximately $1.3 million in 2004, at which time they will be fully amortized.

A reconciliation of previously reported net loss and net loss per share to the amounts adjusted for the exclusion of goodwill amortization follows for the year ended December 31, (in thousands, except per share amounts):

	2003	2002	2001
Reported net loss applicable to common shareholders	$(130,031)	$(49,903)	$(81,645)
Adjustments:			
Amortization of goodwill	—	—	2,842
Net loss applicable to common shareholders, as adjusted common shareholders	$(130,031)	$(49,903)	$(78,803)
Basic and diluted net loss per share, as reported	$ (3.89)	$ (1.48)	$ (2.41)
Basic and diluted net loss per share, as adjusted	$ (3.89)	$ (1.48)	$ (2.33)

Stock-Based Compensation

In accordance with SFAS 123, *Accounting for Stock-Based Compensation*, we elected to continue to account for stock-based compensation using the intrinsic value method prescribed in Accounting Principles Board Opinion, or APB, 25, *Accounting for Stock Issued to Employees*, and related interpretations. Generally, compensation cost for employee stock options is measured as the excess, if any, of the market price of our common stock at the date of grant over the stock option exercise price. Any deferred compensation is recognized on a graded vesting method. Under our plan, stock options are generally granted at fair market value.

In accordance with the provisions of SFAS 123, we apply APB 25 and related interpretations in accounting for our stock option plans and, accordingly, do not recognize compensation cost for options granted with exercise

prices equal to or greater than fair value. If we elected to recognize compensation cost based on the fair value at grant date of the options granted as prescribed by SFAS 123, net loss applicable to common shareholders and basic and diluted net loss per share would have been adjusted, or increased, as follows for the years ended December 31 (in thousands, except per share amounts):

	2003	2002	2001
Net loss applicable to common shareholders:			
As reported	$(130,031)	$(49,903)	$ (81,645)
Add: Stock-based employee compensation included in reported net loss	663	59	330
Deduct: Total stock-based employee compensation expense determined under fair value based method for all awards	(11,992)	(21,404)	(22,837)
As adjusted	$(141,360)	$(71,248)	$(104,152)
Basic and diluted net loss per share:			
As reported	$ (3.89)	$ (1.48)	$ (2.41)
As adjusted	$ (4.23)	$ (2.11)	$ (3.08)

Stock compensation expense for options granted to non-employees has been determined in accordance with SFAS 123 and the Emerging Issues Task Force, or EITF, consensus in Issue No. 96-18, *Accounting for Equity Instruments that are Issued to Other than Employees for Acquiring, or in Conjunction with Selling, Goods or*
Services, as the fair value of the consideration received or the fair value of the equity instruments issued,
whichever is more reliably measured. The fair value of options granted to non-employees is periodically remeasured as the underlying options vest.

Advertising Costs

The costs of advertising are expensed as incurred. We incurred advertising costs of $711,000, $856,000 and $839,000 in 2003, 2002 and 2001, respectively.

Net Loss per Share

Basic net loss per share is calculated based on the net loss applicable to common shareholders divided by the weighted average number of common shares outstanding for the period excluding any dilutive effects of options, warrants and convertible securities. Diluted earnings per share assumes the conversion of all dilutive convertible securities, such as convertible subordinated debt using the if-converted method, and assumes the exercise of other dilutive securities, such as option and warrants, using the treasury stock method.

Derivative Financial Instruments

Effective at the beginning of fiscal 2001, we adopted SFAS 133, *Accounting for Derivative Instruments and Hedging Activities*, as amended. We are subject to risks associated with fluctuations in the LIBOR interest rate from lease payments on our aircraft. Our policy is to hedge a portion of these forecasted transactions through an interest rate swap agreement. This swap agreement has been designated as a cash flow hedge. The portion of the net gain or loss on the derivative instrument that is effective as a hedge is reported as a component of accumulated other comprehensive income or loss in shareholders' equity (deficit) and is reclassified into earnings in the same period during which the hedged transaction affects earnings. The remaining net gain or loss on the derivative in excess of the present value of the expected cash flows of the hedged transaction is recorded in earnings immediately. If a derivative does not qualify for hedge accounting, or a portion of the hedge is deemed ineffective, the change in fair value is recorded in earnings. The swap was perfectly effective at December 31, 2003 and 2002. We do not enter any forward agreements for trading purposes.

Other Financial Instruments

At December 31, 2003 and 2002, the carrying value of financial instruments such as receivables and payables, approximated their fair values based on the short-term maturities of these instruments. The carrying value of other long-term liabilities approximated fair values because the underlying interest rates approximate market rates at the balance sheet dates.

Based on their respective trading prices, the fair values of our convertible senior subordinated notes and convertible subordinated notes are as follows as of December 31 (in thousands):

	2003	2002
5.75% convertible senior subordinated notes	$87,600	$85,460
4.0% convertible senior subordinated notes	$70,100	$ —
5.75% convertible subordinated notes	$24,500	$17,800

Use of Estimates

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ from those estimates.

Comprehensive Income (Loss)

SFAS 130, *Reporting Comprehensive Income*, provides for unrealized gains and losses on our securities available-for-sale and interest rate swap agreement, designated as a cash flow hedge, to be included in other comprehensive income or loss.

Information regarding the components of accumulated other comprehensive loss is as follows (in thousands):

	2003	2002
Net unrealized gains (losses) on securities available-for-sale	$ (40)	$ 135
Net unrealized losses on interest rate swap	(810)	(1,191)
	$(850)	$(1,056)

Reclassifications

Certain prior year items have been reclassified to conform to the current year presentation.

2. Securities Available-for-Sale

Securities available-for-sale consist of the following as of December 31 (in thousands):

	2003			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
U.S. government obligations	$ 36,614	$ 3	$ (11)	$ 36,606
Corporate obligations	34,452	1	(36)	34,417
Municipal government obligations	12,118	5	(2)	12,121
	$ 83,184	$ 9	$ (49)	$ 83,144

	2002			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
U.S. government obligations	$ 60,458	$ 49	$ (1)	$ 60,506
Corporate obligations	46,140	107	(22)	46,225
Municipal government obligations	15,578	9	(7)	15,580
	$122,176	$ 165	$ (30)	$122,311

As of December 31, 2003, $82.1 million of securities available-for-sale had contractual maturities of less than one year, while $1.0 million had contractual maturities over one year. As of December 31, 2002, $120.3 million of securities available-for-sale had contractual maturities of less than one year, while $2.0 million had contractual maturities over one year. Gross realized gains and losses to date have not been material.

3. Property and Equipment

Property and equipment are composed of the following as of December 31 (in thousands):

	2003	2002
Leasehold improvements	$ 8,911	$ 8,604
Lab equipment	6,340	8,745
Furniture and office equipment	10,173	11,860
	25,424	29,209
Less: accumulated depreciation and amortization	(14,083)	(17,557)
	$ 11,341	$ 11,652

Depreciation expense of $3.5 million, $3.0 million and $1.8 million was recognized during 2003, 2002 and 2001, respectively.

4. Accrued Liabilities

Accrued liabilities consist of the following as of December 31 (in thousands):

	2003	2002
Clinical development	$ 6,878	$ 1,735
Employee compensation and related expenses	5,121	4,535
Manufacturing expenses	1,776	877
Novupharma acquisition costs	1,742	—
Other research and development expenses	1,701	1,063
Corporate development and sales and marketing expenses	1,300	615
Research and development services provided by Novuspharma	1,163	—
Insurance financing and accrued interest expense	294	226
Other	1,965	2,745
	$21,940	$11,796

At December 31, 2003 and 2002, we also accrued a $5.0 million and $4.0 million liability, respectively, related to our acquisition of PolaRx in 2000 (see Note 15).

5. Contractual Arrangements and Commitments

Lease Agreements

Facilities

We lease our office and laboratory space under operating leases. Leases for our corporate office space contain an annual escalation clause of approximately 3% and the related rent expenses are straight-lined over the term of the respective lease. Rent expense amounted to approximately $6.8 million, $4.7 million, and $2.9 million for the years ended December 31, 2003, 2002 and 2001, respectively.

Aircraft

In 2001, we entered into an operating lease agreement for use of an aircraft. Terms of the lease include current monthly rental payments of $161,000 plus an incremental rent adjustment, which is based on the value of the aircraft and will vary depending on the prevailing applicable LIBOR rate. We may cancel this agreement if certain conditions are met and six months notice is provided. The lease expires in August 2011 with provision for renewal and we are responsible for all maintenance and insurance costs for the aircraft. Rent expense related to the aircraft amounted to $2.4 million, $2.6 million and $294,000 for the years ended December 31, 2003, 2002 and 2001, respectively.

