

BIOTIME INC  
Form S-3  
July 31, 2012

As filed with the Securities and Exchange Commission on July 31, 2012

Registration No. \_\_\_\_\_

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SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM S-3

REGISTRATION STATEMENT UNDER  
THE SECURITIES ACT OF 1933

BIOTIME, INC.  
(Exact name of Registrant as specified in charter)

California  
(State or other jurisdiction of incorporation or  
organization)

94-3127919  
(I.R.S. Employer Identification Number)

1301 Harbor Bay Parkway, Suite 100  
Alameda, California 94502  
(510) 521-3390

Judith Segall, Vice-President and Secretary  
BioTime, Inc.  
1301 Harbor Bay Parkway, Suite 100  
Alameda, California 94502  
(510) 521-3390

(Address, including zip code, and telephone number,  
including area code, of Registrant's principal executive  
offices)

(Name, address, including zip code, and telephone  
number, including area code, of agent for service)

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Copies of all communications, including all communications sent to the agent for service, should be sent to:

RICHARD S. SOROKO, ESQ.  
Thompson, Welch, Soroko & Gilbert LLP  
3950 Civic Center Drive, Suite 300  
San Rafael, California 94903  
Tel. (415) 448-5000

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Approximate date of commencement of proposed sale to the public: As soon as practicable after this Registration Statement becomes effective.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

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If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 of the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.  x

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.  o

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.  o

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.  o

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.  o

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of “large accelerated filer,” “accelerated filer” and “smaller reporting company” in Rule 12b-2 of the Securities Exchange Act of 1934. (Check one):

Large accelerated filer  o Accelerated filer  x  
 Non-accelerated filer  o (Do not check if a smaller reporting company) Smaller reporting company  o

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount to be Registered	Proposed Maximum Offering Price Per Unit (1)	Proposed Maximum Aggregate Offering Price (1)	Amount of Registration Fee
Common shares, no par value	868,429	\$ 4.11	\$ 3,569,243.19	\$ 409.04
<b>Total Registration Fee</b>				<b>\$ 409.04</b>

(1) Estimated solely for the purpose of calculating the registration fee.

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The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

Subject to Completion, Dated July 31, 2012

PROSPECTUS

BIOTIME, INC.  
868,429 Common Shares

This prospectus relates to 448,429 BioTime common shares held by the selling security holders named in this prospectus, and 420,000 BioTime common shares held by our subsidiary LifeMap Sciences, Inc. The selling security holders acquired their common shares from us in connection with the merger of Xenex, Inc. into our subsidiary LifeMap Sciences, Inc. All of the net proceeds from the sale of the common shares by the selling security holders will belong to the selling security holders and not to us.

The BioTime common shares being offered by LifeMap Sciences through this prospectus were acquired by LifeMap Sciences from one of our directors and principal shareholders and certain of his affiliates pursuant to an agreement in which LifeMap Sciences agreed to issue shares of its common stock in exchange for BioTime shares. All of the net proceeds from the sale of the BioTime common shares held by LifeMap Sciences will belong to LifeMap Sciences. See "Use of Proceeds" on page 22.

The common shares are quoted on the NYSE MKT under the symbol BTX. The closing price of the common shares on the NYSE MKT on July 27, 2012 was \$4.19.

These securities involve a high degree of risk and should be purchased only by persons who can afford the loss of their entire investment. See "Risk Factors" on page 8.

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

The date of this prospectus is July \_\_\_\_, 2012

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PROSPECTUS SUMMARY

The following summary explains only some of the information in this prospectus. More detailed information and financial statements appear elsewhere in this prospectus. Statements contained in this prospectus that are not historical facts may constitute forward-looking statements that are subject to risks and uncertainties that could cause actual results to differ materially from those discussed. Words such as “expects,” “may,” “will,” “anticipates,” “intends,” “plans,” “believes,” “seeks,” “estimates,” and similar expressions identify forward-looking statements. See “Risk Factors.” References to “we” means BioTime, Inc, and its subsidiaries unless the context otherwise requires.

BioTime, Inc.

Overview

We are a biotechnology company focused on the emerging field of regenerative medicine. Our core technologies center on stem cells capable of becoming all of the cell types in the human body, a property called pluripotency. Products made from these “pluripotent” stem cells are being developed by us and our subsidiaries, each of which concentrates on different medical specialties, including: neuroscience, oncology, orthopedics, and blood and vascular diseases. Our commercial strategy is heavily focused on near-term commercial opportunities including our current line of research products such as ACTCellerate™ cell lines and associated ESspan™ culture media, HyStem® hydrogels, human embryonic stem cell lines, and royalties from Hextend®. Potential near term therapeutic product opportunities include Renevia™ (formerly known as HyStem®-Rx) as a cell delivery device expected to launch in Europe in 2013, and the launch of PanC-Dx™ as a novel blood-based cancer screen, expected by 2014 in Europe. Our long-term strategic focus is to provide regenerative therapies for age-related degenerative diseases.

“Regenerative medicine” refers to an emerging field of therapeutic product development that may allow all human cell and tissue types to be manufactured on an industrial scale. This new technology is made possible by the isolation of human embryonic stem (“hES”) cells, and by the development of “induced pluripotent stem (“iPS”) cells” which are created from regular cells of the human body using technology that allows adult cells to be “reprogrammed” into cells with pluripotency like young hES-like cells. These pluripotent hES and iPS cells have the unique property of being able to branch out into each and every kind of cell in the human body, including the cell types that make up the brain, the blood, the heart, the lungs, the liver, and other tissues. Unlike adult-derived stem cells that have limited potential to become different cell types, pluripotent stem cells may have vast potential to supply an array of new regenerative therapeutic products, especially those targeting the large and growing markets associated with age-related degenerative disease. Unlike pharmaceuticals that require a molecular target, therapeutic strategies in regenerative medicine are generally aimed at regenerating affected cells and tissues, and therefore may have broader applicability. Regenerative medicine represents a revolution in the field of biotechnology with the promise of providing therapies for diseases previously considered incurable.

