



## Changing the way anti-cancer drugs are developed

**Cell Therapeutics, Inc.**, is a biopharmaceutical company focused on developing and commercializing novel agents that seek to improve the safety and efficacy of existing standard-of-care chemotherapies, and those that may have unique, new mechanisms to kill cancer cells. We use genomic information to determine which tumors have the greatest chance of responding favorably to a specific drug candidate. This has the potential to change the way anti-cancer drugs are developed, by allowing investigators to pick the right drug for the right patient.

**CTI uses a cutting-edge systems biology approach** to help identify and select patient populations that will be specifically responsive to our drug candidates in clinical trials. This technology has the potential to increase efficacy, lower development costs and approval time, and aim our best science at the highest-value markets.

## Drug candidates

### Pixantrone

Pixantrone dimaleate (BBR 2778) for injection is a next generation antitumor aza-anthracenedione with a molecular structure similar to other topoisomerase II inhibitors, such as anthracyclines like doxorubicin. It is under development for the treatment of aggressive non-Hodgkin's lymphoma (NHL).

Anthracyclines are the cornerstone therapeutic for the treatment of lymphoma, leukemia, breast cancer, and other diseases. Although anthracyclines are effective for use as first-line (initial) treatment, they can cause cumulative heart damage that may result in congestive heart failure many years later. As a result, there is a lifetime limit of anthracycline doses and most patients who previously have been treated with an anthracycline are not able to receive further anthracycline treatment if their disease returns.

Pixantrone, the first aza-anthracenedione to reach advanced clinical development, was rationally designed to improve the efficacy and reduce the toxicity associated with anthracyclines and anthracenediones.

### Named Patient Program

Pixantrone is available in Europe as an investigational drug on a named-patient basis. It is supplied by IDIS to healthcare professionals who request it for the treatment of individual patients with relapsing aggressive non-Hodgkin's lymphoma. The program was initiated May 2009.

### OPAXIO™

OPAXIO (paclitaxel poliglumex, PPX, CT-2103), formerly branded as XYOTAX, is a biologically enhanced chemotherapeutic that links paclitaxel to a biodegradable polyglutamate polymer, resulting in a new chemical entity. OPAXIO was designed to improve the delivery of paclitaxel to tumor tissue while protecting normal tissue from toxic side effects. When bound to the polymer, the chemotherapy is rendered inactive, potentially sparing normal tissue's exposure to high levels of active chemotherapy and the associated toxicities.

Preclinical and clinical studies support that OPAXIO metabolism by lung cancer cells may be influenced by estrogen, which could lead to

enhanced release of paclitaxel and efficacy in women with lung cancer compared to standard therapies.

### Brostallicin

Brostallicin is a small molecule chemotherapeutic agent with a unique mechanism of action. By binding to the minor groove, brostallicin provides a new target to interfere with cell division and lead to tumor cell death. The effectiveness of this unique mechanism of action may be further exploited using a patient's genetic profile. In preclinical studies, brostallicin is potently synergistic in combination with standard cytotoxic agents as well as newer targeted therapies.

Brostallicin has a unique ability to be active in tumors that are resistant to other cancer drugs. Additionally, its anti-tumor activity remains high in the presence of a number of critical cancer-causing genetic abnormalities that cause resistance to standard anti-cancer agents. More than 230 patients have been treated with brostallicin in phase I and II single-agent and combination studies.

## Major clinical trials

Our cancer drug development pipeline includes next-generation drug candidates for some of the leading classes of chemotherapeutic agents, as well as using cutting edge genomic science to target the right patients for the right drug.