In connection with this aircraft lease, we entered into an interest rate swap agreement that effectively locks in the effect of the incremental rate adjustment for the first 78 payments. The swap agreement expires in September 2008. Under the swap agreement, we will receive a variable amount based on the monthly LIBOR rate and we will pay a fixed rate payment based on a rate of 4.78%. The swap agreement's notional amount of approximately $15.6 million as of December 31, 2003 matches the incremental rent value of the aircraft. The other party to the swap agreement is an affiliate of the lessor; therefore, we do not believe we have any counterparty risk related to the interest rate swap. At December 31, 2003 and 2002, the fair value of the swap was a liability of $810,000 and $1.2 million, respectively, which is recorded in long-term other liabilities and other comprehensive loss. This swap is 100% effective. As a result of the above transactions, the effective interest rate on this lease is 6.49%.

Future Minimum Lease Payments

Future minimum lease commitments for operating leases at December 31, 2003 are as follows (in thousands):

2004	$ 8,942
2005	9,036
2006	9,219
2007	9,395
2008	6,740
Thereafter	22,328
	$65,660

Supply Agreement

In September 2001, we entered into a supply agreement with Natural Pharmaceuticals, Inc. for paclitaxel, a key starting material for our XYOTAX drug candidate. Under the supply agreement, we purchased paclitaxel at a pre-determined price and will receive supply over a multi-year term. At December 31, 2003, we had recorded a $3.7 million prepayment for future supply delivery, all of which was classified as current. At December 31, 2002, we had recorded a $4.6 million prepayment, of which $1.4 million was classified as noncurrent.

6. Long-Term Obligations

Convertible subordinated notes

In June 2001, we issued $150.0 million principal amount of 5.75% convertible subordinated notes due June 15, 2008 with interest payable semi-annually in June and December. In September 2001, we issued an additional $25.0 million principal amount of these notes. This additional issuance resulted from the exercise of an over-allotment option that we had granted to the initial purchasers. Net proceeds to us were approximately $168.0 million, after deducting expenses and underwriters' discounts and commissions. We recorded issuance costs related to the notes of approximately $7.0 million. Issuance costs are recorded in other assets and amortized to interest expense over the life of the notes using the effective interest method.

The notes are convertible, at the option of the holder, into shares of our common stock at any time prior to maturity or redemption at a conversion rate of 29.4118 shares per each $1,000 principal note, subject to adjustment in certain circumstances. This is equivalent to a conversion price of $34.00 per share. Prior to June 21, 2004, we may redeem the notes upon certain conditions, the most significant of which is that the closing price of our common stock must exceed 150% of the conversion price for at least 20 trading days within a period of 30 consecutive trading days. Upon such redemption, we would make an additional payment of $172.50 per $1,000 note, less any interest previously paid on the notes. Thereafter, we can redeem the notes at specified redemption prices ranging from 103.286% to 100% of the principal amount. The redemption prices will vary depending on the year redeemed. The holder may elect to convert their notes prior to any such redemption.

In December 2002, we completed an exchange offer for our convertible subordinated notes, in which approximately $145.4 million of our convertible subordinated notes were tendered in exchange for approximately $85.5 million of our new convertible senior subordinated notes. We recognized a net gain of $55.3 million on the early extinguishment of these notes. This net gain is based on the carrying value of the exchanged notes less the fair value of the new notes, net of debt issue costs of $4.6 million attributable to the exchanged notes. As of December 31, 2003, we had $29.6 million convertible subordinated notes outstanding.

Convertible senior subordinated notes

In connection with the exchange, we issued $85.5 million of 5.75% convertible senior subordinated notes and recorded additional issuance costs of approximately $2.1 million, which are recorded in other assets and are

being amortized to interest expense using the effective interest method, over the remaining life of the notes. The terms of the new notes are similar to the convertible subordinated notes except for the conversion price and provisional redemption provision. The conversion rate for these notes is 100 shares per $1,000 principal note; this is equivalent to a conversion price of $10.00 per share. Prior to June 21, 2004, we may redeem the notes upon certain conditions, the most significant of which is that the closing price of our common stock must exceed 150% of the conversion price for at least 20 trading days within a period of 30 consecutive trading days. Upon such redemption, we would make an additional payment of $86.25 per $1,000 note, less any interest previously paid on the notes. Thereafter, we can redeem the notes at specified redemption prices ranging from 103.286% to 100% of the principal amount. The redemption prices will vary depending on the year redeemed. The holder may elect to convert their notes prior to any such redemption. As of December 31, 2003, we had $85.5 million of 5.75% convertible senior subordinated notes outstanding.

In June 2003, we issued $75.0 million principal amount of 4.0% convertible senior subordinated notes due July 1, 2010 with interest payable semi-annually in January and July. Net proceeds to us were approximately $72.1 million, after deducting expenses and underwriters' discounts and commissions. We recorded issuance costs related to the notes of approximately $2.9 million. These issuance costs are recorded as other assets and are being amortized to interest expense using the effective interest method, over the seven-year life of the notes.

The notes are convertible, at the option of the holder, into shares of our common stock at any time prior to maturity, redemption or repurchase at an initial conversion rate of 74.0741 shares of common stock per $1,000 principal amount of notes, which is subject to adjustment in certain circumstances. This conversion rate is equivalent to a conversion price of approximately $13.50 per share. Prior to maturity, we may redeem the notes upon certain conditions, the most significant of which is that the closing price of our common stock must exceed 150% of the conversion price for at least 20 trading days within a period of 30 consecutive trading days. Upon such redemption, we would make an additional payment of $280.00 per $1,000 note, less any interest previously paid on the notes. The holder may elect to convert their notes prior to any such redemption. As of December 31, 2003, we had $75.0 million of 4.0% convertible senior subordinated notes outstanding.

Other long-term obligations

Other long-term obligations consist of the following as of December 31 (in thousands):

	2003	2002
Master equipment financing agreement, due May 2006, monthly payments of $51, including interest at 8.0%	$ 1,146	$ 1,640
Master equipment financing agreement, due December 2006, monthly payments of $35, including interest at 7.0%	893	1,247
Master equipment financing agreement, due October 2006, monthly payments of $35, including interest at 7.1%	847	1,190
Master equipment financing agreement, due October 2004, monthly payments of $48, including interest at 7.1%	469	997
Accrued rent	1,179	10
Interest rate swap related to aircraft	810	1,191
Accrued preferred stock dividend	—	500
Other long-term obligations	124	89
	5,468	6,864
Less current portion	(1,766)	(2,250)
	$ 3,702	$ 4,614

For each borrowing, we granted the lender a security interest in specified fixed assets. The net book value of these assets at December 31, 2003 was approximately $3.6 million. Maturities of the convertible subordinated and convertible senior subordinated notes as well as other long-term obligations listed above, excluding the interest rate swap, at December 31, 2003 are as follows (in thousands):

Years Ending December 31,	
2004	$ 1,766
2005	1,216
2006	441
2007	206
2008	115,253
Thereafter	75,875
	$194,757

7. Capital Stock

In November 1999, we completed a $10 million private placement of shares of Series D convertible preferred stock, or Series D, and warrants to acquire shares of common stock. Each share of Series D was convertible into 462.427 shares of common stock. The warrants have exercise prices of $2.38 or $2.625 per share of common stock and expire in November 2004. During 2001, the remaining 2,425 shares of Series D were converted into 1,121,386 shares of common stock. Warrants totaling 165,000 and 204,524 were exercised on a net basis and 133,839 and 146,978 shares of common stock were issued during 2003 and 2002, respectively. No warrants were exercised during 2001. There are warrants to purchase 40,000 shares of common stock outstanding as of December 31, 2003.

Investors of the Series D shares were entitled to receive four annual dividends at a rate per share of 5% per year payable on each September 30, commencing September 30, 2000 regardless of whether the shares had been converted or not. We paid dividends with 44,165, 113,630 and 20,785 shares of our common stock in 2003, 2002 and 2001, respectively. There is no future dividend obligation as of December 31, 2003.

In February 2000, we completed a $40 million private placement of shares of common stock. In connection with the offering, we issued warrants to purchase 170,000 shares of common stock to a placement agent. The warrants are exercisable at a price of $13.20 per share and expire in February 2005. The shares of common stock issued and issuable upon the exercise of the warrants have certain registration rights. No warrants were exercised during 2003 or 2002. During 2001 warrants to purchase 20,000 shares were exercised and 20,000 shares of common stock were issued. There are warrants to purchase 109,125 shares of common stock outstanding as of December 31, 2003.

In May 2002, our Board of Directors authorized a stock repurchase program for up to three million shares of our common stock. Repurchases were made in the open market at the discretion of our management. Through December 31, 2002, approximately 2.6 million shares were repurchased and retired for a total cost of $16.4 million. No shares were repurchased in 2003.

Common Stock Reserved

A summary of common stock reserved for issuance is as follows as of December 31, 2003:

Convertible senior subordinated notes	14,101,458
Convertible subordinated notes	871,765
Equity incentive plans	6,158,204
Common stock warrants	599,125
Restricted share rights	103,665
Employee stock purchase plan	243,718
	22,077,935

8. Stock Options, Restricted Stock and Warrants

Stock Options

During 2003, shareholders approved the 2003 Equity Incentive Plan, ("2003 Plan"), which replaced the 1994 Equity Incentive Plan, ("1994 Plan"). The 1994 Plan has since been terminated, except with respect to outstanding awards previously granted thereunder. The 2003 Plan provides for (a) the grant of nonqualified and/or incentive stock options, stock appreciation rights and restricted stock, (b) annual, automatic, non-discretionary grants of non-qualified stock options to non-employee members of the Company's board of directors and (c) the award of stock-based performance bonuses. There were 1,443,289 shares authorized under the 2003 Plan.