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Our commercial efforts in regenerative medicine include the development and sale of products designed for research applications in the near term as well as products designed for diagnostic and therapeutic applications in the medium and long term. We offer advanced human stem cell products and technology that can be used by researchers at universities and at companies in the bioscience and biopharmaceutical industries. We have developed research and clinical grade hES cell lines that we market for both basic research and therapeutic product development. Our subsidiary, ES Cell International Pte Ltd (“ESI”), has developed six hES cell lines that are among the best characterized and documented cell lines available today. Developed using current Good Manufacturing Practices (“cGMP”) that facilitate transition into the clinic, these hES cell lines are extensively characterized and five of the six cell lines currently have documented and publicly-available genomic sequences. The ESI hES cell lines are now included in the Stem Cell Registry of the National Institutes of Health (“NIH”), making them eligible for use in federally funded research, and all are available for purchase through [www.biotimeinc.com](http://www.biotimeinc.com). We also market human embryonic progenitor cell (“hEPCs”) developed using ACTCellerate™ technology. These hEPCs are purified lineages of cells that are intermediate in the developmental process between embryonic stem cells and fully differentiated cells. We expect that hEPCs will simplify the scalable manufacture of highly purified and identified cell types and will possess the ability to become a wide array of cell types with potential applications in research, drug discovery, and human regenerative stem cell therapies. The ACTCellerate™ cell lines are also available for purchase through [www.biotimeinc.com](http://www.biotimeinc.com).

Research products can be marketed without regulatory or other governmental approval, and thus offer relatively near-term business opportunities, especially when compared to therapeutic products. The medical devices that we and our subsidiaries are developing will require regulatory approval for marketing, but the clinical trial and approval process for medical devices is often faster and less expensive than the process for the approval of new drugs and biological therapeutics. Our current and near-term product opportunities, combined with expected long-term revenues from the potentially very large revenue cell-based therapeutic products under development at our subsidiaries, provide us with a balanced commercial strategy. The value of this balance is apparent in the commercial field of regenerative medicine as competitors whose sole focus is on long-term therapeutic products have found it challenging to raise the requisite capital to fund clinical development.

Our HyStem® hydrogel product line is one of the components in our near-term revenue strategy. HyStem® is a patented biomaterial that mimics the human extracellular matrix, which is the network of molecules surrounding cells in organs and tissues that is essential to cellular function. Many tissue engineering and regenerative cell-based therapies will require the delivery of therapeutic cells in a matrix or scaffold to sustain cell survival after transplantation and to maintain proper cellular function. HyStem® is a unique hydrogel that has been shown to support cellular attachment and proliferation in vivo and is currently being used by researchers at a number of leading medical schools in pre-clinical studies of stem cell therapies to facilitate wound healing, for the treatment of ischemic stroke, brain cancer, vocal fold scarring, and for myocardial infarct repair. Our HyStem® hydrogels may have other applications when combined with the diverse and scalable cell types our scientists have isolated from hES cells.

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Renovia™ (formerly known as HyStem®-Rx) is a clinical grade formulation of HyStem-C®, a biocompatible, implantable hyaluronan and collagen-based matrix for cell delivery in human clinical applications. As an injectable product, Renovia™ may address an immediate need in cosmetic and reconstructive surgeries and other procedures by improving the process of transplanting adipose derived cells, mesenchymal stem cells, or other adult stem cells. We will need to obtain approval by the U.S. Food and Drug Administration (“FDA”) and comparable regulatory agencies in foreign countries in order to market Renovia™ as a medical device. Our goal is to initiate clinical trials in the European Union by late 2012 for CE marking.

Our subsidiary, OncoCyte Corporation, is developing PanC-Dx™, a novel non-invasive blood-based cancer screening test designed to detect the presence of various human cancers, including cancers of the breast, lung, bladder, uterus, stomach, and colon, during routine check -ups. We intend to initially seek regulatory approval to market PanC-Dx™ in Europe before seeking regulatory approvals required to market the product in the U.S. and other countries.

We have organized several subsidiaries to undertake our cell replacement therapeutic programs, diagnostic product programs, and our research product programs. We will partly or wholly fund these subsidiaries, recruit their management teams, assist them in acquiring technology, and provide general guidance for building the subsidiary companies. We may license patents and technology to the subsidiaries that we do not wholly own under agreements that will entitle us to receive royalty payments from the commercialization of products or technology developed by the subsidiaries.

The following table shows our subsidiaries, their respective principal fields of business, our percentage ownership, and the country where their principal business is located:

Subsidiary	Field of Business	BioTime Ownership	Country
ES Cell International Pte. Ltd.	Stem cell products for research, including clinical grade cell lines produced under cGMP	100%	Singapore
OncoCyte Corporation	Diagnosis and treatment of cancer	75.3%	USA
OrthoCyte Corporation	Orthopedic diseases, including osteoarthritis	100%	USA
Cell Cure Neurosciences, Ltd.	Age-related macular degeneration  Multiple sclerosis  Parkinson’s disease	53.6%	Israel
ReCyte Therapeutics, Inc. (formerly Embryome Sciences, Inc.)	Blood and vascular diseases including coronary artery disease  Endothelial progenitor cells and iPS cell banking	95.15%	USA
BioTime Asia, Limited	Ophthalmologic, skin, musculo-skeletal system, and hematologic diseases for Asian markets.  Stem cell products for research	81%	Hong Kong
LifeMap Sciences, Inc.		77.1%	USA

Genetic, disease, and stem cell databases; sale  
of stem cell products for research (1)

LifeMap Sciences, Ltd.