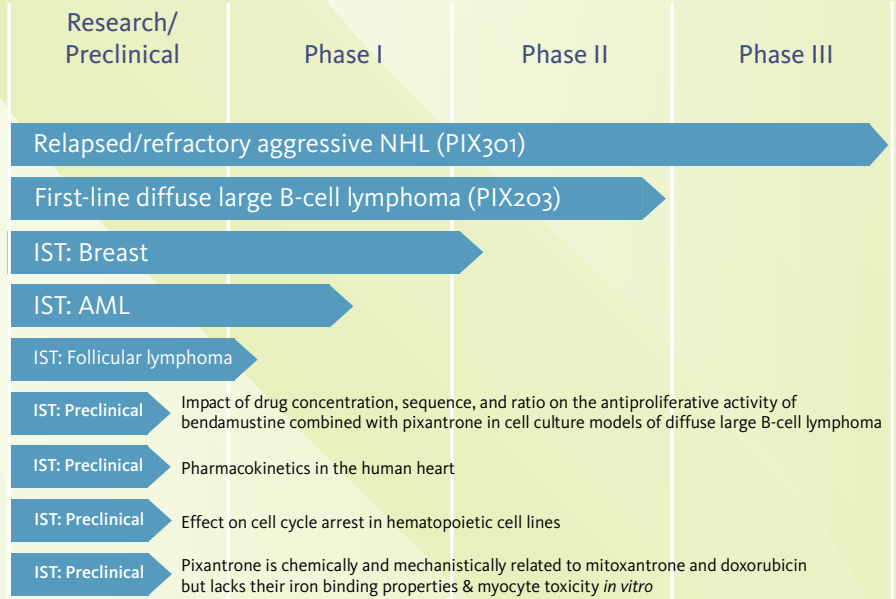
Pixantrone (pixantrone dimaleate, BBR 2778)	PIX301/EXTEND	Third-line relapsed/refractory aggressive NHL, single agent	Phase III Closed to enrollment, in follow-up
	PIX203/RAPID	First-line CHOP-R vs. CPOP-R in adult patients with DLBCL	Phase III Closed to enrollment, in follow-up
OPAXIO™ (paclitaxel poliglumex, PPX, CT-2103)	GOG0212	Maintenance in advanced ovarian or primary peritoneal cancer	Phase III Enrolling
	PGT307	First-line in combination with carboplatin in women with estradiol > 25pg/mL	Phase III Enrolling
Brostallicin	SMI-BRS-201	Context of vulnerability study in ovarian or breast with BRCA mutation, or hereditary nonpolyposis colorectal cancer	Phase II Enrolling

## Diversified oncology portfolio

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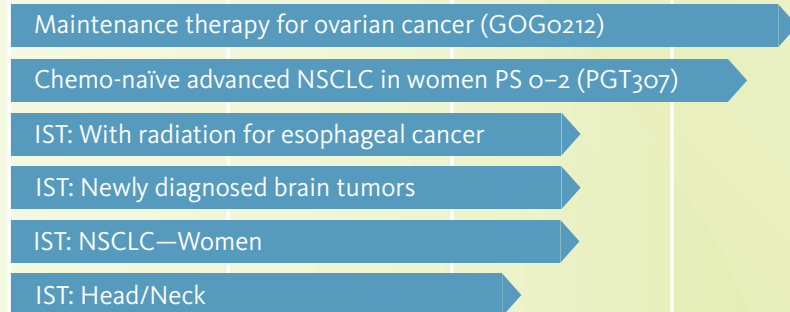
### Pixantrone

(pixantrone dimaleate, BBR 2778)

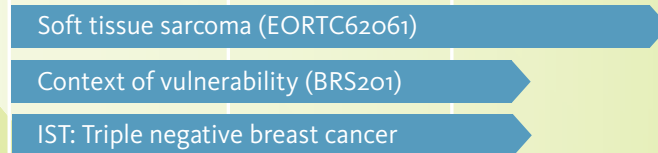


### Paclitaxel poliglumex

(PPX, OPAXIO™, CT-2103)



### Brostallicin



### Novel Bisplatinum Analogues



## Subsidiaries

### Systems Medicine LLC (SM)

Acquired by CTI in July 2007, SM operates as a wholly-owned subsidiary of CTI, utilizing its genomic-based platform to guide development of CTI's oncology products, including brostallicin. SM applies a systems biology approach to drug development, combining pharmacogenomics and bioinformatics with experienced preclinical, clinical, and regulatory expertise to find and exploit a specific cancer's context of vulnerability. Specifically, SM defines the molecular and genetic markers (context) that cause cancer cells to be particularly susceptible (vulnerable) to a drug or combination of drugs—the context of vulnerability.