	Shares Under Option	Weighted Average Exercise Price Per Share
Balance January 1, 2001	3,029,105	$ 16.73
Granted	1,583,129	25.78
Canceled	(40,478)	36.08
Exercised	(324,182)	2.99
Rescinded	91,384	2.91
Balance December 31, 2001 (1,812,564 exercisable)	4,338,958	20.59
Granted	1,871,789	6.62
Canceled	(349,544)	24.74
Exercised	(146,908)	2.99
Balance December 31, 2002 (2,655,159 exercisable)	5,714,295	16.21
Granted	1,403,425	8.14
Canceled	(687,135)	16.02
Exercised	(521,470)	3.33
Balance December 31, 2003 (3,314,006 exercisable)	5,909,115	$ 15.45

The weighted average exercise price of shares exercisable at December 31, 2003, 2002 and 2001 was $18.87, $16.19 and $10.40, respectively.

	Options Outstanding			Exercisable Options Outstanding (Without Restriction)	
Range of Exercise Prices	Number Outstanding 12/31/03	Weighted Average Remaining Contractual Life	Weighted Average Exercise Price	Number Exercisable	Weighted Average Exercise Price
$ 2.00 – $ 4.94	1,864,228	6.71 Years	$ 3.50	1,330,678	$ 3.21
$ 6.84 – $11.09	1,756,215	8.98 Years	$ 8.36	302,587	$ 8.88
$12.10 – $20.48	191,110	8.67 Years	$ 14.91	52,673	$ 17.16
$22.40 – $30.06	1,364,962	7.53 Years	$ 26.49	910,368	$ 26.60
$39.56 – $47.28	732,600	6.90 Years	$ 42.44	717,700	$ 42.44
$ 2.00 – $47.28	5,909,115	7.66 Years	$ 15.45	3,314,006	$ 18.87

The weighted average fair value of options granted during 2003 was $5.85, during 2002 was $4.90 and during 2001 was $19.66. As of December 31, 2003, 249,089 shares of common stock were available for future grants.

SFAS 123 encourages, but does not require, entities to adopt the fair value method of accounting for their stock-based compensation plans. Under this method, compensation cost for stock-based compensation plans is measured at the grant date based on the fair value of the award and is recognized over the vesting period. Pro forma information regarding net loss and net loss per share required by SFAS 123 as disclosed in Note 1 has been determined as if we had accounted for our employee options under the fair value method of SFAS 123. Fair value is determined using a Black-Scholes option pricing model that takes into account (1) the stock price at the grant date, (2) the exercise price, (3) an assumed four and a half-year expected life (4) no expected dividends, (5) a risk-free interest rate of 3.2%, 3.0% and 4.5%, in 2003, 2002 and 2001, respectively, and (6) a volatility factor of 1.02, 1.05 and 1.06, in 2003, 2002 and 2001, respectively.

During the year ended December 31, 2000, in connection with the grant of certain options to employees, we recorded $800,000 of deferred stock compensation, which was included in deferred charges, representing the difference between the exercise price and the fair value of our common stock on the measurement date. In connection with these options, we recognized stock compensation expense of approximately $20,500 and $145,000 during 2003 and 2001, respectively, and reversed previously recorded stock compensation expense of $56,000 during 2002.

In accordance with EITF 96-18, all equity instruments issued to non-employees are accounted for at the estimated fair value of the equity instruments. The value of the instrument is amortized to expense over the vesting period with final valuation measured on the vesting date. At December 31, 2003, 2002 and 2001, options to acquire 132,000, 90,508 and 153,674 shares of common stock, respectively, are accounted for based on their estimated fair values. We recognized compensation expense in 2003 and 2001 of approximately $375,000 and $1.6 million, respectively, and reversed previously recorded non-employee equity-based compensation expense of $188,000 in 2002.

We also issued 103,665 restricted share rights to non-employees in 1998 for which ownership vests upon the achievement of a future event (see Note 14). Compensation related to these rights will be measured as the event becomes probable with final valuation on the vesting date.

In December 1999, the Compensation Committee of the Board of Directors authorized the issuance of 243,903 restricted share rights valued at $746,000 to executive officers and certain employees. During 2002 and 2001, 20,000 and 13,947 restricted share rights were canceled, respectively, due to employee terminations. The

share value was recorded as deferred compensation and included in deferred charges on the balance sheet, and was amortized over the three year vesting period. We recognized compensation related expense of $185,000 and $206,000 during 2002 and 2001 respectively. In December 2002, the share rights vested and we issued 142,433 shares of our common stock. At the election of certain right holders, 39,298 shares of our common stock were utilized to pay the holders minimum withholding tax liability.

In May 2001, the Compensation Committee of the Board of Directors approved the rescission of certain stock option exercises that two officers and a consultant had made in January 2001. In exchange for the return of 91,384 shares of our common stock, we reinstated their original option grant and returned to them the related exercise price of $266,000. These options are subject to variable stock compensation accounting until the earlier of the expiration of the option grants or the end of the tax year in which the options are exercised. As of December 31, 2003, 19,170 options are still subject to variable stock compensation accounting.

Restricted Stock

In 2003, the Compensation Committee of the Board of Directors authorized the issuance of 735,200 restricted shares of common stock to officers and certain employees, 504,200 of which were issued in 2003. The remaining 231,000 were issued in 2004, 201,000 of which were issued upon the closing of the merger with Novuspharma (see Note 18). The weighted average fair value of restricted shares issued during 2003 was $9.86. The shares issued in 2004 were subject to variable stock compensation accounting treatment from the date of grant until issued. We recorded deferred stock-based compensation related to the 735,200 restricted shares granted of approximately $6.6 million, which represents the fair value of the Company's stock issued on the date of grant. Such value is recognized as an expense over the vesting periods of six months to four years. During 2003, we recognized total compensation expense of approximately $625,000 of which $129,000 related to the restricted shares issued in 2004.

Warrants

In 1998, we issued warrants to purchase 350,000 shares of our common stock in connection with a license agreement with PG-TXL Company, L.P. These warrants become exercisable only upon the occurrence of certain specified events. In October 2001, we entered into a licensing agreement with Chugai Pharmaceutical Co, Ltd., allowing them to develop XYOTAX within certain territories. The signing of this agreement qualified as an exercise event, and these warrants became exercisable at an exercise price of $20. The warrants expire in November 2008. We recorded research and development expense of $9.2 million in the fourth quarter of 2001 based upon the fair value of the warrants on the date of the event. No warrants have been exercised.

In 2002, we entered into an agreement with The Hope Heart Institute for research services. In connection with this agreement, we issued fully-vested warrants to purchase 100,000 shares of common stock at an exercise price of $10.00. The warrants expire in November 2007. We recorded related expense of $511,000 during 2002 based upon the fair value of the warrants on the date of the event. Phillip M. Nudelman, Ph.D., is a member of our board of directors and our audit committee, and is the President, Chief Executive Officer and a member of the board of directors of the Hope Heart Institute (see Note 13).

Employee Stock Purchase Plan

We maintain an Employee Stock Purchase Plan, or the Purchase Plan, under which eligible employees may purchase a limited number of shares of our common stock at 85% of the lower of the subscription date fair market value and the purchase date fair market value. There are two six-month offerings per year. Under the Purchase Plan, we issued 76,390, 120,593 and 23,567 shares to employees in 2003, 2002 and 2001, respectively. There is a balance of 243,718 shares reserved for future purchases at December 31, 2003.

9. Employee Benefit Plan

CTI's employees participate in the Cell Therapeutics, Inc. 401(k) Plan whereby eligible employees may defer up to 80% of their compensation, up to the annual maximum allowed by the Internal Revenue Service. We may make a discretionary matching contributions based on certain plan provisions. We made contributions of approximately $203,000 during the year ended December 31, 2002. We did not make any contributions during the years ended December 31, 2003 and 2001.

10. Segment Information and Other Data

We consider our operations to be a single operating segment, focused in the development, acquisition, and commercialization of novel treatments for cancer. Financial results of this reportable segment are presented in the accompanying consolidated financial statements.