Stem cell database

(1)

Israel

(1) LifeMap Sciences, Ltd. is a wholly-owned subsidiary of LifeMap Sciences, Inc.



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Initially, we developed blood plasma volume expanders and related technology for use in surgery, emergency trauma treatment, and other applications. Our lead blood plasma expander product, Hextend®, is a physiologically balanced intravenous solution used in the treatment of hypovolemia, a condition caused by low blood volume, often from blood loss during surgery or injury. Hextend® maintains circulatory system fluid volume and blood pressure, and keeps vital organs perfused during surgery and trauma care. Hextend® is manufactured and distributed in the U.S. by Hospira, Inc., and in South Korea by CJ CheilJedang (“CJ”), under license from us.

### Additional Information

HyStem®, Hextend® and PentaLyte® are registered trademarks of BioTime, Inc., and Renevia™, ESpan™, and ESpy™ are trademarks of BioTime, Inc. ReCyte™ is a trademark of ReCyte Therapeutics, Inc. ACTCellerate™ is a trademark licensed to us by Advanced Cell Technology, Inc. PanC-Dx™ is a trademark of OncoCyte Corporation.

We were incorporated in 1990 in the state of California. Our principal executive offices are located at 1301 Harbor Bay Parkway, Alameda, California 94502. Our telephone number is (510) 521-3390.

### Stem Cells and Products for Regenerative Medicine Research

We are marketing our stem cell products for research through our website [biotimeinc.com](http://biotimeinc.com). By an agreement with ReCyte Therapeutics, Millipore Corporation became a worldwide distributor of certain ACTCellerate™ hEPC lines and related ESpan™ growth media. These lines are being marketed and distributed on a worldwide basis. The ACTCellerate™ hEPC lines and ESpan™ growth media products distributed by Millipore may also be purchased directly from us on our website [biotimeinc.com](http://biotimeinc.com). In addition to the products that we are co-marketing with Millipore, we now offer 92 other ACTCellerate™ hEPC lines for sale on our website, and we anticipate adding additional cell lines and related ESpan™ growth media and differentiation kits over time. We are also offering ACTCellerate™ hEPCs and ESpan™ growth media in Asia through BioTime Asia’s distribution agreement with Genext.

Six hES cell lines developed under cGMP by our subsidiary ESI are available for purchase from us through [www.biotimeinc.com](http://www.biotimeinc.com). These hES cell lines are included in the NIH Stem Cell Registry, making them eligible for use in federally funded research, and five of the six cell lines currently have documented and publicly-available genomic sequences.

We have acquired from RGI an array of hES cell lines carrying inherited genetic diseases such as cystic fibrosis and muscular dystrophy. Study of these cell lines will enable researchers to better understand the mechanisms involved in causing their corresponding disease states, which may in turn expedite the search for potential treatments.

We have also targeted for development ESpy™ cell lines, which will be derivatives of hES cells that will emit beacons of light. These light-emitting cells will allow researchers to track the location and distribution of the cells in both in vitro and in vivo studies. As new products are developed, they will become available for purchase on [biotimeinc.com](http://biotimeinc.com).

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Plasma Volume Expander Products

We have developed and licensed manufacturing and marketing rights to Hextend®, a physiologically balanced blood plasma volume expander used for the treatment of hypovolemia in surgery, emergency trauma treatment, and other applications. Hypovolemia is a condition caused by low blood volume, often from blood loss during surgery or from injury. Hextend® maintains circulatory system fluid volume and blood pressure and helps sustain vital organs during surgery or when a patient has sustained substantial blood loss due to an injury. Hextend® is the only blood plasma volume expander that contains lactate, multiple electrolytes, glucose, and a medically approved form of starch called hetastarch. Hextend® is sterile, so its use avoids the risk of infection. Health insurance reimbursements and HMO coverage now include the cost of Hextend used in surgical procedures.

Hextend® is manufactured and distributed in the United States by Hospira, Inc., and in South Korea by CJ CheilJedang Corp. (“CJ”), under license from us.

Offering Summary

Common Shares Offered	448,429 outstanding BioTime common shares are being offered by the selling security holders.
	420,000 outstanding BioTime common shares are being offered by our subsidiary LifeMap Sciences.
Common Shares Outstanding	50,341,962 shares as of May 9, 2012, which does not include the 448,429 shares issued to the selling shareholders after that date.

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Risk Factors

Our business is subject to various risks, including those described below. You should consider the following risk factors, together with all of the other information included in this report, which could materially adversely affect our proposed operations, our business prospects, and financial condition, and the value of an investment in our business. There may be other factors that are not mentioned here or of which we are not presently aware that could also affect our business operations and prospects.

Risks Related to Our Business Operations

We have incurred operating losses since inception and we do not know if we will attain profitability

Our comprehensive net losses for the three months ended March 31, 2012 and for the fiscal years ended December 31, 2011, 2010 and 2009 were \$4,849,253, \$17,535,587, \$10,287,280, and \$5,144,499, respectively, and we had an accumulated deficit of \$85,443,351 as of March 31, 2012, and \$80,470,009, \$63,954,509, and \$52,769,891, as of December 31, 2011, 2010, and 2009, respectively. Since inception, we have primarily financed our operations through the sale of equity securities, licensing fees, royalties on product sales by our licensees, and borrowings. More recently, we have financed a portion of our operations with research grants. Ultimately, our ability to generate sufficient operating revenue to earn a profit depends upon our success in developing and marketing or licensing our products and technology.