### Aequus BioPharma, Inc.

Aequus is a majority-owned subsidiary of CTI. Led by members of the former Immunex/Enbrel management team, Aequus is focused on developing the Genetic Polymer™ technology that was created at CTI to speed the manufacture, development, and commercialization of novel biopharmaceuticals, including follow-on biologics or so-called biosimilars. [www.AequusBiopharma.com](http://www.AequusBiopharma.com)

## Collaborations

### Novartis

In September 2006, we entered into an exclusive worldwide licensing agreement with Novartis for the development and commercialization of OPAXIO. The agreement also provides Novartis with an option to develop and commercialize pixantrone based on agreed terms. [www.Novartis.com](http://www.Novartis.com)

### Translational Genomics Research Institute (TGen)

Translational Genomics Research Institute (TGen) is a not-for-profit research institute located in Phoenix, Arizona. TGen is responsible for the concept of discovering a disease's context of vulnerability and tailoring drugs to these contexts to treat patients more effectively. Utilizing their extensive genomic platform and high throughput capabilities to target a cancer drug's context of vulnerability, TGen guides clinical trials toward patient populations where the highest likelihood of success should be observed, thereby potentially lowering risk and shortening time to market. [www.TGen.org](http://www.TGen.org)

### Nerviano Medical Sciences (NMS)

Nerviano Medical Sciences (NMS) is the largest pharmaceutical research and development facility in Italy. It is also one of the largest oncology-focused, integrated discovery and development companies in Europe. [www.NervianoMS.com](http://www.NervianoMS.com)

## Commercial History

### TRISENOX®

In January 2000, we acquired PolaRx and its drug TRISENOX (arsenic trioxide) injection. We submitted a New Drug Application to the United States Food and Drug Administration in record time. In September 2000, less than six months after the submission—and within three years of entering clinical trials—TRISENOX was approved to treat patients whose disease has recurred or who failed to respond to standard therapy for a rare type of leukemia called acute promyelocytic leukemia. Within nine days of approval, the drug was being shipped. In July 2005, we sold the TRISENOX brand and certain proteasome assets to Cephalon for an aggregate of approximately \$68 million. We may receive up to an additional \$100 million if certain sales and regulatory milestones are achieved in the future.

### Zevalin®

In December 2007, we acquired Zevalin (ibritumomab tiuxetan) for an initial payment of \$10 million to Biogen Idec. The acquisition gave us responsibility for marketing, sales, and development of the drug in the United States. In October 2008, we submitted a supplemental Biologics License Application (sBLA) with FDA for use of Zevalin as consolidation therapy after remission induction in previously untreated patients with follicular non-Hodgkin's lymphoma that resulted in FDA approval for the expanded label in September 2009. CTI and Spectrum Pharmaceuticals, Inc. established a joint venture, RIT Oncology, LLC, in December 2008 to develop and commercialize Zevalin. At that time we contributed all Zevalin-related assets to the joint venture and sold a fifty-percent membership interest in the joint venture to Spectrum for \$15 million, plus certain milestone payments. In early 2009, we subsequently exercised our option to sell our interest in the Zevalin joint venture to Spectrum for \$16.5 million.

## Resources

For the latest financial information, including investor updates, financial information, SEC filings, press releases, and webcasts, please visit our Web site at [www.CellTherapeutics.com](http://www.CellTherapeutics.com). Sign up for e-mail alerts and get RSS feeds on our news page. Our stock is listed under the ticker CTIC on NASDAQ (U.S.), MTA (Italy).

Visit our Web site for more product information including references, clinical trials, and cancer drug candidate fact sheets.

CTI has a strong management team with extensive drug development and clinical trial expertise. The management team includes oncologists with first-hand experience treating patients and bringing drugs to market. For details about our executive management and board of directors, visit [www.CellTherapeutics.com](http://www.CellTherapeutics.com).



## Contact

501 Elliott Avenue West #400 Seattle, WA 98119 206.282.7100 [www.CellTherapeutics.com](http://www.CellTherapeutics.com)  
Dan Eramian, Executive Vice President, Corporate Communications 206.272.4343

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