During the years ended December 31, 2003, 2002 and 2001, product sales from major customers as a percentage of total product sales were as follows:

	2003	2002	2001
Customer A	35%	37%	31%
Customer B	30%	29%	27%
Customer C	24%	22%	34%

The following table depicts revenues attributed to external customers based the following geographic locations (in thousands):

	Year Ended December 31,		
	2003	2002	2001
North America	$20,525	$10,930	$6,130
Asia	2,660	5,503	106
Europe	1,580	463	—
	$24,765	$16,896	$6,236

11. Net Loss Per Share

Basic and diluted net loss per share is calculated using the average number of common shares outstanding as follows (in thousands, except per share amounts):

	Year Ended December 31,		
	2003	2002	2001
Net loss applicable to common shareholders	$(130,031)	$(49,903)	$(81,645)
Basic and diluted:			
Weighted average common shares outstanding	33,515	33,763	33,822
Less weighted-average restricted shares outstanding	(97)	—	—
Shares used in calculation of basic and diluted net loss per common share	33,418	33,763	33,822
Net loss per share:			
Basic and diluted	$ (3.89)	$ (1.48)	$ (2.41)

As of December 31, 2003, 2002 and 2001, options, warrants, unvested restricted share awards and rights, convertible debt and convertible preferred stock aggregating 22,089,328, 15,999,850, and 10,660,068 common equivalent shares, respectively, prior to the application of the treasury stock method for options and warrants, were not included in the calculation of diluted net loss per share as they are anti-dilutive.

12. Income Taxes

As of December 31, 2003, we had net operating loss carryforwards of approximately $467.7 million, of which $43.9 million relates to stock option deductions, and research and development credit carryforwards of approximately $15.2 million. The carryforwards begin to expire in 2007. Utilization of stock option deductions will not result in a reduction of tax expense.

Due to rounds of equity financings and other ownership changes as defined in Section 382 of the Internal Revenue Code of 1986, as amended, or the Code, we incurred "ownership changes" pursuant to the Code. Accordingly, our use of the net operating loss carryforwards is limited to approximately $102.4 million annually for losses incurred prior to September 30, 2000 (which aggregate $209.7 million) and may be subject to additional limitations thereafter. Additionally, all losses incurred prior to March 27, 1997 (which aggregate $75.5 million) are subject to an annual limitation of approximately $4.2 million. To the extent that any single-year loss is not utilized to the full amount of the limitation, such unused loss is carried over to subsequent years until the earlier of its utilization or the expiration of the relevant carryforward period, which is generally 15-20 years. Approximately $13.2 million of pre-March 27, 1997 losses are expected to expire unused in the year 2012.

Deferred income taxes reflect the net tax effects of temporary differences between the carrying values of assets and liabilities for financial reporting purposes and income tax reporting. We recognized a valuation allowance equal to the deferred tax assets due to the uncertainty of realizing the benefits of the assets. Our valuation allowance increased $43.0 million, $18.8 million and $25.4 million during 2003, 2002 and 2001, respectively.

Significant components of our deferred tax assets and liabilities as of December 31 are as follows (in thousands):

	2003	2002
Deferred tax assets:		
Net operating loss carryforwards	$ 159,014	$ 117,335
Research and development tax credit carryforwards	15,164	11,408
Warrants issued	3,306	3,306
Charitable contributions carryforward	1,382	1,215
Other deferred tax assets	2,390	4,439
Gross deferred tax assets	181,256	137,703
Less valuation allowance	(180,317)	(137,358)
	939	345
Deferred tax liabilities:		
Prepaid expenses	(379)	(345)
Deductions for tax in excess of financial statements	(560)	—
Gross deferred tax liabilities	(939)	(345)
Net deferred tax assets	$ —	$ —

13. Related Party Transactions

In the case of termination, we have severance agreements with our executive officers that provide benefits for either twelve or eighteen months.

Loans to executive officers totaling $225,000 were outstanding as of December 31, 2001. Each of the full-recourse notes had a term of four years and carried interest at approximately 5%. The full balance of principal and accumulated interest were repaid to us during 2002.

In April 2002, we extended a loan of $3.5 million to our President and Chief Executive Officer, Dr. James A. Bianco. The loan is a full-recourse loan and is secured by a mortgage on certain property owned by Dr. Bianco, as well as 255,381 shares of Cell Therapeutics, Inc. common stock owned by Dr. Bianco. The loan

bears interest at the six-month LIBOR rate plus 2.25%, adjusted semi-annually (3.43% at October 8, 2003). Interest is due on October 8th and April 8th of each year that the loan is outstanding and principal is due April 8, 2004. During 2003 and 2002, we received approximately $130,000 and $80,000, respectively, in interest payments related to this loan.

In November 2002, we entered into a Sponsored Research Agreement with the Hope Heart Institute, a non-profit corporation, to perform research specified by us and reviewed by a joint research committee comprised of individuals from our company and from the Hope Heart Institute. The Agreement has a term of two years and in addition to monthly payments, we granted a fully vested warrant to the Hope Heart Institute to purchase 100,000 shares of our common stock at a purchase price of $10.00 per share (see Note 8). Phillip M. Nudelman, Ph.D., is a member of our board of directors and our audit committee, and President, Chief Executive Officer and a member of the board of directors of the Hope Heart Institute. Jack W. Singer, M.D., is a member of our board of directors and our Executive Vice President, Chief Medical Officer, and is a member of the Scientific Advisory Board of the Hope Heart Institute. During 2003, we made payments to the Hope Heart Institute of $181,000 for research related expenses and $45,000 in charitable contributions. We also made charitable contributions during 2002 and 2001 of $55,000 and $10,000, respectively. In 2004, we terminated the Sponsored Research Agreement with the Hope Heart Institute.

14. Significant Agreements

Chugai Pharmaceutical Co., Ltd.: In October 2001, we entered into a licensing agreement with Chugai Pharmaceutical Co., Ltd., or Chugai, for the development and commercialization of XYOTAX. This agreement grants an exclusive license to Chugai to develop and commercialize XYOTAX in several Asian markets. Upon execution of the agreement, Chugai paid us a $3.0 million initial payment, which we recorded as deferred revenue and which is being recognized as revenue over the estimated development period of approximately six years on a straight-line basis. We recognized $531,000, $530,000 and $106,000 of revenue during 2003, 2002 and 2001, respectively. Under the agreement, we may also receive future milestone payments totaling up to $13.0 million upon Chugai's achievement of certain product development milestones, and we are entitled to receive royalties on product sales in the territories covered under the agreement. We received and recognized as revenue approximately $1.1 million and $1.9 million in development expenditure reimbursements from Chugai during 2003 and 2002, respectively, as well as a $3.0 million milestone payment in 2002. Chugai has also committed to incur up to $54 million in development expenditures over the course of the licensing agreement. The agreement will terminate on a country-by-country basis upon the earlier to occur of the expiration of the applicable patent rights in a given country or fifteen years from the date of the first commercial sale of XYOTAX in such country.

PG-TXL Company, L.P.: In 1998, we entered into an agreement with PG-TXL Company, L.P. granting us an exclusive worldwide license for the rights to polyglutamic acid paclitaxel, a water soluble form of the cancer drug, paclitaxel and to all potential uses of PG-TXL Company, L.P.'s polymer technology. Under the terms of the agreement, we acquired the rights to fund the research, development, manufacture, marketing and sale of anti-cancer drugs developed using this polymer technology.

We made $3.0 million in milestone payments during 2002 and a $2.0 million milestone payment in 2000 to PG-TXL Company L.P. In addition, we will be obligated to make future milestone payments upon the attainment of significant achievements as defined in the agreement of up to $15.5 million. We also granted warrants to purchase 350,000 shares of our common stock to PG-TXL Company, L.P., which became exercisable upon our entering a licensing agreement for XYOTAX with Chugai Pharmaceutical Co., Ltd (see Note 8).

We also entered into Signing Bonus and Restricted Stock and Share Grant Agreements and Consulting Agreements with certain individuals affiliated with PG-TXL Company, L.P., or the PG-TXL Affiliates. Under the terms of these agreements, we issued 51,835 restricted shares of common stock. These shares vested in November 1999 upon the issuance of a patent, whereupon we recorded an expense of $91,000 in accordance with EITF 96-18. The Company also granted 103,665 restricted share rights to the PG-TXL Affiliates, which also vest

upon certain performance conditions. These performance conditions include successfully completing a phase III clinical trial of a licensed product and receiving regulatory approval of a New Drug Application, or NDA, by the FDA. We will begin to record compensation expense at the time the vesting of the share rights become probable. Our obligation to pay consulting fees ended in 2002. We paid consulting fees to the PG-TXL Affiliates of $75,000 in 2001.

Nippon Shinyaku Co., Ltd.: In December 2002, we entered into a distribution agreement with Nippon Shinyaku Co., Ltd., or Nippon. This agreement grants an exclusive license to Nippon to market and distribute TRISENOX (arsenic trioxide) injection in Japan, South Korea, and Taiwan. Upon execution of the agreement, Nippon paid us a $750,000 initial payment, which we recorded as deferred revenue and which is being recognized on a straight-line basis over the estimated time to receive marketing authorization of approximately eighteen months. We recognized $487,000 and $21,000 of revenue during 2003 and 2002. We also received and recognized as revenue a $500,000 milestone payment in 2003 related to Nippon's submission of an NDA in Japan and may also receive future milestone payments totaling up to $3.5 million upon attainment of certain achievements.