We will spend a substantial amount of our capital on research and development but we might not succeed in developing products and technologies that are useful in medicine

- We are attempting to develop new medical products and technologies.
- Many of our experimental products and technologies have not been applied in human medicine and have only been used in laboratory studies in vitro or in animals. These new products and technologies might not prove to be safe and efficacious in the human medical applications for which they were developed.
- The experimentation we are doing is costly, time consuming, and uncertain as to its results. We incurred research and development expenses amounting to \$4,178,781 during the three months ended March 31, 2012, and \$13,699,691, \$8,191,314, and \$3,181,729 during the fiscal years ended December 31, 2011, 2010, and 2009, respectively.
- If we are successful in developing a new technology or product, refinement of the new technology or product and definition of the practical applications and limitations of the technology or product may take years and require the expenditure of large sums of money. Future clinical trials of new therapeutic products, particularly those products that are regulated as drugs or biological, will be very expensive and will take years to complete. We may not have the financial resources to fund clinical trials on our own and we may have to enter into licensing or collaborative arrangements with larger, well-capitalized pharmaceutical companies in order to bear the cost. Any such arrangements may be dilutive to our ownership or economic interest in the products we develop, and we might have to accept a royalty payment on the sale of the product rather than receiving the gross revenues from product sales.

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Our success depends in part on the uncertain growth of the stem cell industry, which is still in its infancy

- The success of our business of selling products for use in stem cell research depends on the growth of stem cell research, without which there may be no market or only a very small market for our products and technology. The likelihood that stem cell research will grow depends upon the successful development of stem cell products that can be used to treat disease or injuries in people or that can be used to facilitate the development of other pharmaceutical products. The growth in stem cell research also depends upon the availability of funding through private investment and government research grants.
- There can be no assurance that any safe and efficacious human medical applications will be developed using stem cells or related technology.
- Government-imposed restrictions and religious, moral, and ethical concerns with respect to use of embryos or human embryonic stem cells in research and development could have a material adverse effect on the growth of the stem cell industry, even if research proves that useful medical products can be developed using human embryonic stem cells.

We plan to invest in the development of a stem cell data base but there is no assurance that the data base, if successfully completed, can be profitably commercialized

In February 2011, we formed a new subsidiary, LifeMap Sciences, to advance the development and commercialization of our embryonic stem cell database. We have invested approximately \$2,000,000 in cash in LifeMap Sciences. During May 2012, LifeMap Sciences acquired the rights to market three online research databases, GeneCards®, pertaining to human genes, MalaCards, pertaining to human diseases, and PanDaTox, pertaining to bacterial genes that are toxic to E coli and which may be used in drug discovery research. LifeMap Sciences is presently marketing GeneCards,® and plans to make the other databases available later in 2012, for use by researchers at pharmaceutical and biotechnology companies and other institutions through paid subscriptions or on a fee per use basis. LifeMap Sciences will use proceeds from the sale of BioTime common shares held by it to finance its operations. However, there is no assurance that the LifeMap Sciences stem cell database will be successfully completed, or that LifeMap Sciences will be able to generate sufficient paid subscriptions for use of the databases to allow us to recover our investment or earn a profit.

Sales of our products to date have not been sufficient to generate an amount of revenue sufficient to cover our operating expenses

- Hextend® is presently the only plasma expander product that we have on the market, and it is being sold only in the United States and South Korea. The royalty revenues that we have received from sales of Hextend® have not been sufficient to pay our operating expenses. This means that we need to successfully develop and market or license additional products and earn additional revenues in sufficient amounts to meet our operating expenses.

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- We will receive additional license fees and royalties if our licensees are successful in marketing Hextend® and PentaLyte® in Japan, Taiwan, and China, but they have not yet obtained the regulatory approvals required to begin selling those products.
- We are also beginning to bring our first stem cell research products to the market, but there is no assurance that we will succeed in generating significant revenues from the sale of those products.

Sales of the products we may develop will be adversely impacted by the availability of competing products

- Sales of Hextend® have already been adversely impacted by the availability of other products that are commonly used in surgery and trauma care and sell at low prices.
- In order to compete with other products, particularly those that sell at lower prices, our products will have to provide medically significant advantages.
- Physicians and hospitals may be reluctant to try a new product due to the high degree of risk associated with the application of new technologies and products in the field of human medicine.
- Competing products are being manufactured and marketed by established pharmaceutical companies. For example, B. Braun/McGaw presently markets Hespan®, an artificial plasma volume expander, and Hospira and Baxter International, Inc. manufacture and sell a generic equivalent of Hespan®. Hospira also markets Voluven®, a plasma volume expander containing a 6% low molecular weight hydroxyethyl starch in saline solution.
- There also is a risk that our competitors may succeed at developing safer or more effective products that could render our products and technologies obsolete or noncompetitive.

We might need to issue additional equity or debt securities in order to raise additional capital needed to pay our operating expenses

- We plan to continue to incur substantial research and product development expenses, largely through our subsidiaries, and we and our subsidiaries will need to raise additional capital to pay operating expenses until we are able to generate sufficient revenues from product sales, royalties, and license fees.
- It is likely that additional sales of equity or debt securities will be required to meet our short-term capital needs, unless we receive substantial revenues from the sale of our new products or we are successful at licensing or sublicensing the technology that we develop or acquire from others and we receive substantial licensing fees and royalties.