15. Acquisition of PolaRx Biopharmaceuticals, Inc.

On January 7, 2000, we entered into a Merger Agreement to acquire PolaRx Biopharmaceuticals, Inc., or PolaRx, a biopharmaceutical company that owned the rights to TRISENOX (arsenic trioxide), an anti-cancer compound for which we submitted and received approval for an NDA with the FDA. The acquisition was accounted for as a purchase transaction. Under the terms of the Merger Agreement, we have made an additional contingent payment of approximately $4.0 million for meeting a $10.0 million TRISENOX sales threshold in 2002 and are currently obligated to pay $5.0 million in cash for achieving a $20.0 million TRISENOX sales threshold in 2003. These amounts were recorded as goodwill and the obligation was classified as a short-term liability as of December 31, 2003. We are also required to make an additional payout of a 2% royalty on total net sales, payable in cash or common stock at the then fair market of our stock, for any calendar year that sales of TRISENOX exceed $40.0 million.

16. PanGenex, Inc.

In June 2000, we founded PanGenex, Inc., or PanGenex, a majority-owned subsidiary focused on identifying novel drug development targets using the recently completed human genome sequence database. We provided funds and administrative services to support PanGenex's research and development efforts totaling $3.1 million during 2003 and $2.5 million during 2002 and 2001. Minority interests are not reflected in the balance sheet as all losses of the entity are funded by us with no obligation of reimbursement by the minority shareholders. In February 2004, PanGenex's board of directors and shareholders approved the termination of its development program and the dissolution of the company.

17. Restructuring Activities

In 2003, we began to implement plans to reduce our workforce to eliminate areas of redundancy and capitalize on synergies and efficiencies expected to be created by the merger with Novuspharma. As of December 31, 2003, a total of 49 employees had been terminated or received notice of termination. Employee separation costs associated with the reorganization consist primarily of one-time termination benefits, principally severance payments and for certain key employees include retention bonuses, and are recognized in accordance with SFAS No. 146, "Accounting for Costs Associated with Exit and Disposal Activities." During the year ended December 31, 2003 we recorded approximately $1.5 million in research and development expenses for employee termination benefits related to terminated employees, approximately $0.6 million of which was paid out during 2003 with approximately $0.9 million accrued at December 31, 2003. We expect to incur additional employee termination benefit expenses of approximately $0.5 million during 2004.

18. Subsequent Event—Acquisition of Novuspharma S.p.A.

On January 1, 2004, we completed the merger of Novuspharma into CTI ("the Merger"). Novuspharma's development strategy focuses on the treatment of cancer, both by modifying existing chemotherapies to make them more effective and less toxic and by developing completely novel therapeutics for treatment of the disease. Following completion of the merger, Novuspharma's assets and liabilities were contributed to our newly established European Branch, CTI (Europe).

As a closing condition to the merger, we applied and received approval for the listing of CTI common stock on the Nuovo Mercato (a stock exchange) in Italy and began trading under the ticker symbol "CTIC" effective January 2, 2004.

At the time of the merger, approximately 15,629,000 shares of CTI common stock were issued based on the conversion of approximately 6,379,000 outstanding Novuspharma ordinary shares multiplied by the fixed exchange ratio of 2.45, with cash paid in lieu of fractional shares. The total cost of the merger is estimated to be approximately $196,260,000, based on a fair value of CTI common stock of $12.14, the average price of our common stock during a seven-day period beginning three trading days before and ending three trading days after the public announcement of the merger (June 12, 13, 16, 17, 18, 19 and 20, 2003) and related transaction costs.

The estimated total purchase price of the merger is as follows (in thousands):

Total value of CTI common stock	$189,760
Estimated direct transaction costs	6,500
Total estimated purchase price	$196,260

The acquisition is expected to be accounted for in 2004 as an asset purchase for financial reporting purposes, in accordance with generally accepted accounting principles. The total estimated purchase price as shown in the above table is expected to be allocated to Novuspharma's net tangible and intangible assets, including in-process research and development, or IPRD, based on their relative fair values as of January 1, 2004. These fair values are being determined through a valuation performed by an independent third party. The estimated purchase price in excess of these fair values is then to be allocated on a pro rata basis to IPRD and to non-monetary long-lived assets. IPRD represents the value of Novuspharma's research and development projects in progress and is expected to be written off and charged to operations upon the close of the merger in accordance with SFAS 2, Accounting for Research and Development Costs. Other identified intangible assets with finite lives will be amortized over those lives and will be reviewed for impairment on at least an annual basis. No goodwill is expected to be recognized as a result of the Novuspharma transaction. Novuspharma's results of operations will be included in CTI's statement of operations from January 1, 2004.

The preliminary allocation of the estimated purchase price is as follows (in thousands):

	December 31, 2003
Cash and cash equivalents	$ 92,491
Accounts receivable	1,305
Prepaid expenses and other current assets	154
Property and equipment	14,231
Other intangible assets	4,929
Other assets and deferred charges	7,286
Accounts payable and accrued expenses	(10,002)
Current portion of deferred revenue	(549)
Current portion of long-term obligations	(132)
Other long-term obligations, less current portion	(2,129)
Acquired in-process research and development	88,676
Total	$ 196,260

In-process research and development

Acquired IPRD for the Merger was evaluated utilizing the present value of the estimated after-tax cash flows expected to be generated by purchased technology, which, at the effective time of the Merger, had not reached technological feasibility. The cash flow projections for revenues are based on estimates of growth rates and the aggregate size of the respective market for each product, probability of technical success given the stage of development at the time of acquisition, royalty rates based on an assessment of industry market rates, product sales cycles, and the estimated life of a product's underlying technology. The projections for revenues include assumptions that significant cash flows from product revenue would commence in 2006. Estimated operating expenses and income taxes are deducted from estimated revenue projections to arrive at estimated after-tax cash flows. Projected operating expenses include cost of goods sold, general and administrative expenses, and research and development costs. The rate utilized to discount projected cash flows was 30%, and was based on the relative risk of each in-process technology and was based primarily on risk adjusted rates of return for research and development and our weighted average cost of capital at the time of the Merger.

Acquired IPRD of approximately $88.7 million represents the values determined by our management to be attributable to the IPRD assets associated with the technology acquired in the Merger as follows (in thousands):

BBR 2778 (NHL)	$81,740
BBR 2778 (MS)	6,936
	$88,676

The most clinically advanced product in Novuspharma's product development pipeline is pixantrone, also known as BBR 2778. Pixantrone is in Phase III clinical trials in indolent NHL, in Phase II clinical trials in aggressive NHL, and is expected to enter clinical trials in multiple sclerosis, or MS, during the first half of 2004. The trial for indolent NHL has been modified and reduced to a registration supporting study, based on our strategy to conduct a pivotal phase III trial in aggressive NHL, which we believe provides the fastest route to registration for pixantrone. Pixantrone produced positive results in terms of efficacy and safety in preclinical trials and in Phase I and II trials. In preclinical studies, pixantrone has shown notable activity in animal models of cancer, particularly in models of blood-born tumors such as lymphoma. For purposes of the valuation, Novuspharma has estimated that its future research and development costs for pixantrone will be approximately $35.8 million through the launch year. Novuspharma expects that the new drug application to the FDA for pixantrone will be filed in 2005 at the earliest. For purposes of the valuation, the estimated launch of pixantrone for aggressive NHL is 2006 with revenues for indolent NHL and MS being generated through off label usage. However, significant risk remains relative to the uncertainties inherent in clinical trials and in ultimately obtaining regulatory approval.

The values associated with these programs represent values ascribed by CTI's management, based on the discounted cash flows currently expected from the technologies acquired and a pro rata allocation of the purchase price in excess of the estimated fair values of non-monetary assets acquired. The estimated cash flows include the estimated development costs and estimated product launch dates referred to above with estimated lives of these products ranging from twelve to fourteen years after approval. If these projects are not successfully developed, our business, results of operations and financial condition may be adversely affected. As of the date of the Merger, we concluded that once completed, the technologies under development can only be economically used for their specific and intended purposes and that the in-process technology has no alternative future use after taking into consideration the overall objectives of the project, progress toward the objectives, and uniqueness of developments to these objectives.

Pro forma results of operations (unaudited)

The following table sets forth pro forma combined historical results of operations of CTI and Novuspharma as if the Merger occurred on January 1, 2002.

The unaudited pro forma combined financial data is not intended to represent or be indicative of our consolidated results of operations that would have been reported had the merger been completed as of the dates presented, and should not be taken as representative of our future consolidated results of operation.

	Year Ended December 31,	
	2003	2002
Revenues	$ 26,911	$ 22,150
Net loss from operations	$(168,631)	$(81,017)
Basic and diluted net loss per common share	$ (3.44)	$ (1.64)

The pro forma results do not include the pro forma effect or the charge for IPRD as this is a non recurring charge resulting from the acquisition.

19. Subsequent Event—Legal Proceedings

On February 10, 2004, Micromet AG ("Micromet"), a Munich, Germany-based company, filed a complaint against CTI in federal district court in the State of Washington, asserting that CTI (Europe), the Company's European Branch (formerly known as Novuspharma S.p.A.), had purportedly breached a contract with Micromet for the development of MT-201, a fully human antibody targeting the EP-CAM molecule. The claims allege that CTI (Europe) failed to pay for certain milestones and development expenses owed under the contract. On February 23, 2004, CTI answered the complaint, denying the substance of the allegations, and filed counterclaims for breach of contract and for rescission of the contract based on Micromet's misrepresentations and failures to disclose material information which includes preclinical tests which were determined to be invalid. Management believes that Micromet's complaint is without merit and intends to vigorously defend against the Micromet action, as well as to seek recovery based upon its counterclaims. Management believes the ultimate outcome will not have a material adverse impact on the Company's financial condition or results of operations.