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- Sales of additional equity securities by us or our subsidiaries could result in the dilution of the interests of present shareholders.

The amount and pace of research and development work that we and our subsidiaries can do or sponsor, and our ability to commence and complete clinical trials required to obtain regulatory approval to market our pharmaceutical and medical device products, depends upon the amount of money we have

- At March 31, 2012, we had \$16,487,906 of cash and cash equivalents on hand. There can be no assurance that we or our subsidiaries will be able to raise additional funds on favorable terms or at all, or that any funds raised will be sufficient to permit us or our subsidiaries to develop and market our products and technology. Unless we and our subsidiaries are able to generate sufficient revenue or raise additional funds when needed, it is likely that we will be unable to continue our planned activities, even if we make progress in our research and development projects.
- We may have to postpone some laboratory research and development work unless our cash resources increase through a growth in revenues or additional equity investment or borrowing.

Our business could be adversely affected if we lose the services of the key personnel upon whom we depend

Our stem cell research program is directed primarily by our Chief Executive Officer, Dr. Michael West. The loss of Dr. West's services could have a material adverse effect on us.

If we make strategic acquisitions, we will incur a variety of costs and might never realize the anticipated benefits

Despite our acquisitions of ESI in 2010, Glycosan BioSystems, Inc. and Cell Targeting, Inc. in 2011, and Xenex, Inc. in 2012, we have limited experience in independently identifying acquisition candidates and integrating the operations of acquisition candidates with our company. If appropriate opportunities become available, we might attempt to acquire approved products, additional drug candidates, technologies or businesses that we believe are a strategic fit with our business. If we pursue any transaction of that sort, the process of negotiating the acquisition and integrating an acquired product, drug candidate, technology or business might result in operating difficulties and expenditures and might require significant management attention that would otherwise be available for ongoing development of our business, whether or not any such transaction is ever consummated. Moreover, we might never realize the anticipated benefits of any acquisition. Future acquisitions could result in potentially dilutive issuances of equity securities, the incurrence of debt, contingent liabilities, or impairment expenses related to goodwill, and impairment or amortization expenses related to other intangible assets, which could harm our financial condition.

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Failure of our internal control over financial reporting could harm our business and financial results

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is a process to provide reasonable assurance regarding the reliability of financial reporting for external purposes in accordance with accounting principles generally accepted in the U.S. Internal control over financial reporting includes maintaining records that in reasonable detail accurately and fairly reflect our transactions; providing reasonable assurance that transactions are recorded as necessary for preparation of the financial statements; providing reasonable assurance that receipts and expenditures of our assets are made in accordance with management authorization; and providing reasonable assurance that unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements would be prevented or detected on a timely basis. Because of its inherent limitations, internal control over financial reporting is not intended to provide absolute assurance that a misstatement of our financial statements would be prevented or detected. Our growth and entry into new products, technologies and markets will place significant additional pressure on our system of internal control over financial reporting. Any failure to maintain an effective system of internal control over financial reporting could limit our ability to report our financial results accurately and timely or to detect and prevent fraud.

Our business and operations could suffer in the event of system failures

Despite the implementation of security measures, our internal computer systems and those of our contractors and consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. Such events could cause interruption of our operations. For example, the loss of data for our product candidates could result in delays in our regulatory filings and development efforts and significantly increase our costs. To the extent that any disruption or security breach was to result in a loss of or damage to our data, or inappropriate disclosure of confidential or proprietary information, we could incur liability and the development of our product candidates could be delayed.

Risks Related to Our Industry

We will face certain risks arising from regulatory, legal, and economic factors that affect our business and the business of other pharmaceutical development companies. Because we are a small company with limited revenues and limited capital resources, we may be less able to bear the financial impact of these risks than is the case with larger companies possessing substantial income and available capital.

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If we do not receive regulatory approvals we will not be permitted to sell our pharmaceutical and medical device products

The pharmaceutical and medical device products that we and our subsidiaries develop cannot be sold until the United States Food and Drug Administration (“FDA”) and corresponding foreign regulatory authorities approve the products for medical use. The need to obtain regulatory approval to market a new product means that:

- We will have to conduct expensive and time-consuming clinical trials of new products. The full cost of conducting and completing clinical trials necessary to obtain FDA and foreign regulatory approval of a new product cannot be presently determined, but could exceed our current financial resources.
- Clinical trials and the regulatory approval process for a pharmaceutical product can take several years to complete. As a result, we will incur the expense and delay inherent in seeking FDA and foreign regulatory approval of new products, even if the results of clinical trials are favorable.
- Data obtained from preclinical and clinical studies is susceptible to varying interpretations that could delay, limit, or prevent regulatory agency approvals. Delays in the regulatory approval process or rejections of an application for approval of a new drug may be encountered as a result of changes in regulatory agency policy.
- Because the therapeutic products we are developing with hES and iPS technology involve the application of new technologies and approaches to medicine, the FDA or foreign regulatory agencies may subject those products to additional or more stringent review than drugs or biologicals derived from other technologies.
  - A product that is approved may be subject to restrictions on use.
  - The FDA can recall or withdraw approval of a product if problems arise.
  - We will face similar regulatory issues in foreign countries.

Government-imposed restrictions and religious, moral, and ethical concerns about the use of hES cells could prevent us from developing and successfully marketing stem cell products

- Government-imposed restrictions with respect to the use of embryos or human embryonic stem cells in research and development could limit our ability to conduct research and develop new products.



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- Government-imposed restrictions on the use of embryos or hES cells in the United States and abroad could generally constrain stem cell research, thereby limiting the market and demand for our products. During March 2009, President Obama lifted certain restrictions on federal funding of research involving the use of hES cells, and in accordance with President Obama's Executive Order, the National Institutes of Health ("NIH") has adopted new guidelines for determining the eligibility of hES cell lines for use in federally funded research. The central focus of the proposed guidelines is to assure that hES cells used in federally funded research were derived from human embryos that were created for reproductive purposes, were no longer needed for this purpose, and were voluntarily donated for research purposes with the informed written consent of the donors. The hES cells that were derived from embryos created for research purposes rather than reproductive purposes, and other hES cells that were not derived in compliance with the guidelines, are not eligible for use in federally funded research. A lawsuit, *Sherley v. Sebelius*, is now pending, challenging the legality of the new NIH guidelines. In that litigation, a United States District Court issued a temporary injunction against the implementation of the new NIH guidelines, but the District Court's ruling was vacated by the United States Court of Appeals. The plaintiffs in the case have filed an appeal, and the ultimate resolution of that lawsuit could determine whether the federal government may fund research using hES cells, unless new legislation is passed expressly permitting or prohibiting such funding.
- California law requires that stem cell research be conducted under the oversight of a stem cell research oversight committee ("SCRO"). Many kinds of stem cell research, including the derivation of new hES cell lines, may only be conducted in California with the prior written approval of the SCRO. A SCRO could prohibit or impose restrictions on the research that we plan to do.
- The use of hES cells gives rise to religious, moral, and ethical issues regarding the appropriate means of obtaining the cells and the appropriate use and disposal of the cells. These considerations could lead to more restrictive government regulations or could generally constrain stem cell research, thereby limiting the market and demand for our products.

If we are unable to obtain and enforce patents and to protect our trade secrets, others could use our technology to compete with us, which could limit opportunities for us to generate revenues by licensing our technology and selling products

- Our success will depend in part on our ability to obtain and enforce patents and maintain trade secrets in the United States and in other countries. If we are unsuccessful at obtaining and enforcing patents, our competitors could use our technology and create products that compete with our products, without paying license fees or royalties to us.
- The preparation, filing, and prosecution of patent applications can be costly and time consuming. Our limited financial resources may not permit us to pursue patent protection of all of our technology and products throughout the world.

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- Even if we are able to obtain issued patents covering our technology or products, we may have to incur substantial legal fees and other expenses to enforce our patent rights in order to protect our technology and products from infringing uses. We may not have the financial resources to finance the litigation required to preserve our patent and trade secret rights.

There is no certainty that our pending or future patent applications will result in the issuance of patents

- We have filed patent applications for technology that we have developed, and we have obtained licenses for a number of patent applications covering technology developed by others, that we believe will be useful in producing new products, and which we believe may be of commercial interest to other companies that may be willing to sublicense the technology for fees or royalty payments. In the future, we may also file additional new patent applications seeking patent protection for new technology or products that we develop ourselves or jointly with others. However, there is no assurance that any of our licensed patent applications, or any patent applications that we have filed or that we may file in the future covering our own technology, either in the United States or abroad, will result in the issuance of patents.
- In Europe, the European Patent Convention prohibits the granting of European patents for inventions that concern “uses of human embryos for industrial or commercial purposes.” The European Patent Office is presently interpreting this prohibition broadly, and is applying it to reject patent claims that pertain to human embryonic stem cells. However, this broad interpretation is being challenged through the European Patent Office appeals system. As a result, we do not yet know whether or to what extent we will be able to obtain patent protection for our human embryonic stem cell technologies in Europe.
- The recent Supreme Court decision in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, will need to be considered in determining whether certain diagnostic methods can be patented, since the Court denied patent protection for the use of a mathematical correlation of the presence of a well-known naturally occurring metabolite as a means of determining proper drug dosage. Our subsidiary OncoCyte is developing PanC-Dx™ as a cancer diagnostic test, based on the presence of certain genetic markers for a variety of cancers. Because PanC-Dx™ combines an innovative methodology with newly discovered compositions of matter, we are hopeful that this Supreme Court decision will not preclude the availability of patent protection for OncoCyte’s new product. However, like other developers of diagnostic products, we are evaluating this new Supreme Court decision and are waiting to see if the United States Patent and Trademark Office will issue any new guidelines for the patenting of products that test for biological substances.

The process of applying for and obtaining patents can be expensive and slow

- The preparation and filing of patent applications, and the maintenance of patents that are issued, may require substantial time and money.

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- A patent interference proceeding may be instituted with the United States Patent and Trademark Office (“U.S. PTO”) when more than one person files a patent application covering the same technology, or if someone wishes to challenge the validity of an issued patent. At the completion of the interference proceeding, the PTO will determine which competing applicant is entitled to the patent, or whether an issued patent is valid. Patent interference proceedings are complex, highly contested legal proceedings, and the PTO’s decision is subject to appeal. This means that if an interference proceeding arises with respect to any of our patent applications, we may experience significant expenses and delay in obtaining a patent, and if the outcome of the proceeding is unfavorable to us, the patent could be issued to a competitor rather than to us.
- Oppositions to the issuance of patents may be filed under European patent law and the patent laws of certain other countries. As with the U.S. PTO interference proceedings, these foreign proceedings can be very expensive to contest and can result in significant delays in obtaining a patent or can result in a denial of a patent application.

Our patents may not protect our products from competition

We or our subsidiaries have patents in the United States, Canada, the European Union countries, Australia, Israel, Russia, South Africa, South Korea, Japan, Hong Kong, and Singapore, and have filed patent applications in other foreign countries for our plasma volume expander, stem cell products, HyStem® and other hydrogels, certain genes related to the development of cancer, and other technologies.