20. Unaudited Quarterly Data

The following table presents summarized unaudited quarterly financial data (in thousands, except per share data):

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
2003				
Revenues	$ 4,881	$ 6,129	$ 6,539	$ 7,216
Gross profit	4,735	5,877	6,318	6,995
Operating expenses	34,116	35,418	36,308	41,508
Net loss	(30,469)	(30,776)	(32,119)	(36,667)(i)
Net loss applicable to common shareholders	(30,469)	(30,776)	(32,119)	(36,667)(i)
Net loss per common share—basic and diluted	(0.92)	(0.93)	(0.96)	(1.09)(i)
2002				
Revenues	$ 1,683	$ 2,845	$ 4,412	$ 7,956
Gross profit	1,578	2,725	4,248	7,922
Operating expenses	24,030	27,905	32,953	30,795
Net income (loss)	(23,560)	(26,488)	(30,392)	30,537(ii)
Net income (loss) applicable to common shareholders	(23,560)	(26,488)	(30,392)	30,537(ii)
Net income (loss) per common share—basic	(0.67)	(0.77)	(0.93)	0.93(ii)
Net income (loss) per common share—diluted	(0.67)	(0.77)	(0.93)	0.88(ii)

(i) Reflects deferred rent expense adjustment of approximately $1.2 million related to escalation clauses contained in our corporate office leases.
(ii) Reflects gain on exchange of convertible subordinated notes of $55.3 million.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures

(a) Evaluation of Disclosure Controls and Procedures

We carried out an evaluation, under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, of the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, as of the end of the period covered by this report. Based upon that evaluation, our principal executive officer and principal financial officer concluded that our disclosure controls and procedures were effective in timely alerting them to material information relating to us (including our consolidated subsidiaries) required to be included in our periodic SEC filings.

(b) Changes in Internal Controls

During our fourth fiscal quarter, there were no significant changes in our internal controls or in other factors that have materially affected or are reasonably likely to materially affect our internal controls.

PART III

Item 10. Directors and Executive Officers of the Registrant

Executive Officers

The following table sets forth certain information with respect to our executive officers:

Name	Age as of 12/31/03	Position
Stephen J. Aselage	52	Executive Vice President, Global Commercial Operations
James A. Bianco, M.D.	47	President, Chief Executive Officer
Louis A. Bianco	51	Executive Vice President, Finance and Administration
James Canfield	46	Executive Vice President, Chief Administrative Officer
Jack W. Singer, M.D.	61	Executive Vice President, Research Program Chairman
Silvano Spinelli	51	Executive Vice President of Development and Managing Director of European Operations

Mr. Aselage has been our executive vice president, global commercial operations since February 2004. From February 1999 to January 2004 he was senior vice president, North American sales and marketing at Sangstat, which was acquired by Genzyme in December 2003. He received his B.S. in biology from the University of Notre Dame.

Dr. Bianco is our principal founder and has been our president and chief executive officer since February 1992 and one of our directors since our inception in September 1991. Prior to joining us, Dr. Bianco was an assistant professor of medicine at the University of Washington, Seattle, and an assistant member in the clinical research division of the Fred Hutchinson Cancer Research Center, the world's largest bone marrow transplant center. From 1990 to 1992, Dr. Bianco was the director of the Bone Marrow Transplant Program at the Veterans Administration Medical Center in Seattle. Dr. Bianco received his B.S. Degree in biology and physics from New York University and his M.D. from Mount Sinai School of Medicine. Dr. Bianco is the brother of Louis A. Bianco, our executive vice president, finance and administration.

Mr. Bianco is one of our founders and has been our executive vice president, finance and administration since February 1, 1992, and was a director from our inception in September 1991 to April 1992 and from April 1993 to April 1995. From January 1989 through January 1992, Mr. Bianco was a vice president at Deutsche Bank Capital Corporation in charge of risk management. Mr. Bianco is a Certified Public Accountant and received his M.B.A. from New York University. Mr. Bianco and Dr. Bianco are brothers.

Mr. Canfield has been our executive vice president, chief administrative officer since December 2001. From May 2001 to December 2001, Mr. Canfield served as our vice president, human resource development and administrative services. From September 1999 to May 2001, Mr. Canfield was a senior consultant at Cobus Group and from April 1996 to August 1999, served as the head of human resources at Sonus Pharmaceuticals, Inc. Additionally, he has held senior human resource positions at Northern Automotive Corporation and Lucky Stores. Mr. Canfield received his B.S. Degree in human resources management from Kennedy Western University.

Dr. Singer is one of our founders and directors and currently serves as our executive vice president, research program chairman. Dr. Singer has been one of our directors since our inception in September 1991. From April 1992 to July 1995, Dr. Singer was our executive vice president, research and development. Prior to joining us, Dr. Singer was a professor of medicine at the University of Washington and a full member of the Fred Hutchinson Cancer Research Center. From 1975 to 1992, Dr. Singer was the chief of medical oncology at the Veterans Administration Medical Center in Seattle. Dr. Singer received his M.D. from State University of New York, Downstate Medical College.

Mr. Spinelli was a founder of Novuspharma, which we recently acquired, and was Novuspharma's chief executive officer and managing director since January 1, 1999. He has been our managing director of European operations and one of our directors since January 2004. He joined Novuspharma in 1999 after having worked for Boehringer Mannheim Italia S.p.A. since 1980, holding a number of positions, which culminated in his appointment as R&D director in 1995. Prior to joining Boehringer Mannheim, Mr. Spinelli was assistant to the professor of quantitative analysis at the University of Pisa and responsible for the Chemical Synthesis Laboratory at Unibos Company. Mr. Spinelli received his degree in chemistry in 1976 from the University of Pisa.

Audit Committee Financial Expert

The Company's board of directors has determined that Audit Committee member Max Link is an audit committee financial expert as defined by Item 401(h) of Regulations S-K of the Securities Exchange Act of 1934, as amended (the "Exchange Act") and is independent within the meaning if Item 7(d)(3)(iv) of Schedule 14A of the Exchange Act.

Audit Committee

The Company has an Audit Committee established in accordance with Section 3(a)(58)(A) of the Exchange Act. Jack Bowman, Max Link and Phil Nudelman are the members of the Company's Audit Committee.

Code of Ethics

The Company has adopted a code of ethics for its senior executive and financial officers (including its principal executive officer and principal financial officer). The Code of Ethics for Senior Executive and Financial Officers is available on the Company's website at http://www.cticseattle.com/investors-management.htm. Shareholders may request a free copy of the Code of Ethics for Senior Executive and Financial Officers from:

Cell Therapeutics, Inc.
Attention: Investor Relations
501 Elliott Avenue West, Suite 400
Seattle, WA 981109
(206) 282-7100

Corporate Governance Guidelines

The Company has adopted Corporate Governance Guidelines, which are available on the Company's website at http://www.cticseattle.com/investors-management.htm. Shareholders may request a free copy of the Corporate Governance Guidelines at the address and phone numbers set forth above.

The information required by Part III, Item 10, to the extent not set forth herein, will be incorporated herein by reference from the registrant's definitive proxy statement relating to the 2004 annual meeting of shareholders, which definitive proxy statement or amendment to this annual report shall be filed with the Securities and Exchange Commission within 120 days after the end of the fiscal year to which this Report relates.

Item 11. Executive Compensation

The information required by Part III, Item 11, will be incorporated herein by reference from the registrant's definitive proxy statement relating to the 2004 annual meeting of shareholders, which definitive proxy statement or amendment to this annual report shall be filed with the Securities and Exchange Commission within 120 days after the end of the fiscal year to which this Report relates.

Item 12. Security Ownership of Certain Beneficial Owners and Management

The information required by Part III, Item 12, will be incorporated herein by reference from the registrant's definitive proxy statement relating to the 2004 annual meeting of shareholders, which definitive proxy statement or amendment to this annual report shall be filed with the Securities and Exchange Commission within 120 days after the end of the fiscal year to which this Report relates.

Item 13. Certain Relationships and Related Transactions

The information required by Part III, Item 13, will be incorporated herein by reference from the registrant's definitive proxy statement relating to the 2004 annual meeting of shareholders, which definitive proxy statement or amendment to this annual report shall be filed with the Securities and Exchange Commission within 120 days after the end of the fiscal year to which this Report relates.

Item 14. Principal Accountant Fees and Services

The information required by Part III, Item 14, will be incorporated herein by reference from the registrant's definitive proxy statement relating to the 2004 annual meeting of shareholders, which definitive proxy statement or amendment to this annual report shall be filed with the Securities and Exchange Commission within 120 days after the end of the fiscal year to which this Report relates.

PART IV

Item 15. Exhibits, Financial Statement Schedules And Reports On Form 8-K

(a) *Financial Statements and Financial Statement Schedules*

(i) Financial Statements

Report of Ernst & Young LLP, Independent Auditors
Consolidated Balance Sheets
Consolidated Statements of Operations
Consolidated Statements of Shareholders' Equity (Deficit)
Consolidated Statements of Cash Flows
Notes to Consolidated Financial Statements

(ii) Financial Statement Schedules

II—Valuation and Qualifying Accounts

All other schedules have been omitted since they are either not required, are not applicable, or the required information is shown in the financial statements or related notes.

(ii) Exhibits

Exhibit Number	Description
2.1(12)	Agreement and Plan of Reorganization between PolaRx Biopharmaceuticals, Inc., the Registrant and PolaRx Biopharmaceuticals Acquisition Corp., dated January 7, 2000.
2.2(21)	Amendment No. 1 to Agreement and Plan of Reorganization between PolaRx Biopharmaceuticals, Inc., the Registrant and David M. Tanen as PolaRx Representative, dated March 6, 2003.
2.3(22)	Agreement and Plan of Merger by and between Cell Therapeutics, Inc. and Novuspharma, S.p.A., dated as of June 16, 2003
3.1(1)	Registrant's Restated Articles of Incorporation.
3.2(21)	Registrant's Articles of Amendment to Restated Articles of Incorporation of Cell Therapeutics, Inc. Establishing a Series of Preferred Stock.
3.3(2)	Registrant's Articles of Amendment to Restated Articles of Incorporation of Cell Therapeutics, Inc. Effecting a Reverse Stock Split.
3.4(6)	Registrant's Restated Bylaws.
3.5(24)	Registrant's Amended and Restated Bylaws
4.1(7)	Form of Rights Agreement dated as of November 11, 1996, between the Registrant and Harris Trust Company of California, which includes the Form of Rights Certificate as Exhibit A, the Summary of Rights to Purchase Preferred Stock as Exhibit B and the Form of Certificate of Designation of the Series C Preferred Stock as Exhibit C.
4.2(14)	Indenture between the Registrant and State Street Bank and Trust Company of California, N.A., as trustee dated June 13, 2001.
4.3(20)	First Amendment to Rights Agreement dated as of November 20, 2002, between the Registrant, Harris Trust Company of California and Computershare Investor Services, LLC.
4.4(21)	Indenture between the Registrant and State Street Bank and Trust Company of California, N.A., as trustee dated December 20, 2002.

Exhibit Number	Description
4.5(28)	Indenture between Cell Therapeutics, Inc. and U.S. Bank National Association and trustee, dated June 23, 2003.
10.1(4)	Lease Agreement between David A. Sabey and Sandra L. Sabey and the Registrant, dated March 27, 1992, as amended March 31, 1993 and October 13, 1993.
10.2(1)	Assignment of Lease between Manlove Travel and the Registrant, dated April 23, 1993.
10.3(2)	Letter Agreement between David A. Sabey, Sandra L. Sabey and the Registrant, dated as of September 6, 1996, amending the Assignment of Lease.
10.4(2)	Third Amendment to Lease Agreement between David A. Sabey and Sandra L. Sabey and the Registrant, dated as of September 10, 1996.
10.5(17)	Sublease Agreement between F5 Networks, Inc. and the Registrant, dated March 30, 2001, as amended April 13, 2001.
10.6(15)	Amended Equipment Leasing Agreement dated as of September 1, 2001, between Citiflight, Inc. And the Registrant.
10.7(21)	Lease agreement between Elliott Park LLC and the Registrant, dated August 20, 2002.
10.8(18)*	Loan Agreement by and between James A. Bianco and the Registrant, dated April 8, 2002.
10.9(21)*	Employment Agreement between the Registrant and James A. Bianco, dated as of December 31, 2002.
10.10(25)*	Employment Agreement between the Registrant and Silvano Spinelli, dated as of June 16, 2003
10.11(26)*	Employment Agreement between the Registrant and Cesare Parachini, dated as of June 16, 2003
10.12(2)*	Form of Strategic Management Team Severance Agreement.
10.13(16)*	Form of Indemnification Agreement.
10.14(1)*	1994 Equity Incentive Plan, as amended.
10.15(1)*	1996 Employee Stock Purchase Plan, as amended.
10.16(23)*	2003 Equity Incentive Plan
10.17(28)*	Cell Therapeutics, Inc. Novuspharma S.p.A. Stock Option Plan
10.18(4)†	Collaboration Agreement by and between BioChem Therapeutic Inc. and the Registrant, dated March 7, 1995, as amended November 30, 1995 and December 6, 1995.
10.19(4)†	Supply Agreement by and between BioChem Therapeutic Inc. and the Registrant, dated March 7, 1995.
10.20(11)†	License Agreement dated as of November 13, 1998, by and between PG-TXL Company, L.P. And the Registrant.
10.21(15)†	Paclitaxel Purchase Agreement dated as of September 28, 2001, between Natural Pharmaceuticals, Inc. And the Registrant.
10.22(15)†	License Agreement dated as of October 19, 2001, between Chugai Pharmaceutical Co., Ltd. and the Registrant.
10.23(16)	ISDA Master Agreement dated as of January 25, 2002, between Citibank N.A. and the Registrant.
10.24(19)†	Sponsored Research Agreement between the Registrant and the Hope Heart Institute, dated November 1, 2002.
10.25(27)	Registration Rights Agreement dated June 23, 2003, by and among Cell Therapeutics, Inc., CIBC World Markets Corp. and U.S. Bancorp Piper Jaffray Inc.

Exhibit Number	Description
12.1	Statement Re: Computation of Ratio of Earnings to Fixed Charges.
21.1	Subsidiaries of the Registrant.
23.1	Consent of Ernst & Young LLP, Independent Auditors.
24.1	Power of Attorney. Contained in the signature page of this Annual Report on Form 10-K and incorporated herein by reference.
31.1	Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32	Certification of Chief Executive Officer and Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

* Indicates management contract or compensatory plan or arrangement.
† Portions of these exhibits have been omitted pursuant to a request for confidential treatment.
(1) Incorporated by reference to exhibits to the Registrant's Registration Statement on Form S-1 (No. 33-4154).
(2) Incorporated by reference to the Registrant's Registration Statement on Form S-1 (No. 333-20855).
(3) Incorporated by reference to the Registrant's Registration Statement on Form S-3 (No. 333-36603).
(4) Incorporated by reference to exhibits to the Registrant's Registration Statement on Form 10.
(5) Incorporated by reference to exhibits to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 1996.
(6) Incorporated by reference to exhibits to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 1996.
(7) Incorporated by reference to exhibits to the Registrant's Registration Statement on Form 8-A.
(8) Incorporated by reference to exhibits to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 1997.
(9) Incorporated by reference to exhibits to the Registrant's Annual Report on Form 10-K for the year ended December 31, 1997.
(10) Incorporated by reference to exhibits to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 1998.
(11) Incorporated by reference to exhibits to the Registrant's Annual Report on Form 10-K for the year ended December 31, 1998.
(12) Incorporated by reference to exhibits to the Registrant's Current Report on Form 8-K, filed on January 25, 2000.
(13) Incorporated by reference to exhibits to the Registrant's amended Annual Report on Form 10-K for the year ended December 31, 2000.
(14) Incorporated by reference to exhibits to the Registrant's Current Report on Form 8-K, filed on June 13, 2001.
(15) Incorporated by reference to exhibits to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2001.
(16) Incorporated by reference to exhibits to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2001.
(17) Incorporated by reference to exhibits to the Registrant's amended Annual Report on Form 10-K/A for the year ended December 31, 2001.
(18) Incorporated by reference to exhibits to the Registrant's Current Report on Form 8-K, filed on April 12, 2002.

(19) Incorporated by reference to exhibits to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2002.
(20) Incorporated by reference to exhibits to the Registrant's Form 8A-12B/A, filed on January 10, 2003.
(21) Incorporated by reference to exhibits to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2002.
(22) Incorporated by reference to exhibits to the Registrant's Current Report on Form 8-K, filed on June 16, 2003.
(23) Incorporated by reference to exhibits to the Registrant's Registration Statement on Form S-8, filed on June 27, 2003.
(24) Incorporated by reference to appendix H to the Registrant's Registration Statement on Form S-4, filed on July 9, 2003 (No. 333-106906).
(25) Incorporated by reference to exhibit 10.23 to the Registrant's Registration Statement on Form S-4, filed on July 9, 2003 (No. 333-106906).
(26) Incorporated by reference to exhibit 10.24 to the Registrant's Registration Statement on Form S-4, filed on July 9, 2003 (No. 333-106906).
(27) Incorporated by reference to exhibits to the Registrant's Quarterly Report on Form 10-Q, filed on August 6, 2003.
(28) Incorporated by reference to exhibits to the Registrant's Registration Statement on Form S-8, filed on February 13, 2004.

(b) *Reports on Form 8-K*

On October 20, 2003, we filed a report on Form 8-K relating to the announcement of the implementation of a study amendment for our STELLAR 4 trial.

On October 21, 2003, we furnished a report on Form 8-K relating to the issuance of our financial results for the fiscal quarter ended September 30, 2003.

On December 22, 2003, we filed a report on Form 8-K relating to the filing of certain historical financial information of the Company and pro forma financial information based on the historical financial statements of the Company and Novuspharma, S.p.A. substantially as included in the listing prospectus the Company filed with the Commissione Nazionale per le Società e la Borsa ("CONSOB") relating to its common stock (and translated into the English language).

On December 30, 2003, we filed a report on Form 8-K relating to the filing of a deed of merger with the Register of Enterprises in Milan, Italy, and the filing of Articles of Merger with the Secretary of State of the State of Washington, which were both filed in connection with the merger with Novuspharma, S.p.A. on December 29, 2003 indicating that the merger would be effective on January 1, 2004.

On January 13, 2004, we filed a report on Form 8-K relating to the announcement of the effectiveness of the merger between the Company and Novuspharma S.p.A. on January 1, 2004.

On February 5, 2004, we filed a report on Form 8-K/A amending the 8-K filed on January 13, 2004 to include the (a) unaudited financial statements of Novuspharma as of and for the nine months ended September 30, 2003 and 2002 and financial statements as of and for the years ended December 31, 2002, 2001 and 2000; and (b) the unaudited pro forma condensed combined financial statement of the Company and Novuspharma as of and for the nine months ended September 30, 2003 and the year ended December 31, 2002.

On February 11, 2004, we furnished a report on Form 8-K relating to the issuance of our financial results for the fiscal quarter ended December 31, 2003.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this Report to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Seattle, State of Washington, on March 10, 2004.

Cell Therapeutics, Inc.

By: /s/ James A. Bianco

James A. Bianco, M.D.
President and Chief Executive Officer

POWER OF ATTORNEY

KNOW BY ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints James A. Bianco and Louis A. Bianco, and each of them his attorney-in-fact, with the power of substitution, for him in any and all capacities, to sign any amendment of post-effective amendment to this Report on Form 10-K and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that said attorney-in-fact, or his substitute or substitutes, may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this Report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Max E. Link **Max E. Link, Ph.D.**	Chairman of the Board and Director	March 10, 2004
/s/ James A. Bianco **James A. Bianco**	President, Chief Executive Officer and Director (Principal Executive Officer)	March 10, 2004
/s/ Louis A. Bianco **Louis A. Bianco**	Executive Vice President, Finance and Administration (Principal Financial Officer and Principal Accounting Officer)	March 10, 2004
/s/ Jack W. Singer **Jack W. Singer M.D.**	Director	March 10, 2004
/s/ Jack L. Bowman **Jack L. Bowman**	Director	March 10, 2004
/s/ John M. Fluke, Jr. **John M. Fluke, Jr.**	Director	March 10, 2004
/s/ Vartan Gregorian **Vartan Gregorian, Ph.D.**	Director	March 10, 2004

Signature	Title	Date
/s/ Mary O. Mundinger **Mary O. Mundinger**	Director	March 10, 2004
/s/ Phillip M. Nudelman **Phillip M. Nudelman**	Director	March 10, 2004
/s/ Erich Platzer **Erich Platzer, M.D.**	Director	March 10, 2004
/s/ Silvano Spinelli **Silvano Spinelli**	Director	March 10, 2004

SCHEDULE II

CELL THERAPEUTICS, INC.

VALUATION AND QUALIFYING ACCOUNTS
YEARS ENDED DECEMBER 31, 2003, 2002 AND 2001
(in thousands)

	Balance at Beginning of Period	Additions Charged to Expense	Deductions	Balance at End of Period
Year ended December 31, 2003:				
Allowance for sales returns	$ 731,149	$ 1,402,376	$(104,547)	$ 2,028,978
Allowance for doubtful accounts and discounts	127,364	94,270	(133,933)	87,701
Reserve for excess inventory that may expire or become unsaleable	—	130,829	(54,814)	76,015
	$ 858,513	$ 1,627,475	$(293,294)	$ 2,192,694
Year ended December 31, 2002:				
Allowance for sales returns	$ 295,727	$ 487,175	$ (51,753)	$ 731,149
Allowance for doubtful accounts and discounts	93,033	156,871	(122,540)	127,364
Reserve for excess inventory that may expire or become unsaleable	95,746	11,440	(107,186)	—
	$ 484,506	$ 655,486	$(281,479)	$ 858,513
Year ended December 31, 2001:				
Allowance for sales returns	$ 57,000	$ 355,845	$(117,118)	$ 295,727
Allowance for doubtful accounts and discounts	9,874	140,606	(57,447)	93,033
Reserve for excess inventory that may expire or become unsaleable	—	110,075	(14,329)	95,746
	$ 66,874	$ 606,526	$(188,894)	$ 484,506

Exhibit 12.1

STATEMENT RE: COMPUTATION OF RATIO OF EARNINGS TO FIXED CHARGES
(in thousands)

	Year Ended December 31,				
	2003	2002	2001	2000	1999
Net loss	(130,031)	(49,903)	(80,273)	(51,929)	(36,280)
Add: fixed charges	10,706	12,335	6,467	729	711
Earnings as defined	(119,325)	(37,568)	(73,806)	(51,200)	(35,569)
Fixed charges:					
Interest expensed and capitalized	9,326	11,240	5,988	544	502
Estimated interest component of rent	1,380	1,095	479	185	209
Total fixed charges	10,706	12,335	6,467	729	711
Ratio of earnings to fixed charges	(1)	(1)	(1)	(1)	(1)

(1) Earnings (as defined) for the period were insufficient to cover fixed charges by an amount equal to the net loss for the period.

Exhibit 21.1

Subsidiaries of Cell Therapeutics, Inc.

CTI Technologies, Inc., a Nevada Corporation, PolaRx Biopharmaceuticals, Inc., a Delaware Corporation, PanGenex, Inc., a Delaware Corporation, Cell Therapeutics (UK) Limited, a Limited Liability Corporation, CTI Corporate Development, Inc., an Oregon Corporation.

Exhibit 23.1

Consent of Ernst & Young LLP, Independent Auditors

We consent to the incorporation by reference in the Registration Statements (Form S-8 Nos. 333-65200, 333-58957, 333-35919, 333-97015, 333-106568, 333-106571 and 333-112791) pertaining to the Cell Therapeutics, Inc. 1994 Equity Incentive Plan, the Cell Therapeutics, Inc. 1996 Employee Stock Purchase Plan, the Cell Therapeutics, Inc. 2003 Equity Incentive Plan and the Novuspharma S.p.A Stock Option Plan and to the incorporation by reference in the Registration Statements (Form S-3 Nos. 333-36038, 333-41300, 333-67906, 333-36603, 333-38431, 333-108926 and 333-112681) of Cell Therapeutics, Inc. and the related Prospectuses of our report dated February 6, 2004 (except Note 19, as to which the date is February 10, 2004), with respect to the consolidated financial statements and schedule of Cell Therapeutics, Inc. included in the Annual Report (Form 10-K) for the year ended December 31, 2003.

/s/ Ernst & Young LLP

Seattle, Washington
March 10, 2004

EXHIBIT 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, James A. Bianco, certify that:

1. I have reviewed this annual report on Form 10-K of Cell Therapeutics, Inc.;
2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;
3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and we have:
   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
   (b) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
   (c) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's fourth fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):
   (a) All significant deficiencies in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: March 10, 2004

By: /s/ James A. Bianco

James A. Bianco, M.D.
President and Chief Executive Officer

EXHIBIT 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Louis A. Bianco, certify that:

1. I have reviewed this annual report on Form 10-K of Cell Therapeutics, Inc.;
2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;
3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and we have:
   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
   (b) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
   (c) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's fourth fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):
   (a) All significant deficiencies in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: March 10, 2004

By: /s/ Louis A. Bianco

Louis A. Bianco
Executive Vice President
Finance and Administration

EXHIBIT 32

CERTIFICATION OF CHIEF EXECUTIVE OFFICER AND CHIEF FINANCIAL OFFICER
PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, James A. Bianco, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report of Cell Therapeutics, Inc. on Form 10-K for the fiscal year ended December 31, 2003 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in such Annual Report on Form 10-K fairly presents in all material respects the financial condition and results of operations of Cell Therapeutics, Inc.

A signed original of this written statement required by Section 906 has been provided to Cell Therapeutics, Inc. and will be retained by Cell Therapeutics, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.

Dated: March 10, 2004

By: /s/ James A. Bianco, M.D

James A. Bianco
President and Chief Executive Officer

I, Louis A. Bianco, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report of Cell Therapeutics, Inc. on Form 10-K for the fiscal year ended December 31, 2003 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in such Annual Report on Form 10-K fairly presents in all material respects the financial condition and results of operations of Cell Therapeutics, Inc.

A signed original of this written statement required by Section 906 has been provided to Cell Therapeutics, Inc. and will be retained by Cell Therapeutics, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.

Dated: March 10, 2004

By: /s/ Louis A. Bianco

Louis A. Bianco
Executive Vice President
Finance and Administration