- We might not be able to obtain any additional patents, and any patents that we do obtain might not be comprehensive enough to provide us with meaningful patent protection.
- There will always be a risk that our competitors might be able to successfully challenge the validity or enforceability of any patent issued to us.
- In addition to interference proceedings, the U.S. PTO can re-examine issued patents at the request of a third party seeking to have the patent invalidated. This means that patents owned or licensed by us may be subject to re-examination and may be lost if the outcome of the re-examination is unfavorable to us.

We may be subject to patent infringement claims that could be costly to defend, which may limit our ability to use disputed technologies, and which could prevent us from pursuing research and development or commercialization of some of our products

The success of our business depends significantly on our ability to operate without infringing patents and other proprietary rights of others. If the technology that we use infringes a patent held by others, we could be sued for monetary damages by the patent holder or its licensee, or we could be prevented from continuing research, development, and commercialization of products that rely on that technology, unless we are able to obtain a license to use the patent. The cost and availability of a license to a patent cannot be predicted, and the likelihood of obtaining a license at an acceptable cost would be lower if the patent holder or any of its licensees is using the patent to develop or market a product with which our product would compete. If we could not obtain a necessary license, we would need to develop or obtain rights to alternative technologies, which could prove costly and could cause delays in product development, or we could be forced to discontinue the development or marketing of any products that were developed using the technology covered by the patent.

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If we fail to meet our obligations under license agreements, we may lose our rights to key technologies on which our business depends

Our business depends on several critical technologies that are based in part on technology licensed from third parties. Those third-party license agreements impose obligations on us, including payment obligations and obligations to pursue development of commercial products under the licensed patents or technology. If a licensor believes that we have failed to meet our obligations under a license agreement, the licensor could seek to limit or terminate our license rights, which could lead to costly and time-consuming litigation and, potentially, a loss of the licensed rights. During the period of any such litigation, our ability to carry out the development and commercialization of potential products, and our ability to raise any capital that we might then need, could be significantly and negatively affected. If our license rights were restricted or ultimately lost, we would not be able to continue to use the licensed technology in our business.

The price and sale of our products may be limited by health insurance coverage and government regulation

Success in selling our pharmaceutical products may depend in part on the extent to which health insurance companies, HMOs, and government health administration authorities such as Medicare and Medicaid will pay for the cost of the products and related treatment. Presently, most health insurance plans and HMOs will pay for Hextend when it is used in a surgical procedure that is covered by the plan. However, until we actually introduce a new product into the medical marketplace, we will not know with certainty whether adequate health insurance, HMO, and government coverage will be available to permit the product to be sold at a price high enough for us to generate a profit. In some foreign countries, pricing or profitability of health care products is subject to government control, which may result in low prices for our products. In the United States, there have been a number of federal and state proposals to implement similar government controls, and new proposals are likely to be made in the future.

Risks Related to our Dependence on Third Parties

We may become dependent on our collaborative arrangements with third parties for a substantial portion of our revenue, and our development and commercialization activities may be delayed or reduced if we fail to initiate, negotiate or maintain successful collaborative arrangements.

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We may become dependent on possible future collaborators to develop and commercialize many of our product candidates and to provide the regulatory compliance, sales, marketing and distribution capabilities required for the success of our business. If we fail to secure or maintain successful collaborative arrangements, our development and commercialization activities will be delayed, reduced or terminated, and our revenues could be materially and adversely impacted. Over the next several years, we may depend on these types of collaboration partnerships for a significant portion of our revenue. The expected future milestone payments and cost reimbursements from collaboration agreements could provide an important source of financing for our research and development programs, thereby facilitating the application of our technology to the development and commercialization of our products. These collaborative agreements might be terminated either by us or by our partners upon the satisfaction of certain notice requirements. Our partners may not be precluded from independently pursuing competing products and drug delivery approaches or technologies. Even if our partners continue their contributions to our collaborative arrangements, of which there can be no assurance, they may nevertheless determine not to actively pursue the development or commercialization of any resulting products. Our partners may fail to perform their obligations under the collaborative arrangements or may be slow in performing their obligations. In addition, our partners may experience financial difficulties at any time that could prevent them from having available funds to contribute to these collaborations. If our collaboration partners fail to conduct their commercialization, regulatory compliance, sales and marketing or distribution activities successfully and in a timely manner, or if they terminate or materially modify their agreements with us, the development and commercialization of one or more product candidates could be delayed, curtailed or terminated because we may not have sufficient financial resources or capabilities to continue such development and commercialization on our own.

We have very limited experience in marketing, selling or distributing our products, and we may need to rely on marketing partners or contract sales companies.

Even if we are able to develop our products and obtain necessary regulatory approvals, we have very limited experience or capabilities in marketing, selling or distributing our products. We rely entirely on Hospira and CJ for the sale of Hextend®. We currently have only limited sales, marketing and distribution resources for selling our stem cell research products, and no marketing or distribution resources for selling any of the medical devices or pharmaceutical products that we are developing. Accordingly, we will be dependent on our ability to build our own marketing and distribution capability for our new products, which would require the investment of significant financial and management resources, or we will need to find collaborative marketing partners or contract sales companies for commercial sale of those products. Even if we find a potential marketing partner, of which there can be no assurance, we may not be able to negotiate a licensing or marketing contract on favorable terms to justify our investment or achieve adequate revenues.

### Risks Pertaining to Our Common Shares

Ownership of our common shares will entail certain risks associated with the volatility of prices for our shares and the fact that we do not pay dividends on our common shares.

Because we are engaged in the development of pharmaceutical and stem cell research products, the price of our stock may rise and fall rapidly

- The market price of our shares, like that of the shares of many biotechnology companies, has been highly volatile.
- The price of our shares may rise rapidly in response to certain events, such as the commencement of clinical trials of an experimental new drug, even though the outcome of those trials and the likelihood of ultimate FDA approval remain uncertain.

- Similarly, prices of our shares may fall rapidly in response to certain events such as unfavorable results of clinical trials or a delay or failure to obtain FDA approval.

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- The failure of our earnings to meet analysts' expectations could result in a significant rapid decline in the market price of our common shares.

Current economic and stock market conditions may adversely affect the price of our common shares

The stock market has been experiencing extreme price and volume fluctuations which have affected the market price of the equity securities without regard to the operating performance of the issuing companies. Broad market fluctuations, as well as general economic and political conditions, may adversely affect the market price of the common shares.

Because we do not pay dividends, our stock may not be a suitable investment for anyone who needs to earn dividend income

We do not pay cash dividends on our common shares. For the foreseeable future, we anticipate that any earnings generated in our business will be used to finance the growth of our business and will not be paid out as dividends to our shareholders. This means that our stock may not be a suitable investment for anyone who needs to earn income from their investments.

Securities analysts may not initiate coverage or continue to cover our common shares and this may have a negative impact on the market price of our shares

The trading market for our common shares will depend, in part, on the research and reports that securities analysts publish about our business and our common shares. We do not have any control over these analysts. There is no guarantee that securities analysts will cover our common shares. If securities analysts do not cover our common shares, the lack of research coverage may adversely affect the market price of those shares. If securities analysts do cover our shares, they could issue reports or recommendations that are unfavorable to the price of our shares, and they could downgrade a previously favorable report or recommendation, and in either case our share price could decline as a result of the report. If one or more of these analysts does not initiate coverage, ceases to cover our shares or fails to publish regular reports on our business, we could lose visibility in the financial markets, which could cause our share price or trading volume to decline.

You may experience dilution of your ownership interests because of the future issuance of additional shares of common and preferred shares by us and our subsidiaries

In the future, we may issue our authorized but previously unissued equity securities, resulting in the dilution of the ownership interests of our present shareholders. We are currently authorized to issue an aggregate of 76,000,000 shares of capital stock consisting of 75,000,000 common shares and 1,000,000 "blank check" preferred shares. As of March 31, 2012, there were 50,321,962 common shares outstanding, 3,438,594 common shares reserved for issuance upon the exercise of outstanding options under our employee stock option plans; and 636,613 shares reserved for issuance upon the exercise of common share purchase warrants. No preferred shares are presently outstanding.

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The operation of some of our subsidiaries has been financed in part through the sale of capital stock in those subsidiaries to private investors. Sales of additional subsidiary shares could reduce our ownership interest in the subsidiaries, and correspondingly dilute our shareholder's ownership interests in our consolidated enterprise. Our subsidiaries also have their own stock option plans and the exercise of subsidiary stock options or the sale of restricted stock under those plans would also reduce our ownership interest in the subsidiaries, with a resulting dilutive effect on the ownership interest of our shareholders in our consolidated enterprise.

We and our subsidiaries may issue additional common shares or other securities that are convertible into or exercisable for common shares in order to raise additional capital, or in connection with hiring or retaining employees or consultants, or in connection with future acquisitions of licenses to technology or rights to acquire products, or in connection with future business acquisitions, or for other business purposes. The future issuance of any such additional common shares or other securities may create downward pressure on the trading price of our common shares.

We may also issue preferred shares having rights, preferences, and privileges senior to the rights of our common shares with respect to dividends, rights to share in distributions of our assets if we liquidate our company, or voting rights. Any preferred shares may also be convertible into common shares on terms that would be dilutive to holders of common shares. Our subsidiaries may also issue their own preferred shares with a similar dilutive impact on our ownership of the subsidiaries.

#### MARKET FOR OUR COMMON EQUITY

BioTime common shares were traded on the American Stock Exchange from August 31, 1999 until July 14, 2005; were quoted on the OTC Bulletin Board ("OTCBB") under the symbol BTIM from July 15, 2005 until October 29, 2009; and were relisted on the NYSE MKT (formerly, the NYSE Amex) on October 30, 2009. On October 12, 2010, BioTime changed its ticker symbol to BTX.

The following table sets forth the range of high and low closing prices for our common shares for the fiscal years ended December 31, 2010 and 2011, and the fiscal quarter ended March 31, 2012, based on transaction data as reported by the OTCBB and NYSE MKT:

Quarter Ended	High	Low
March 31, 2010	\$8.42	\$4.27
June 30, 2010	\$8.20	\$5.25
September 30, 2010	\$6.50	\$4.02
December 31, 2010	\$9.94	\$4.73
March 31, 2011	\$9.53	\$6.08
June 30, 2011	\$7.92	\$4.11
September 30, 2011	\$5.94	\$4.01
December 31, 2011	\$6.20	\$3.55
March 31, 2012	\$6.35	\$4.41
June 30, 2012	\$4.83	\$3.35

Over-the-counter market quotations may reflect inter-dealer prices, without retail mark-up, mark-down, or commission, and may not necessarily represent actual transactions.



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As of February 13, 2012, there were 14,635 holders of the common shares based on the share position listing.

The following table shows certain information concerning the options and warrants outstanding and available for issuance under all of our compensation plans and agreements as of December 31, 2011: