CYTRX CORP
Form S-3
October 15, 2003

As filed with the Securities and Exchange Commission on October 15, 2003

Reg. No. _____

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM S-3

REGISTRATION STATEMENT

UNDER

THE SECURITIES ACT OF 1933

CYTRX CORPORATION

(Exact name of registrant as specified in its charter)

Delaware **58-1642750**

(State or other jurisdiction of

incorporation or organization)

(I.R.S. Employer

Identification No.)

CytRx Corporation

11726 San Vicente Boulevard, Suite 650

Los Angeles, California 90049

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

Steven A. Kriegsman

CytRx Corporation

11726 San Vicente Boulevard., Suite 650

Los Angeles, California 90049

(310) 826-5648

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

With a copy to:

Sanford J. Hillsberg, Esq.

Istvan Benko, Esq.

Troy & Gould Professional Corporation

1801 Century Park East, Suite 1600, Los Angeles, California 90067

(310) 553-4441

Approximate date of commencement of proposed sale to 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. o

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under 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 delivery of the prospectus is expected to be made pursuant to Rule 434, please check the following box. o

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount to be Registered	Proposed Maximum Offering Price Per Share	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Common Stock, $.001 par value	**4,440,486 shares**	**$ 2.32 (1)**	**$ 10,301,928**	**$ 833.43**
Common Stock, $.001 par value	**1,070,662 shares (2)**	**$ 3.05 (3)**	**$ 3,265,519**	**$ 264.18**
Common Stock, $.001 par value	**82,500 shares (2)**	**$ 2.00 (3)**	**$ 165,000**	**$ 13.35**
Common Stock, $.001 par value	**12,739 shares (2)**	**$ 2.67 (3)**	**$ 34,013**	**$ 2.75**
Common Stock, $.001 par value	**507,061 shares (2)**	**$ 2.10 (3)**	**$ 1,064,828**	**$ 86.14**

Total Registration Fee	**$ 1,199.85**

(1) Estimated solely for the purpose of calculating the registration fee. Based, pursuant to Rule 457, on the average of the high and low sale prices of Registrant's Common Stock as reported on Nasdaq SmallCap Market on October 13, 2003. Each share of our common stock is accompanied by one share of our Series A junior participating preferred stock purchase rights that trades with the common stock. The value attributed to those rights, if any, is reflected in the market price of our common stock. Prior to the occurrence of certain events, none of which has occurred as of this date, the rights will not be exercisable or evidenced separately from the common stock. (2) Represents shares issuable upon exercise of outstanding warrants. In accordance with Rule 416, there is also being registered hereunder such indeterminate number of additional shares of Common Stock as may become issuable upon exercise of the warrants to prevent dilution resulting from stock splits, stock dividends or similar transactions. (3) Based, pursuant to Rule 457, on the exercise price of warrants.

THE REGISTRANT HEREBY AMENDS THIS REGISTRATION STATEMENT ON SUCH DATE OR DATES AS MAY BE NECESSARY TO DELAY ITS EFFECTIVE DATE UNTIL THE REGISTRANT SHALL FILE A FURTHER AMENDMENT WHICH SPECIFICALLY STATES THAT THIS REGISTRATION STATEMENT SHALL THEREAFTER BECOME EFFECTIVE IN ACCORDANCE WITH SECTION 8(A) OF THE SECURITIES ACT OF 1933 OR UNTIL THIS REGISTRATION STATEMENT SHALL BECOME EFFECTIVE ON SUCH DATE AS THE COMMISSION, ACTING PURSUANT TO SAID SECTION 8(A), MAY DETERMINE.

Information contained in this prospectus is subject to completion or amendment. A registration statement relating to these securities has been filed with the Securities and Exchange Commission. These securities may not be sold until the registration statement becomes effective. This prospectus is not an offer to sell and is not a solicitation of an offer to buy these securities in any state in which an offer, solicitation or sale is not permitted.

SUBJECT TO COMPLETION, OCTOBER 15, 2003.

PROSPECTUS

CYTRX CORPORATION

Common Stock

All of the shares of our common stock offered hereby are being sold by the securityholders listed in this prospectus. See Selling Securityholders. Each of the shares of our common stock is accompanied by one share of our Series A junior participating preferred stock purchase rights that trades with our common stock. Of the shares offered, 4,440,486 shares are owned by the selling securityholders as of the date of this prospectus and 1,672,962 shares are issuable upon the exercise of outstanding warrants to purchase our common stock held by certain of the selling securityholders. The number of shares offered by the selling securityholders is subject to increase in certain events by reason of so-called antidilution provisions contained in the warrants held by them. The selling securityholders holding warrants must first exercise the warrants and acquire the underlying shares from us before they can resell those shares under this prospectus.

We will receive the exercise price of the warrants described in this prospectus to the extent they are exercised for cash, but we will not otherwise receive any proceeds in connection with the sale of the shares by the selling securityholders. See Use of Proceeds.

Our common stock is traded on the Nasdaq SmallCap Market under the symbol CYTR . On October 14, 2003, the last sale price for the common stock as reported on the Nasdaq SmallCap Market was $2.40.

The selling securityholders may offer the shares from time-to-time to or through brokers, dealers or other agents, or directly to other purchasers, in one or more market transactions or private transactions at prevailing market or at negotiated prices. See Plan of Distribution. We will bear the costs and expenses of registering the shares offered by the selling securityholders. The selling securityholders will bear any commissions and discounts attributable to their sales of the shares.

An investment in our common stock involves a high degree of risk. Before purchasing any shares, you should consider carefully the risks described under Risk Factors beginning on page 8.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved the common stock or determined that this prospectus is complete or accurate. Any representation to the contrary is a criminal offense.

The date of this prospectus is _____, 2003

You should rely only on the information contained or incorporated by reference in this prospectus and any supplement. We have not authorized any other person to provide you with different or additional information. If anyone provides you with different or additional information, you should not rely on it. This prospectus is not an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in or incorporated by reference in this prospectus and any supplement is accurate as of its date only. Our business, financial condition, results of operations, and prospects may have changed since that date.

TABLE OF CONTENTS

THE COMPANY

General

We are a Delaware corporation that was incorporated in 1985 and is engaged in the development and commercialization of pharmaceutical products. Subsequent to our acquisition of Global Genomics Capital in July 2002, we modified our corporate business strategy by discontinuing any further additional research and development efforts for any of our then existing technologies and by seeking strategic alliances, license partners or other collaborative arrangements with other pharmaceutical companies to complete the development of those technologies. As part of our new corporate strategy, we are focusing our efforts on acquiring new technologies and products, which may include products that are already being marketed or have been approved for marketing. We may acquire these technologies or products through a merger of one or more privately held companies possessing existing or potential products or technologies that we consider to be attractive, although we have not entered into any commitments to acquire or merge with any other company.

In April 2003, we acquired our first new technologies by entering into exclusive license agreements with the University of Massachusetts Medical School covering potential applications for the medical institution s proprietary gene silencing technology in the treatment of specified diseases, including those within the areas of obesity and type II diabetes and amyotrophic lateral sclerosis (ALS or Lou Gehrig s disease). We also acquired at that time an exclusive license from the University of Massachusetts Medical School covering the medical institution s proprietary technology with potential gene therapy applications within the area of cancer. There is growing scientific interest in various potential techniques to halt the activity or silence targeted genes that cause cells to produce undesirable proteins as a means for developing therapeutic products. In consideration of the licenses, we made certain cash payments to the University of Massachusetts Medical School totaling approximately $186,000 and issued it a total of 1,613,258 shares of our common stock.

In May 2003, we broadened our strategic alliance with the University of Massachusetts Medical School by acquiring an exclusive license from that institution covering a proprietary DNA-based HIV vaccine technology. In consideration of this license, we made certain cash payments to the University of Massachusetts Medical School totaling approximately $18,000 and issued it 215,101 shares of our common stock. Under our various license agreements, we will be required to make milestone payments to the University of Massachusetts Medical School based on the development of products utilizing the licensed technologies that could aggregate over time up to $12,255,000 if we successfully complete the development of six separate products, and we will be required to pay royalties based on future sales of any products that we commercialize.

As part of our strategic alliance with the University of Massachusetts Medical School, we also agreed to fund certain pre-clinical research at that medical school relating to the use of our technologies licensed from that institution for the development of therapeutic products within certain fields, and have to date entered into agreements with the University of Massachusetts Medical School to sponsor research in the areas of obesity and type II diabetes and ALS. In October 2003, we also entered into an agreement with Massachusetts General Hospital to sponsor research at that institution that will utilize our proprietary gene silencing technology in the area of ALS. Although we intend to internally fund the early stage development work for certain of these product applications (including obesity, type II diabetes and ALS) and may seek to fund the completion of the development of certain of these product applications (such as ALS), we may seek as part of our corporate business strategy to secure strategic alliances or license agreements with larger pharmaceutical companies to fund the early stage development work for other gene silencing product applications and for subsequent development of those potential products where we fund the early stage development work.

In September 2003, we formed a new subsidiary, Araios, Inc., to develop orally active small molecule based drugs for the prevention, treatment and cure of obesity and type II diabetes. This subsidiary will focus on using a genomic and proteomic based drug discovery approach that utilizes our proprietary gene silencing technology to accelerate the process of screening and identifying potential drug targets and pathways for these diseases. Through this subsidiary we will seek to develop orally administered drugs that are based on promising targets and pathways that we may be able to identify. We formed our obesity and type II diabetes subsidiary in collaboration with Dr. Michael P. Czech, a prominent scientist in the fields of obesity and type II diabetes at the University of Massachusetts Medical School. Dr. Czech heads our subsidiary s scientific advisory board and holds a 5% equity interest in this subsidiary. We have provided initial capital of approximately $7,000,000 to this subsidiary to fund the staffing of its operations with managerial and scientific personnel and its initial drug development activities.

Our other products are FLOCOR, an intravenous agent for treatment of sickle cell disease and other acute vaso-occlusive disorders, and TranzFect, a delivery technology for DNA and conventional-based vaccines. Sickle cell disease is an inherited disease caused by a genetic mutation of hemoglobin in the blood, and acute vaso-occlusive disorders are a blockage of blood flow caused by deformed or sickled red blood cells which can cause intense pain in sickle cell disease patients. We are currently seeking strategic partners to complete the development of FLOCOR, and TranzFect is currently being developed by our two licensees for this product, Merck & Co., Inc. and Vical Incorporated. We have granted PSMA Development Company, LLC an option to acquire a license to our TranzFect technology for development as a potential DNA-based prostate cancer adjuvant, and we may also seek to license this technology as a potential conventional adjuvant for hepatitis B and C, flu, malaria and other viral diseases. (Adjuvants are agents added to a vaccine to increase its effectiveness.) We also have a portfolio of potential products and technologies in areas that include spinal cord injury, vaccine delivery and gene therapy. In addition, we own minority interests in two development stage genomics companies, which are described under Global Genomics.

Product Development

University of Massachusetts Medical School Programs

Through our strategic alliance and exclusive license agreements with the University of Massachusetts Medical School, we have acquired the rights to a portfolio of technologies, including a gene silencing technology with potential therapeutic applications in certain defined areas that include obesity and type II diabetes and ALS, a DNA-based HIV vaccine technology and a cancer therapeutic technology.

Our strategic alliance with the University of Massachusetts Medical School may require us to make significant expenditures to fund research at that medical institution relating to developing therapeutic products based on that institution s proprietary technology that has been licensed to us. We estimate that the aggregate amount of these sponsored research expenditures under certain circumstances could range from approximately $1,400,000 to $1,600,000 annually over the next three years. Our license agreements with the University of Massachusetts Medical School require us to make payments of an aggregate of $80,000 per year to maintain all of these licenses, with such aggregate annual payments increasing to as much as $130,000 if we are not then conducting sponsored research at that institution. Our license agreements with the University of Massachusetts Medical School also provide in certain cases for milestone payments based on the progress made by us in the clinical development of products utilizing the technologies licensed from the University of Massachusetts Medical School and the marketing of these products. These milestone payments could aggregate over time up to $12,255,000 if we successfully complete the development of six separate products.

RNA interference (RNAi), commonly referred to as a form of gene silencing, has been shown to effectively silence a targeted gene within a living cell with great specificity and potency. RNA is a polymeric constituent of all living cells and many viruses, consisting of a long, usually single-stranded chain of alternating phosphate and ribose units with the bases adenine, guanine, cytosine, and uracil bonded to the ribose. The structure and base sequence of RNA are determinants of protein synthesis and the transmission of genetic information. RNAi is the technique of using a short piece of RNA to precisely target the messenger RNA from a specific gene. The end result is the silencing of that gene. RNAi is regarded as a significant advancement in gene silencing and recently was featured in the magazine Science as the Breakthrough of the Year in 2002. Delivery of RNAi can be used *in vitro* and *in vivo* to target specific mRNA (messenger RNA) to silence genes and to reduce the levels of the specific protein product coded for by that gene in the targeted cells. This will allow the use of RNAi either as a therapeutic product itself or as a drug discovery tool. We intend to develop the technology and then seek to demonstrate its efficacy in human clinical trials using RNAi to silence viral genes that cause disease or in small molecules developed from RNAi modeling to treat and prevent obesity and type II diabetes.

In mammals and human cells, RNAi can be triggered by delivering short double stranded RNA (dsRNA) molecules directly into the cell s cytoplasm (the region inside the cell membrane but outside the cell nucleus). Specific enzymes (proteins) called dicer enzymes in the cell cut the dsRNA to form small interfering RNA s (siRNAs). These siRNA are approximately 21 to 25 nucleotide long pieces of RNA. The siRNAs then interact with other cell enzymes called the RNA-Induced Silencing Complex, or RISC, which causes the unwinding of the bound siRNA. This unwound strand of the siRNA can bind with the complementary target messenger RNA (mRNA). The mRNA carries the coding (instructions) from the cell nucleus DNA. These instructions determine which proteins the cell is going to produce. When the siRNA binds with the mRNA, that message encounters interference, is not delivered, and the cell does not produce that specific protein. The siRNA can be designed to only interact with a single gene through its mRNA.

One reason for the potential of RNAi to be effective is that the cell already has in place all of the enzymes and proteins to effectively silence genes once the dsRNA is introduced into the cell. This is in direct contrast to the older technology of antisense RNA, where there were no enzymes present in the cells to facilitate the effectiveness of the antisense RNA molecule. In fact, one major problem with antisense has been the poor stability of the antisense product in the cell, caused by the cell recognizing it as a foreign material and trying to break it down. This is one of the reasons for the poor success rate to date for antisense RNA products.

Another reason for the potential of RNAi to be effective is that it may be the first completely effective means of suppressing or eliminating a virus from cells. Once a virus is established in a cell, there are very few drugs that are effective in eliminating the virus (e.g., a cure for a viral disease). The RNAi process has the potential to eliminate viruses and, therefore, the potential to cure certain viral diseases. Development work on RNAi is still at an early stage, and we are not aware of any clinical testing of medical applications using RNAi that have yet been initiated by any party.

The HIV vaccine technology that we have licensed from the University of Massachusetts Medical School is based on a unique mixture of human HIV-1 primary isolates from several genetic subtypes of HIV. This naked DNA (isolated, purified DNA) vaccine approach has the potential advantages of maintaining efficacy despite the high mutation rate of HIV, a broader immune response against divergent HIV-1 glycoproteins and the possible ability to neutralize a wide spectrum of HIV-1 viruses. The University of Massachusetts Medical School has conducted animal studies of this vaccine, and that institution and another company providing an adjuvant for use with the vaccine have received a $15 million grant from the NIH, which will fund a Phase I clinical trial of a vaccine candidate using our licensed technology that is scheduled to begin in late 2003. We do not have a commercial relationship with the company that is providing the adjuvant and is sponsoring this trial. We may seek to enter into such a relationship with that company or may elect to use a different adjuvant in conjunction with our HIV vaccine technology, in which case we may not be able to utilize some or all of the results of the currently planned Phase I trial as part of our clinical data for obtaining FDA approval of a vaccine. According to the World Health Organization, in December 2002, more than 42 million people worldwide were living with HIV/AIDS. We also have licensed a cancer treatment technology from the University of Massachusetts Medical School that is based on a naked DNA approach in which the DNA material will be delivered by direct injection into the tumor or other localized administration.

Massachusetts General Hospital Program

In October 2003, we entered into an agreement with Massachusetts General Hospital pursuant to which we will sponsor certain ALS research at that institution that will utilize our proprietary gene silencing technology. Dr. Robert B. Brown, Jr., a Professor of Neurology at Harvard Medical School and the Director of the Cecil B. Day Laboratory for Neuromuscular Research, will be the principal investigator at Massachusetts General Hospital for this research. We have committed to fund approximately $279,000 of research under this agreement during the first year and approximately $278,000 of research under this agreement during the second year of this program.

Araios

Obesity and type II diabetes are becoming two of the most important health problems in the United States. According to the American Obesity Association, there are currently more than 55 million cases of obesity in the United States, and the American Diabetes Association reports that there are more than 16 million cases of type II diabetes in the United States alone. The World Health Organization estimates that there are more than 250 million cases of obesity worldwide and 176 million cases of type II diabetes worldwide. Scientists at the University of Massachusetts Medical School, as part of our license arrangement with that institution, are researching with funding that we have provided the specific genetic relationship of type II diabetes to obesity. The research is focused on using cultured adipocytes (fat cells) as a model system for studying insulin action on glucose transport, which is the movement of or uptake of glucose into the cell, and metabolic pathways, which are detailed outlines of how different components such as glucose are consumed within a cell. RNAi has the potential of being the only reliable method to selectively inhibit a gene or its protein expression in the cultured adipocytes. This research may lead to a better understanding of the insulin signaling pathway as well as metabolic pathways for glucose and fatty acids. With this understanding, the program will focus on drug discovery for type II diabetes (e.g., drugs that act as insulin sensitizers and compounds that alleviate obesity).

Araios is our newly formed biopharmaceutical company that is utilizing proprietary RNAi gene silencing technology in combination with state of the art target identification methods to discover and develop molecular based medicines for the treatment of obesity and type II diabetes. Through a recent license and sponsored research agreement with the University of Massachusetts Medical School, we have secured rights to novel drug targets believed to be involved in obesity and type II diabetes. Our subsidiary will seek to validate these targets using its proprietary high throughput RNAi gene silencing technology and applying structure based medicinal chemistry. Our subsidiary will then work to develop small molecules and RNAi-based therapeutic products.

Our business strategy is to use our portfolio of state of the art drug discovery technologies and our relationships with leading diabetes and obesity researchers to discover and develop first in class medicines to prevent, treat and cure obesity and type II diabetes.

Therapeutic Copolymer Programs

Our primary focus prior to our acquisition of Global Genomics was on CRL-5861 (purified poloxamer 188), which we also call FLOCOR for purposes of our potential sickle cell disease product. CRL-5861 may also provide benefits in cancer treatment when used in combination with radiation or cytotoxic drugs, which are drugs that can produce a toxic effect in cells.

Sickle cell disease is a devastating disorder originating from an inherited abnormality of hemoglobin, the oxygen-carrying molecule in red blood cells, which is typically seen in African-Americans and others of African descent.

In December 1999, we reported results from a Phase III clinical study of FLOCOR for treatment of acute sickle cell crisis. Although the study did not demonstrate statistical significance in the primary endpoint (objective of the study), statistically significant and clinically important benefits associated with FLOCOR were observed in certain subgroups. In addition, among the entire patient population, treatment with FLOCOR resulted in a statistically significant increase in the percentage of patients achieving resolution of their crisis. The Phase III study also demonstrated that FLOCOR is well tolerated. Based on our conversations with the United States Food and Drug Administration (FDA), we believe it is likely that either two small additional pivotal trials or one large trial will be required for FLOCOR s approval, along with one to two additional safety studies.

Vaccine Enhancement and Gene Therapy

Gene therapy and/or gene based vaccines are mediated through the delivery of DNA containing selected genes into cells by a process known as transfection. We refer to our gene delivery technology as TranzFect.

A large majority of our revenues over the past three years has been generated from license fees paid to us with respect to our TranzFect technology, representing 78%, 85% and 60% of our total revenues for 2002, 2001 and 2000, respectively.

Merck License. In November 2000, we entered into an exclusive, worldwide license agreement with Merck & Co., Inc. whereby we granted Merck the right to use our TranzFect technology in DNA-based vaccines targeted to four infectious diseases, one of which is HIV. To date, Merck has focused its efforts on the HIV application, which is still at an early stage of clinical development, and in July 2003 Merck notified us that it was returning to us the rights to the other three infectious disease targets covered by their license (for which we intend to seek one or more new licensees). In November 2000, Merck paid us a signature payment of $2 million and in February 2002, Merck paid us an additional $1 million milestone fee related to the commencement by Merck of the first FDA Phase I study for the first product incorporating TranzFect designed for the prevention and treatment of HIV. Merck will pay us additional milestone payments and royalties based on sales if certain development milestones are achieved and if Merck commercializes a product utilizing our TranzFect technology. All amounts paid to us are non-refundable upon termination of the agreement and require no additional effort on our part.

Our licensee, Merck & Co., has completed a multi-center, blinded, placebo controlled Phase I trial of an HIV vaccine utilizing TranzFect as a component. Although the formulation of this tested vaccine was generally safe and well-tolerated and generated an immune response, the addition of TranzFect to the vaccine did not increase this immune response. Moreover, the DNA single-modality vaccine regimen with TranzFect when tested in humans yielded immune responses that were inferior to those obtained with the DNA vaccines in macaque monkeys.

Vical License. In December, 2001, we entered into a license agreement with Vical Incorporated granting Vical exclusive, worldwide rights to use or sublicense our TranzFect poloxamer technology to enhance viral or non-viral delivery of polynucleotides, such as DNA and RNA, in all preventive and therapeutic human and animal health applications, except for (1) four infectious disease vaccine targets previously licensed by us to Merck, and (2) DNA vaccines or therapeutics based on prostate-specific membrane antigen (PSMA). In addition, the Vical license permits Vical to use TranzFect poloxamer technology to enhance the delivery of proteins in prime-boost vaccine applications that involve the use of polynucleotides (short segments of DNA or RNA). Vical has not yet commenced any clinical development work with our TranzFect technology. Under the Vical license, we received a non-refundable up-front payment of $3,750,000, and we have the potential to receive milestone and royalty payments in the future based on criteria described in the agreement. All amounts paid to us are non-refundable upon termination of the agreement and require no additional effort on our part.

Global Genomics

On July 19, 2002, we completed the acquisition of Global Genomics. The acquisition of Global Genomics was accomplished through a merger of our wholly owned subsidiary, GGC Merger Corporation, with and into Global Genomics. Global Genomics was the surviving corporation in the merger and is now our wholly owned subsidiary. We have changed Global Genomics name to GGC Pharmaceuticals, Inc., but for purposes of this prospectus, we will continue to refer to the company as Global Genomics. For accounting purposes, we were deemed the acquiror of Global Genomics.

In the Global Genomics merger, each outstanding share of common stock of Global Genomics was converted into 0.765967 shares of our common stock. Accordingly, a total of 8,948,204 shares of our common stock, or approximately 41.7% of our common stock outstanding immediately after the merger, were issued to the common stockholders of Global Genomics, and an additional 1,014,677 shares of our common stock were reserved for issuance upon the exercise of the outstanding Global Genomics warrants that we assumed in the merger. Other than the foregoing stock, we paid no other consideration to the Global Genomics shareholders.

Global Genomics is a development stage company that has been engaged principally in investing in or acquiring companies that develop and commercialize healthcare products driven by genomics technologies. Global Genomics primary assets are a 40% equity interest in Blizzard Genomics, Inc. and a 5% equity interest in Psynomics, Inc.

Blizzard Genomics is developing instrumentation, software and consumable supplies for the growing genomics industry. Blizzard Genomics is the exclusive sublicensee of a technology that it believes allows for cheaper, faster and more portable analysis of DNA, through the use of its own readers and DNA chips, as compared to other currently available technology. Subject to having sufficient financial resources, Blizzard Genomics has plans to commercially launch its first product, a chip reader, during 2004. Since Blizzard Genomics current products are primarily for use in research laboratories, they will not need to be approved by the FDA before they can be marketed.

Psynomics is an early stage psychiatric genomics company. Psynomics is currently operating out of the University of California, San Diego as a virtual company with no full-time or salaried employees, facilities or other corporate or research infrastructure and has had an ongoing research collaboration with its founders at that university. Psynomics goal is to develop technology for the diagnosis and treatment of neuropsychiatric diseases, but it has not yet commenced any work in this area. Psynomics currently has one part-time employee and has been seeking to raise sufficient capital to fund its planned operations and to acquire licenses to certain technologies that it will require.

The shares of our common stock that we issued in the merger with Global Genomics or that we will issue upon exercise of warrants issued by Global Genomics that we assumed in the merger were not registered under the Securities Act. However, pursuant to a registration rights agreement that we signed with the former shareholders of Global Genomics, we registered in August 2003 under the Securities Act the resale of these shares, together with certain other shares of our common stock that we issued or that are issuable upon the exercise of warrants that we have issued to third parties.

Recent Developments

In September 2003, we completed a $8,695,000 private equity financing to a group of institutional and other investors in which we issued 4,140,486 shares of our common stock and warrants to purchase an additional 1,035,125 shares of our common stock at an exercise price of $3.05 per share. Approximately $7,000,000 of the net proceeds of this financing were used to provide the initial capital for our new obesity and type II diabetes subsidiary, with the balance of such proceeds expected to be available for the future operating needs of this subsidiary. This prospectus is part of the registration statement that we filed as a result of our agreement to register for resale under the Securities Act the shares of common stock and the shares of common stock issuable upon exercise of the warrants sold in this financing. This prospectus also covers the resale of certain other shares of our common stock that we issued or that are issuable upon the exercise of warrants that we have issued to third parties.

RISK FACTORS

You should carefully consider the following risks before deciding to purchase shares of our common stock. If any of the following risks actually occur, the trading price of our common stock could decline, and you could lose all or part of your investment. You should also refer to the other information in this prospectus and the information incorporated into this registration statement by reference, including our financial statements and the related notes.

We Have Operated at a Loss and Will Likely Continue to Operate at a Loss For the Foreseeable Future

We have incurred significant losses over the past five years, including net losses of approximately $5,960,000 for the six months ended June 30, 2003 (on an unaudited basis) and $6,176,000, $931,000 and $348,000 for 2002, 2001, and 2000, respectively, and we had an accumulated deficit of approximately $77,918,000 as of June 30, 2003 (on an unaudited basis). Our operating losses have been due primarily to our expenditures for research and development on our products and for general and administrative expenses and our lack of significant revenues. We are likely to continue to incur operating losses until such time, if ever, as we generate significant recurring revenues. Unless we are able to acquire products from third parties that are already being marketed and that can be profitably marketed by us, we believe that it will take a minimum of three years (and possibly longer) for us to generate recurring revenues. We anticipate that it will take at least several years before the development of any of our licensed or other current potential products is completed, FDA marketing approvals are obtained and commercial sales of any of these products can begin.

We Have No Source of Significant Recurring Revenues, Which May Make Us Dependent on Financing to Sustain Our Operations

Although we generated $3,751,000 in revenues from milestone payments from our licensees during 2001 and $1,051,000 from these sources during 2002, we do not have any significant sources of recurring operating revenues. We will not have significant recurring operating revenues until at least one of the following occurs:

- one or more of our currently licensed products is commercialized by our licensees that generates royalty income for us
- we are able to enter into license or other arrangements with third parties who are then able to complete the development and commercialize one or more of our other products that are currently under development
- we are able to acquire products from third parties that are already being marketed or are approved for marketing

We are likely to incur negative cash from operations until such time, if ever, as we can generate significant recurring revenues. Although we believe that we have adequate financial resources to support our currently planned levels of operations for at least the next 24 months, should we thereafter be unable to generate recurring revenues, it is likely that we will become dependent on obtaining financing from third parties to meet our obligations to the University of Massachusetts Medical School and maintain our operations, including our planned level of operations for our new obesity and type II diabetes subsidiary. We have no commitments from third parties to provide us with any debt or equity financing. Accordingly, financing may be unavailable to us or only available on terms that substantially dilute our existing shareholders. A lack of needed financing could force us to reduce the scope of or terminate our operations or to seek a merger with or be acquired by another company. There can be no assurance that we would be able to identify an appropriate company to merge with or be acquired by or that we could consummate such a transaction on terms that would be attractive to our shareholders or at all.

Most of Our Revenues Have Been Generated by License Fees for TranzFect, Which May Not be a Recurring Source of Revenue for Us

License fees paid to us with respect to our TranzFect technology have represented 78%, 85% and 60% of our total revenues for 2002, 2001 and 2000, respectively. We have already licensed most of the potential applications for this technology, and there can be no assurance that we will be able to generate additional license fee revenues from any new licensees for this technology. Our current licensees for TranzFect (Merck and Vical) may be required to make further milestone payments to us under their licenses based on their future development of products using TranzFect. However, Merck is at an early stage of clinical trials of a product utilizing TranzFect, and Vical has not yet commenced any clinical trials of a product utilizing TranzFect. Accordingly, there is likely to be a substantial period of time, if ever, before we receive any further significant payments from Merck or Vical under their TranzFect licenses.

We Have Changed Our Business Strategy, Which Will Require Us in Certain Cases to Find and Rely Upon Third Parties for the Development of Our Products and to Provide Us With Products

We have modified our prior business strategy of internally developing FLOCOR and our other potential products not yet licensed to third parties that we held prior to our merger with Global Genomics. We will now seek to enter into strategic alliances, license agreements or other collaborative arrangements with other pharmaceutical companies that will provide for those companies to be responsible for the development and marketing of those products. Although we intend to internally fund or carry out through our new obesity and type II diabetes subsidiary the early stage development work for certain product applications based on the gene silencing and other technologies that we have licensed from the University of Massachusetts Medical School and we may seek to fund all of the later stage development work for our potential ALS product that is based on our gene silencing technology, the completion of the development and the manufacture and marketing of these products is likely to require in many cases that we enter into strategic alliances, license agreements or other collaborative arrangements with larger pharmaceutical companies for this purpose. There can be no assurance that our products will have sufficient potential commercial value to enable us to secure these arrangements with suitable companies on attractive terms or at all. If we enter into these arrangements, we will be dependent upon the timeliness and effectiveness of the development and marketing efforts of our contractual partners. If these companies do not allocate sufficient personnel and resources to these efforts or encounter difficulties in complying with applicable FDA requirements,

the timing of receipt or amount of revenues from these arrangements may be materially and adversely affected. By entering into these arrangements rather than completing the development and then marketing these products on our own, we may suffer a reduction in the ultimate overall profitability for us of these products. If we are unable to enter into these arrangements for a particular product, we may be required to either sell the product to a third party or abandon it unless we are able to raise sufficient capital to fund the substantial expenditures necessary for development and marketing of the product.

We will also seek to acquire products from third parties that already are being marketed or have previously been marketed. We have not yet identified any of these products. It may be difficult for us to acquire these types of products with our limited financial resources, and we may incur substantial shareholder dilution if we acquire these products with our securities. We do not have any prior experience in acquiring or marketing products and may need to find third parties to market these products for us. We may also seek to acquire products through a merger with one or more privately held companies that own such products. Although we anticipate that we would be the surviving company in any such merger, the owners of the private company could be issued a substantial or even controlling amount of stock in our company.

Our New Obesity and Type II Diabetes Subsidiary May Not Be Able to Develop Products

In order to develop new obesity and type II diabetes products our new subsidiary will first need to identify appropriate drug targets and pathways. We will be using novel RNAi-based techniques to accelerate this process, but there is no assurance that these techniques will accelerate our work or that we will be able to identify highly promising targets or pathways using these techniques or otherwise. Even if we are successful in identifying these targets or pathways, we will need to then develop proprietary molecules that are safe and efficacious against these targets. This development process and the clinical testing of our potential products will take a lengthy period of time and involve expenditures substantially in excess of our current financial resources. We currently plan to seek a strategic alliance with a major pharmaceutical company at a relatively early stage in our development work to complete the development, clinical testing and manufacturing and marketing of our obesity and type II diabetes products, but we may not be able to secure such a strategic partner on attractive terms or at all. We do not have prior experience in operating a genomic and proteomic-based drug discovery company. Accordingly, we will be heavily dependent on the prior experience and current efforts of Dr. Michael P. Czech, the Chairman of the Scientific Advisory Board of our subsidiary, in establishing the scientific goals and strategies of our subsidiary, and Dr. Mark A. Tepper, the President of our subsidiary, in managing the operations of this subsidiary.

Our Current Financial Resources May Limit Our Ability to Execute Certain Strategic Initiatives

On June 30, 2003 we had approximately $5,852,000 in cash and cash equivalents and approximately $5,742,000 in working capital. Our cash and working capital position have significantly improved since June 30, 2003, primarily as the result of our completing a $8,695,000 private equity financing in September 2003, although we have used approximately $7,000,000 of the net proceeds of the financing for the initial capital of our new obesity and type II diabetes subsidiary and the balance of such proceeds are expected to be available for the future operating needs of that subsidiary. Our recently modified product development strategy calls for seeking strategic alliances, licensing agreements or other collaborative arrangements with larger pharmaceutical companies to complete the development of FLOCOR and our other potential products that we had prior to our merger with Global Genomics, and we will not continue any further FLOCOR development work on our own in the meantime. Although we are not doing any further development work on TranzFect, our two licensees for this technology (Merck & Co. and Vical Incorporated) are continuing to do development work on product applications for this technology that could entitle us to future milestone payments should they continue with this work and it successfully meets the defined milestones, as well as future royalty payments should either of these licensees commercialize products based on our technology. However, there can be no assurance that our licensees will continue to develop or ever commercialize any products that are based on our TranzFect technology.

Our strategic alliance with the University of Massachusetts Medical School may require us to make significant expenditures to fund research at that medical institution relating to developing therapeutic products based on that institution s proprietary technology that has been licensed to us. We estimate that the aggregate amount of these sponsored research expenditures under certain circumstances could range from approximately $1,400,000 to $1,600,000 annually over the next three years. We have also agreed to fund approximately $557,000 of sponsored research at Massachusetts General Hospital over the next two years. Our license agreements with the University of Massachusetts Medical School also provide in certain cases for milestone payments based on the progress made by us in the clinical development of products utilizing the technologies licensed from the University of Massachusetts Medical School and marketing of these products. These milestone payments could aggregate over time up to $12,255,000 if we successfully complete the development of six separate products.

Our potentially required expenditures under our agreements with the University of Massachusetts Medical School, together with the operating capital requirements of our new obesity and type II diabetes subsidiary and our planned sponsored research funding for Massachusetts General Hospital, could substantially exceed our current financial resources and require us to raise additional capital or secure a licensee or strategic partner to fulfill our obligations to the University of Massachusetts Medical School and to develop any products based on the technologies that we have licensed from that medical institution or to continue the operations of our new subsidiary at their currently contemplated level. If we are unable to meet our various financial obligations under our license agreements with the University of Massachusetts Medical School, we could lose some or all of our rights under these agreements. We could also be forced to reduce the level of operations of our new subsidiary or discontinue those operations if we had inadequate financial resources at that time.

We also will seek to acquire products from third parties that already are being or have previously been marketed or are approved for marketing. Although we believe this strategy will enhance our ability to achieve profitability, our lack of substantial available funds may make it difficult for us to acquire new products or to adopt other strategic initiatives in the future, such as acquiring or developing a marketing organization for our products or resuming internal development work on our products.

If Our Products Are Not Successfully Developed and Approved by the FDA, We May Be Forced to Reduce or Terminate Our Operations

Each of our products is in the development stage and must be approved by the FDA or similar foreign governmental agencies before they can be marketed. The process for obtaining FDA approval is both time-consuming and costly, with no certainty of a successful outcome. This process typically includes the conduct of extensive pre-clinical and clinical testing, which may take longer or cost more than we or our licensees currently anticipate due to numerous factors such as:

- difficulty in securing centers to conduct trials
- difficulty in enrolling patients in conformity with required protocols or projected timelines
- unexpected adverse reactions by patients in trials
- difficulty in obtaining clinical supplies of the product
- changes in the FDA's requirements for our testing during the course of that testing
- inability to generate statistically significant data confirming the efficacy of the product being tested

The gene silencing and other technologies that we have acquired from the University of Massachusetts Medical School have not yet been clinically tested by us, nor are we aware of any clinical trials having been conducted by third parties involving similar gene silencing technologies. Since TranzFect is to be used as a component in vaccines, we do not need to seek FDA approval, but the vaccine manufacturer will need to seek FDA approval for the final vaccine formulation containing TranzFect. Our licensee, Merck & Co., has completed a multi-center, blinded, placebo controlled Phase I trial of an HIV vaccine utilizing TranzFect as a component. Although the formulation of this tested vaccine was generally safe and well-tolerated and generated an immune response, the addition of TranzFect to the vaccine did not increase this immune response. Moreover, the DNA single-modality vaccine regimen with TranzFect when tested in humans yielded immune responses that were inferior to those obtained with the DNA vaccines in macaque monkeys.

We Were Only Able to Establish the Effectiveness of FLOCOR in a Subset of Patients in a Recent Clinical Trial and May Be Unable to Establish a Viable Medical Indication for FLOCOR or Find a Partner to Fund the Necessary Research for FLOCOR

In December 1999, we reported results from our Phase III clinical trial of FLOCOR for treatment of sickle cell disease patients experiencing an acute vaso-occlusive crisis. Overall, the study was not able to achieve its primary objective, which was to show a statistically significant decrease in the length of vaso-occlusive crisis for the study population as a whole. However, for patients 15 years of age or younger, the number of patients achieving

resolution of crisis was higher for FLOCOR-treated patients at all time periods than for placebo-treated patients, which may indicate that future clinical trials should focus on juvenile patients. We believe that there were certain design flaws in the protocol for the previous Phase III clinical trial relating primarily to the assumed period for resolution of a vaso-occlusive crisis in patients not treated with FLOCOR that may have impacted the results of that clinical trial and that would need to be addressed in properly designing any future trial.

To generate sufficient data to seek FDA approval for FLOCOR will require additional clinical studies, which will entail substantial time and expense. We currently estimate the cost of these clinical trials to be in the range of $10,000,000 $12,000,000, although the actual costs could vary substantially, depending on the nature and number of trials that the FDA ultimately would require. We do not intend to conduct or fund these tests ourselves but will seek a strategic alliance partner or licensee for this purpose. The failure of our prior Phase III trial to generate sufficient data could make it more difficult for us to secure a strategic alliance partner or licensee for this product. In June 2002, the National Heart, Lung and Blood Institute of the National Institutes of Health turned down a grant application by Johns Hopkins University School of Medicine to provide financial support for a potential new Phase III trial for FLOCOR. Since this grant application was submitted at the NIH s suggestion, we believed that there was a reasonable possibility of obtaining governmental funding for the cost of a new FLOCOR trial. However, based on the NIH s rejection of the Johns Hopkins application, we may encounter difficulty in obtaining future governmental financial support for FLOCOR development work should we or any strategic partner or licensee seek such support in the future.

If Blizzard Genomics Fails to Successfully Commercialize Its Products, the Value of Our Assets Will Be Adversely Impacted

Blizzard Genomics, Inc., which is Global Genomics principal portfolio company, has not yet commercialized any of its products. Although Blizzard Genomics plans, subject to obtaining adequate financing, to introduce its first product, the I-Scan Imager, a low cost DNA chip reader, in 2004, it may experience delays in completing the development of or commercially launching this product. Blizzard Genomics products will be used in research laboratories and will not require FDA approval prior to their being marketed. These products are likely to face intense market competition from existing products or technologies and products or technologies that are developed in the future. Blizzard Genomics is the licensee of several U.S. patents, and is seeking additional patent protection for its products and technologies. There can be no assurance, however, that the company will be able to secure sufficient patent coverage for its products and technologies. The failure of Blizzard Genomics to successfully commercialize its products or our earlier determination that such commercialization is unlikely would require us to write down or write off the substantial carrying value of Global Genomics investment in that company as part of our assets, which would not affect our cash position or working capital but would have a materially adverse effect on our stockholders equity.

Blizzard Genomics May Be Unable to Raise Sufficient Funding to Commercialize Its Products, Which Would Adversely Impactthe Value of Our Assets

Blizzard Genomics has no working capital and is currently seeking to raise up to $2,000,000 in capital to fund the commercial launch of the I-Scan Imager and for its working capital needs. Blizzard Genomics has been unable to date to obtain this capital. Failure to raise at least a portion of this capital could delay Blizzard Genomics commercialization of its products and might force it in the near future to suspend or terminate its operations. Should Blizzard Genomics raise at least $750,000 in capital, it believes that it would have sufficient funding to begin commercial marketing of the I-Scan Imager but would require additional capital to complete development of any other products and might need additional capital to support its operations. Any significant delay in the commercialization of Blizzard Genomics products or the cessation of its operations would adversely affect the carrying value of Global Genomics investment in that company as part of our assets, which would have a materially adverse effect on our stockholders equity. We may consider making a further investment in Blizzard Genomics and have had preliminary discussions with that company concerning a potential investment by us. However, we have no obligation to make any new investment in that company.

We Are Subject to Intense Competition That Could Materially Impact Our Operating Results

We and our strategic partners or licensees may be unable to compete successfully against our current or future competitors. The pharmaceutical, biopharmaceutical and biotechnology industry is characterized by intense competition and rapid and significant technological advancements. Many companies, research institutions and universities are working in a number of areas similar to our primary fields of interest to develop new products. There

also is intense competition among companies seeking to acquire products that already are being marketed. Many of the companies with which we compete have or are likely to have substantially greater research and product development capabilities and financial, technical, scientific, manufacturing, marketing, distribution and other resources than at least some of our present or future strategic partners or licensees.

As a result, these competitors may:

- Succeed in developing competitive products earlier than we or our strategic partners or licensees
- Obtain approvals for such products from the FDA or other regulatory agencies more rapidly than we or our strategic partners or licensees do
- Obtain patents that block or otherwise inhibit the development and commercialization of our product candidates
- Develop treatments or cures that are safer or more effective than those we propose for our products
- Devote greater resources to marketing or selling their products
- Introduce or adapt more quickly to new technologies or scientific advances
- Introduce products that make the continued development of our product candidates uneconomical
- Withstand price competition more successfully than our strategic partners or licensees can
- More effectively negotiate third-party strategic alliances or licensing arrangements
- Take advantage of product acquisition or other opportunities more readily than we can

A number of medical institutions and pharmaceutical companies are seeking to develop products based on gene silencing technologies. Companies working in this area include Sirna Therapeutics, Inc., Alnylam, Inc., Benitec, Nucleonics, Inc. and a number of the multinational pharmaceutical companies. A number of products currently are being marketed by a variety of the multinational or other pharmaceutical companies for treating type II diabetes, including among others the diabetes drugs Avandia by Glaxo SmithKline PLC, Actos by Eli Lilly & Co., Glucophage by Bristol Myers Squibb Co., and Starlix by Novartis and the obesity drugs Xenical by F. Hoffman-La Roche Ltd. and Meridia by Abbott Laboratories. Many major pharmaceutical companies are also seeking to develop new therapies for these disease indications. At least one company, Alnylam, is seeking to develop a therapeutic product for obesity and type II diabetes based on an RNAi technology. Companies developing HIV vaccines that could compete with our product include Merck, VaxGen, Inc., Epimmune, Inc., AlphaVax, Inc. and Immunitor Corporation.

Although we do not expect FLOCOR to have direct competition from other products currently available or that we are aware of that are being developed related to FLOCOR s ability to reduce blood viscosity in the cardiovascular area, there are a number of anticoagulant products that FLOCOR would have to compete against, such as tissue plasminogen activator (t-PA) and streptokinase (blood clot dissolving enzymes) as well as blood thinners such as heparin and coumatin, even though FLOCOR acts by a different mechanism to prevent damage due to blood coagulation. In the sickle cell disease area, we would compete against companies that are developing or marketing other products to treat sickle cell disease, such as Droxia (hydroxyurea) marketed by Bristol-Myers Squibb Co. and Decitabine, which is being developed by SuperGen, Inc. Our TranzFect technology will compete against a number of companies that have developed adjuvant products, such as the adjuvant QS-21 marketed by Aquila Biopharmaceuticals, Inc. and adjuvants marketed by Corixa Corp. Blizzard Genomics products will compete with a number of currently marketed products, including those offered by Axon Instruments, Inc., Affymetrix, Inc., Applied Precision, LLC, Perkin Elmer, Inc. and Agilent Technologies, Inc.

The Manufacturing Requirements for FLOCOR May Make It More Difficult for Us to License FLOCOR or for Our Licensee to Develop FLOCOR

The manufacture of CRL-5861 requires the following:

- a supply of the raw drug substance

- a supply of the purified drug which is refined from the raw drug substance
- formulation and sterile filling of the purified drug substance into the finished drug product

A number of suppliers and manufacturers can provide the raw drug substance and the finished drug product. Prior to the change in our business strategy to now seek a strategic partner or licensee for FLOCOR (who we anticipate would be responsible for the manufacture of FLOCOR), we entered into an agreement with Organichem Corp. to provide us with commercial supplies of the purified drug substance. However, this agreement will expire before the end of 2003, which will be well before any potential strategic partner or licensee that we might secure will need commercial supplies of this substance. There can be no assurance that any strategic partner or licensee that we secure will either have the specific equipment expertise to purify the FLOCOR drug substance or will be able to enter into an agreement with Organichem or another supplier on acceptable terms. An inability to obtain purified drug substance in sufficient amounts and at acceptable prices could have a material adverse effect on our ability to secure a strategic partner or licensee or on the ability of that partner or licensee to commercialize FLOCOR.

We May Be Unable to Protect Our Intellectual Property Rights, Which Could Adversely Affect the Value of Our Assets

Obtaining and maintaining patent and other intellectual property rights for our technologies and potential products is critical to establishing and maintaining the value of our assets and our business. Although we believe that we have significant patent coverage for our FLOCOR and TranzFect technologies, there can be no assurance that this coverage will be broad enough to prevent third parties from developing or commercializing similar or identical technologies, that the validity of our patents will be upheld if challenged by third parties or that our technologies will not be deemed to infringe the intellectual property rights of third parties. We have a non-exclusive license to a patent owned by the University of Massachusetts Medical School and another institution that covers the general field of gene silencing. The specific medical applications of the gene silencing technology and the other technologies that we have licensed from the University of Massachusetts Medical School are covered by a number of pending patent applications. However, other researchers have been active in the field of gene silencing, and these researchers may hold or seek to obtain patents that could make it more difficult or impossible for us to develop products based on the gene silencing technology that we have licensed. Any litigation brought by us to protect our intellectual property rights or by third parties asserting intellectual property rights against us could be costly and have a material adverse effect on our operating results or financial condition and make it more difficult for us to enter into strategic alliances with third parties to develop our products or discourage our existing licensees from continuing their development work on our potential products. If our patent coverage is insufficient to prevent third parties from developing or commercializing similar or identical technologies, the value of our assets is likely to be materially and adversely affected.

We May Incur Substantial Costs from Future Clinical Testing or Product Liability Claims

If any of our products are alleged to be defective, they may expose us to claims for personal injury by patients in clinical trials of our products or by patients using our commercially marketed products. Even if the commercialization of one or more of our products is approved by the FDA, users may claim that such products caused unintended adverse effects. We currently do not carry product liability insurance covering the use of our products in human clinical trials or the commercial marketing of these products but anticipate that our licensees who are developing our products will carry liability insurance covering the clinical testing and marketing of those products. However, if someone asserts a claim against us and the insurance coverage of our licensees or their other financial resources are inadequate to cover a successful claim, such successful claim may exceed our financial resources and cause us to discontinue operations. Even if claims asserted against us are unsuccessful, they may divert management s attention from our operations and we may have to incur substantial costs to defend such claims.

Our Anti-Takeover Provisions May Make It More Difficult to Change Our Management or May Discourage Others From Acquiring Us and Thereby Adversely Affect Shareholder Value

We have a shareholder rights plan and provisions in our bylaws that may discourage or prevent a person or group from acquiring us without our board of directors approval. The intent of the shareholder rights plan and our bylaw provisions is to protect our shareholders interests by encouraging anyone seeking control of our company to negotiate with our board of directors.

We have a classified board of directors, which requires that at least two stockholder meetings, instead of one, will be required to effect a change in the majority control of our board of directors. This provision applies to every election of directors, not just an election occurring after a change in control. The classification of our board increases the amount of time it takes to change majority control of our board of directors and may cause our potential purchasers to lose interest in the potential purchase of us, regardless of whether our purchase would be beneficial to us or our stockholders. The additional time and cost to change a majority of the members of our board of directors makes it more difficult and may discourage our existing shareholders from seeking to change our existing management in order to change the strategic direction or operational performance of our company.

Our bylaws provide that directors may only be removed for cause by the affirmative vote of the holders of at least a majority of the outstanding shares of our capital stock then entitled to vote at an election of directors. This provision prevents stockholders from removing any incumbent director without cause. Our bylaws also provide that a stockholder must give us at least 120 days notice of a proposal or director nomination that such stockholder desires to present at any annual meeting or special meeting of stockholders. Such provision prevents a stockholder from making a proposal or director nomination at a stockholder meeting without us having advance notice of that proposal or director nomination. This could make a change in control more difficult by providing our directors with more time to prepare an opposition to a proposed change in control. By making it more difficult to remove or install new directors, the foregoing bylaw provisions may also make our existing management less responsive to the views of our shareholders with respect to our operations and other issues such as management selection and management compensation.

Our Outstanding Options and Warrants and the Registrations of Our Shares Issued in the Global Genomics Merger and Our Recent Private Financings May Adversely Affect the Trading Price of Our Common Stock

As of September 30, 2003, there were outstanding stock options and warrants to purchase 8,847,619 shares of our common stock at exercise prices ranging from $0.01 to $7.75 per share. Our outstanding options and warrants could adversely affect our ability to obtain future financing or engage in certain mergers or other transactions, since the holders of options and warrants can be expected to exercise them at a time when we may be able to obtain additional capital through a new offering of securities on terms more favorable to us than the terms of outstanding options and warrants. For the life of the options and warrants, the holders have the opportunity to profit from a rise in the market price of our common stock without assuming the risk of ownership. To the extent the trading price of our common stock at the time of exercise of any such options or warrants exceeds the exercise price, such exercise will also have a dilutive effect to our stockholders.

This prospectus covers a total of 6,113,448 shares of our common stock, consisting of the 5,175,611 shares we issued or that are issuable upon exercise of the warrants that we issued to the investors in connection with the $8,695,000 private equity financing in September 2003, and an additional 937,837 shares of our common stock that we issued or that are issuable upon the exercise of warrants having exercise prices ranging from $2.00 to $3.05 per share that we issued to certain other third parties. In August 2003, we registered a total of 14,408,252 shares of our outstanding common stock and an additional 3,848,870 shares of our common stock issuable upon exercise of outstanding options and warrants, which shares and options and warrants were issued primarily in connection with our merger with Global Genomics and the private equity financing that we completed in May 2003. Both the availability for public resale of these various shares and the actual resale of these shares could adversely affect the trading price of our common stock.

We May Experience Volatility in Our Stock Price, Which May Adversely Affect the Trading Price of Our Common Stock

The market price of our common stock has experienced significant volatility in the past and may continue to experience significant volatility from time to time. Our stock price has ranged from $0.21 to $3.74 over the past three years. Factors such as the following may affect such volatility:

- our quarterly operating results
- announcements of regulatory developments or technological innovations by us or our competitors
- government regulation of drug pricing
- developments in patent or other technology ownership rights

- public concern regarding the safety of our products

Other factors which may affect our stock price are general changes in the economy, financial markets or the pharmaceutical or biotechnology industries.

FORWARD-LOOKING STATEMENTS

In addition to the other information contained in this prospectus, investors should carefully consider the risk factors disclosed in this prospectus, including those beginning on page 8, in evaluating an investment in our common stock. This prospectus and the documents incorporated herein by reference include forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act. All statements other than statements of historical fact are forward-looking statements for purposes of these provisions, including any projections of financial items, any statements of the plans and objectives of management for future operations, any statements concerning proposed new products or services, any statements regarding future economic conditions or performance, and any statement of assumptions underlying any of the foregoing. In some cases, forward-looking statements can be identified by the use of terminology such as may, will, expects, plans, anticipates, estimates, potential, or could or the negative thereof or other comparable terminology we believe that the expectations reflected in the forward-looking statements contained herein and in such incorporated documents are reasonable, there can be no assurance that such expectations or any of the forward-looking statements will prove to be correct, and actual results could differ materially from those projected or assumed in the forward-looking statements. Our future financial condition and results of operations, as well as any forward-looking statements, are subject to inherent risks and uncertainties, including but not limited to the risk factors set forth above and for the reasons described elsewhere in this prospectus. All forward-looking statements and reasons why results may differ included in this prospectus are made as of the date hereof, and we assume no obligation to update any such forward-looking statement or reason why actual results might differ.

USE OF PROCEEDS

We will bear the costs and expenses of registering the shares offered by the selling securityholders. Other than the exercise of the warrants described herein (to the extent they may be exercised), we will not receive any of the proceeds from the sale of the shares offered by the selling securityholders. The holders of the warrants are not obligated to exercise the warrants, and there can be no assurance that they will choose to do so. The warrants may be exercised for cash or pursuant to the cashless exercise provisions contained therein. If all of the warrants are exercised in full for cash, we will receive approximately $4,529,000 upon exercise.

We intend to use any proceeds we receive from the exercise of the warrants for working capital and general corporate purposes.

SELLING SECURITYHOLDERS

Selling Securityholder Table

The following table sets forth certain information regarding the beneficial ownership of our common stock by the selling securityholders as of October 10, 2003. To our knowledge, each of the selling securityholders has sole voting and investment power with respect to the shares of common stock shown, subject to applicable community property laws. For purposes of the following table we have assumed that the selling securityholders will sell all the shares of our common stock and the shares of our common stock issued upon exercise of the warrants being offered in this prospectus.

	Beneficial Ownership Before Offering(1)		Beneficial Ownership After Offering (1)(3)	
	Number of Shares	Percent (2)	Number of Shares Being Offered	Number of Shares	Percent (2)
Alpha Capital Aktiengesellschaft	89,287 (4)	*	89,287 (4)	0	*
Bluegrass Growth Fund LP	148,810 (5)	*	148,810 (5)	0	*
CD investment Partners, Ltd.	119,049 (6)	*	119,049 (6)	0	*
Cityplatz Limited	446,429 (7)	1.33	446,429 (7)	0	*
Crescent International Ltd.	357,144 (8)	1.07	357,144 (8)	0	*
Crestview Capital Fund II, LP	297,620 (9)	*	297,620 (9)	0	*
Enable Growth Partners	29,763 (10)	*	29,763 (10)	0	*
EPM Holding AG	31,250 (11)	*	31,250 (11)	0	*
EPM Elektro Produktionmaschinen AG	31,250 (12)	*	31,250 (12)	0	*
Generation Capital Associates	62,500 (13)	*	62,500 (13)	0	*
North Olmsted Partners, L.P.	397,620 (14)	1.18	297,620 (14)	100,000	*
Omicron Master Trust	547,780 (15)	1.63	446,429 (15)	101,351	*
OTAPE Investments LLC	119,049 (16)	*	119,049 (16)	0	*
Portside Growth and Opportunity Fund	202,864 (17)	*	148,810 (17)	54,054	*
RFJM Partners LLC	59,525 (18)	*	59,525 (18)	0	*
Riverview Group, LLC	595,239 (19)	1.78	595,239 (19)	0	*
Smithfield Fiduciary LLC	236,321 (20)	*	148,809 (20)	87,512	*
Societe Bancaire Privee	125,000 (21)	*	125,000 (21)	0	*
Enza Vitiello	59,525 (22)	*	59,525 (22)	0	*
Philip M. Damashek & Judith E. Damashek, JT	357,144 (23)	1.07	357,144 (23)	0	*
PTJP Partners L.P.	261,905 (24)	*	261,905 (24)	0	*
Arthur Rabin	148,810 (25)	*	148,810 (25)	0	*
Lauren Jodi Solomon	169,644 (26)	*	169,644 (26)	0	*
Alexander L. & Linda Cappello 2001 Family Trust	953,011 (27)	2.79	197,848 (27)	755,163	2.22
Gerard K. Cappello Trust 2000	211,821 (28)	*	21,360 (28)	190,461	*
Robert & Ellen Deutschman Family Trust	845,123 (29)	2.48	175,451 (29)	669,672	1.97
David Michael Barnes	7,000 (30)	*	4,000 (30)	3,000	*
Janet Green	16,089 (31)	*	4,272 (31)	11,817	*
Sean David-Patrick Kelly	27,150 (32)	*	15,000 (32)	12,150	*
Jaysen S. Kim	16,710 (33)	*	4,000 (33)	12,710	*
Larry N. Kim	1,000 (34)	*	1,000 (34)	0	*
Pompan Family Trust U/A/D 4-4-98	7,485 (35)	*	4,272 (35)	3,213	*
Cardinal Securities LLC	96,608 (36)	*	17,858 (36)	78,750	*
Gilford Securities Incorporated	2,858 (37)	*	2,858 (37)	0	*
J.P. Turner & Company, LLC	727,739 (38)	2.17	370,239 (38)	357,500	1.07
Maxim Group LLC	38,500 (39)	*	38,500 (39)	0	*
Virginia Dadey	38,500 (40)	*	38,500 (40)	0	*
Troy & Gould Professional Corporation	56,250 (41)	*	31,250 (41)	25,000	*
Dwight B. Bronnum	857 (42)	*	857 (42)	0	*
Robert L. Hopkins	858 (43)	*	858 (43)	0	*
Jenkins Capital Management LLC	5,143 (44)	*	5,143 (44)	0	*
Christopher K. Norman	4,571 (45)	*	4,571 (45)	0	*
Visana Versicherunglu AG	625,000 (46)	1.86	625,000 (46)	0	*

---

(1)

Beneficial ownership is determined in accordance with the rules of the SEC and generally includes voting or investment power with respect to securities. Shares of common stock subject to options, warrants and convertible securities currently exercisable or convertible, or exercisable or convertible within 60 days, are deemed outstanding, including for purposes of computing the percentage ownership of the person holding such option, warrant or convertible security, but not for purposes of computing the percentage of any other holder.

(2)

Included as outstanding for this purpose are 33,412,613 shares outstanding on October 10, 2003, plus, in the case of each of these selling stockholders, the shares issuable upon exercise of the warrants held by such selling stockholder (but not including shares issuable upon exercise or conversion of any other options, warrants or other securities held by any other person).

(3)

Assumes that all shares included in this prospectus will be sold by the selling stockholder.

(4)

Represents 71,429 shares of our common stock owned by Alpha Capital Aktiengesellschaft and 17,858 shares of our common stock issuable upon exercise of warrants.

(5)

Represents 119,048 shares of our common stock owned by Bluegrass Growth Fund LP and 29,762 shares of our common stock issuable upon exercise of warrants.

(6)

Represents 95,239 shares of our common stock owned by CD Investment Partners, Ltd. and 23,810 shares of our common stock issuable upon exercise of warrants. CD Capital Management, LLC as the investment manager of CD Investment Partner, Ltd. and John D. Ziegelman as President of CD Capital could be deemed to be the beneficial owners of the foregoing shares and warrants. Mr. Ziegelman disclaims such beneficial ownership.

(7)

Represents 357,143 shares of our common stock owned by Cityplatz Limited and the 89,286 shares of our common stock issuable upon exercise of warrants.

(8)

Represents 285,715 shares of our common stock owned by Crescent International Ltd. and the 71,429 shares of our common stock issuable upon exercise of warrants. Mel Craw and Maxi Brezzi as managers for Greenlight (Switzerland) SA, the investment advisor to Crescent, could be deemed to be the beneficial owners of the foregoing shares and warrants. Messrs. Craw and Brezzi disclaim such beneficial ownership.

(9)

Represents 238,096 shares of our common stock owned by Crestview Capital Fund II, LP and the 59,524 shares of our common stock issuable upon exercise of warrants.

(10)

Represents 23,810 shares of our common stock owned by Enable Growth Partners and the 5,953 shares of our common stock issuable upon exercise of warrants.

(11)

Represents 25,000 shares of our common stock owned by EPM Holding AG and the 6,250 shares of our common stock issuable upon exercise of warrants.

(12)

Represents 25,000 shares of our common stock owned by EPM Elektro Produktionmaschinen AG and the 6,250 shares of our common stock issuable upon exercise of warrants.

(13)

Represents 50,000 shares of our common stock and 12,500 shares of our common stock issuable upon exercise of warrants. The record holder of these securities is Generation Capital Associates and High Capital Funding, LLC is the beneficial owner of these securities.

(14)

Represents 238,096 shares of our common stock owned by North Olmsted Partners, L.P. and 159,524 shares of our common stock issuable upon exercise of warrants, which include 238,096 shares of our common stock and 59,524 shares of our common stock issuable upon exercise of warrants included in this prospectus. Jeffrey Thorp & Company, Inc. is the general partner of North Olmsted Partners, L.P. and Jeffrey Thorp is the sole managing member of Jeffrey Thorp & Company, Inc. Jeffrey Thorp & Company, Inc. and Jeffrey Thorp may be deemed to beneficially own these shares of common stock and warrants.

(15)

Represents 357,143 shares of our common stock owned by Omicron Master Trust and the 89,286 shares of our common stock issuable upon exercise of warrants. Omicron Capital, L.P., which serves as investment manager to Omicron Master Trust, Omicron Capital, Inc., which serves as a general partner of Omicron Capital, L.P., and Winchester Global Trust Company Limited, which serves as the trustee of Omicron Master Trust, and Oliver H. Morali and Bruce T. Bernstein, who are officers of Omicron Capital, Inc., could each be deemed to be beneficial owners of the foregoing shares and warrants. Each of the foregoing entities and individuals disclaims beneficial ownership of the foregoing shares and warrants.

(16)

Represents 95,239 shares of our common stock owned by OTAPE Investments LLC and the 23,810 shares of our common stock issuable upon exercise of warrants. Ira M. Leventhal could be deemed to be a beneficial owner of these securities.

(17)

Represents 119,048 shares of our common stock owned by Portside Growth Opportunity Fund and 83,816 shares of our common stock issuable upon exercise of warrants, which include 119,048 shares of our common stock and 29,762 shares of our common stock issuable upon exercise of warrants included in this prospectus. The investment advisor to Portside Growth and Opportunity Fund is Ramius Capital Group, LLC whose managing member is C4S & Co., whose managing members are Peter Cohen, Morgan Stark, Jeffrey Solomon and Thomas Strauss, who, therefore, could be deemed to be beneficial owners of the foregoing shares and warrants. Messrs. Cohen, Stark, Solomon and Strauss each disclaim beneficial ownership of those shares and warrants.

(18)

Represents 47,620 shares of our common stock owned by RFJM Partners LLC and 11,905 shares of our common stock issuable upon exercise of warrants.

(19)

Represents 476,191 shares of our common stock and 119,048 shares of our common stock issuable upon exercise of warrants. The record holder of these securities is Riverview Group, LLC and Millenium Partners, L.P. is the beneficial owner of these securities.

(20)

Represents 172,775 shares of our common stock owned by Smithfield Fiduciary LLC and 63,546 shares of our common stock issuable upon exercise of warrants, which include 119,047 shares of common stock and 29,762 shares of our common stock issuable upon exercise of the warrants included in this prospectus. Highbridge Capital Management, LLC (Highbridge) as the trading manager of Smithfield Fiduciary LLC (Smithfield) has voting control and investment discretion over securities held by Smithfield. Glenn Dubin and Henry Swieca control Highbridge. Each of Highbridge, Glenn Dubin and Henry Swieca disclaims beneficial ownership of the securities held by Smithfield.

(21)

Represents 100,000 shares of our common stock owned by Societe Bancaire Privee and 25,000 shares of our common stock issuable upon exercise of warrants.

(22)

Represents 47,620 shares of our common stock owned by Enza Vitiello and 11,905 shares of our common stock issuable upon exercise of warrants.

(23)

Represents 285,715 shares of our common stock owned by Philip M. Damashek & Judith E. Damashek, JT and 71,429 shares of our common stock issuable upon exercise of warrants.

(24)

Represents 209,524 shares of our common stock owned by PTJP Partners, L.P. and 52,381 shares of our common stock issuable upon exercise of warrants.

(25)

Represents 119,048 shares of our common stock owned by Arthur Rabin and 29,762 shares of our common stock issuable upon exercise of warrants.

(26)

Represents 135,715 shares of our common stock owned by Lauren Jodi Solomon and 33,929 shares of our common stock issuable upon exercise of warrants.

(27)

Represents 153,262 shares of our common stock owned by the Alexander L. Cappello & Linda Cappello 2001 Family Trust and 799,749 shares of our common stock issuable upon exercise of options and warrants, which include warrants to purchase 197,848 shares of our common stock that we issued in consideration for services rendered by Cappello Capital Corp. as a placement agent in our September 2003 private placement. The 197,848 shares issuable upon exercise of the foregoing warrants are being offered by this prospectus.

(28)

Represents 44,833 shares of our common stock owned by the Gerard K. Cappello Trust 2000 and 166,988 shares of our common stock issuable upon exercise of warrants, which include warrants to purchase 21,360 shares of our common stock that we issued in consideration for services rendered by Cappello Capital Corp. as a placement agent in our September 2003 private placement. The 21,360 shares issuable upon exercise of the foregoing warrants are being offered by this prospectus.

(29)

Represents 135,911 shares of our common stock owned by the Robert Deutschman and Ellen Deutschman Family Trust 709,212 shares of our common stock issuable upon exercise of warrants, which include warrants to purchase 175,451 shares of our common stock that we issued in consideration for services rendered by Cappello Capital Corp. as a placement agent in our September 2003 private placement. The 175,451 shares issuable upon exercise of the foregoing warrants are being offered by this prospectus.

(30)

Represents 7,000 shares of our common stock issuable upon exercise of warrants owned by David Michael Barnes, which include warrants to purchase 4,000 shares of our common stock issuable upon exercise of warrants that we issued in consideration for services rendered by Cappello Capital Corp. as a placement agent in our September 2003 private placement. The 4,000 shares issuable upon exercise of the foregoing warrants are being offered by this prospectus.

(31)

Represents 2,242 shares of our common stock owned by Janet Green and options or warrants to purchase 13,847 shares of our common stock, which include 4,272 shares of our common stock issuable upon exercise of warrants that we issued in consideration for services rendered by Cappello Capital Corp. as a placement agent in our September 2003 private placement. The 4,272 shares issuable upon exercise of the foregoing warrants are being offered by this prospectus.

(32)

Represents 27,150 shares of our common stock issuable upon exercise of warrants owned by Sean David-Patrick Kelly, which include 15,000 shares of our common stock issuable upon exercise of warrants that we issued in consideration for services rendered by Cappello Capital Corp. as a placement agent in our September 2003 private placement. The 15,000 shares issuable upon exercise of the foregoing warrants are being offered by this prospectus.

(33)

Represents 16,710 shares of our common stock issuable upon exercise of warrants owned by Jaysen S. Kim, which include 4,000 shares of our common stock issuable upon exercise of warrants that we issued in consideration for services rendered by Cappello Capital Corp. as a placement agent in our September 2003 private placement. The 4,000 shares issuable upon exercise of the foregoing warrants are being offered by this prospectus.

(34)

Represents 1,000 shares of our common stock issuable upon exercise of warrants that we issued in consideration for services rendered by Cappello Capital Corp. as a placement agent in our September 2003 private placement.

(35)

Represents 7,485 shares of our common stock issuable upon exercise of warrants owned by the Pompan Family Trust U/A/D 4-4-98, which include 4,272 shares of our common stock issuable upon exercise of warrants that we issued in consideration for services rendered by Cappello Capital Corp. as a placement agent in our September 2003 private placement. The 4,272 shares issuable upon exercise of the foregoing warrants are being offered by this prospectus.

(36)

Represents 96,608 shares of our common stock issuable upon exercise of warrants owned by Cardinal Securities LLC, which include 17,858 shares of our common stock issuable upon exercise of warrants that we issued in consideration for services as a placement agent in our September 2003 private placement. The 17,858 shares issuable upon exercise of the foregoing warrants are being offered by this prospectus.

(37)

Represents 2,858 shares of our common stock issuable upon exercise of warrants that we issued in consideration for services rendered as a placement agent in our September 2003 private placement.

(38)

Represents 550,000 shares of our common stock and 177,739 shares of our common stock issuable upon exercise of warrants, which include 275,000 shares of our common stock and 95,239 shares of our common stock issuable upon exercise of warrants that we issued to J.P. Turner & Company LLC in consideration for investment banking services and for services rendered as a placement agent in our September 2003 private placement. The foregoing 275,000 shares and 95,239 shares issuable upon exercise of warrants are being offered by this prospectus.

(39)

Represents 38,500 shares of our common stock issuable upon exercise of warrants that we issued in consideration for services rendered as a placement agent in our September 2003 private placement.

(40)

Represents 38,500 shares of our common stock issuable upon exercise of warrants that we issued in consideration for services rendered by Maxim Group LLC as a placement agent in our September 2003 private placement.

(41)

Represents 50,000 shares of our common stock owned by Troy & Gould Professional Corporation and 6,250 shares of our common stock issuable upon exercise of warrants, of which 25,000 shares of our common stock and 6,250 shares of our common stock issuable upon exercise

of warrants are being offered by this prospectus.

(42)

Represents 857 shares of our common stock issuable upon exercise of warrants that we issued in consideration for services rendered by Dunwoody Brokerage Services, Inc. as a placement agent in our September 2003 private placement.

(43)

Represents 858 shares of our common stock issuable upon exercise of warrants that we issued in consideration for services rendered by Dunwoody Brokerage Services, Inc. as a placement agent in our September 2003 private placement.

(44)

Represents 5,143 shares of our common stock issuable upon exercise of warrants that we issued in consideration for services rendered by Dunwoody Brokerage Services, Inc. as a placement agent in our September 2003 private placement. David Jenkins is the beneficial owner of these securities.

(45)

Represents 4,571 shares of our common stock issuable upon exercise of warrants that we issued in consideration for services rendered by Dunwoody Brokerage Services, Inc. as a placement agent in our September 2003 private placement.

(46)

Represents 500,000 shares of our common stock owned by Visana Versicherunglu AG and 125,000 shares of our common stock issuable upon exercise of warrants.

Relationships with Selling Securityholders

The selling securityholders include certain institutional and other investors who acquired a total of 4,140,486 shares of our common stock and warrants to purchase a total of 1,035,125 shares of our common stock in a private placement that we closed in September 2003. All of those shares are covered by this prospectus. Certain of these institutional investors are affiliated with registered broker-dealers, but these investors acquired the securities covered by this prospectus in the ordinary course of business and, at the time of their acquisition of these securities, they had no agreements or understandings with any person, whether directly, or indirectly, to distribute these securities. In addition, we issued warrants to purchase a total of 549,087 shares of our common stock to Cappello Capital Corp., Cardinal Securities LLC, Dunwoody Brokerage Services, Inc., Gilford Securities Incorporated, J.P. Turner & Company, LLC and Maxim Group LLC for placement agent services rendered in connection with the foregoing private placement. All of the shares issuable upon exercise of those warrants are included in this prospectus.

We paid Cappello Capital Corp. a placement fee of approximately $688,000 in connection with the September 2003 private placement. At the request of Cappello Capital Corp., we issued all of the warrants to purchase a total of 427,203 shares of our common stock that we had agreed to issue to Cappello Capital Corp. in connection with the September 2003 private placement to certain persons designated by that firm. One of the designees was the Alexander L. and Linda Cappello 2001 Family Trust, to which we issued warrants to purchase 197,848 shares of our common stock at $2.10 per share. Alexander L. Cappello, one of our directors, is Chairman and Chief Executive Officer of Cappello Group, Inc., an affiliate of Cappello Capital Corp. The placement fee was paid to Cappello Capital Corp. under the financial advisory agreement that we entered into with Cappello Capital Corp. in May 2003 that also provides for us to pay that firm a monthly retainer fee of $20,000 and that is terminable by either party upon 30 days notice. Mr. Cappello is a related party, and we believe that the terms under which we engaged Cappello Capital Corp. were at least as favorable to us as could have been obtained from an unrelated third party. We valued all of the warrants that were issuable to Cappello Capital Corp. to purchase 427,203 of shares of our common at approximately $1,008,000 and the warrants issued to the Alexander L. and Linda Cappello 2001 Family Trust to purchase a total of 197,848 shares of our common stock at approximately $467,000 for financial statement purposes.

We previously paid Cappello Capital Corp. a placement fee of $408,000 in connection with the May 2003 private placement. At the request of Cappello Capital Corp., we issued all of the warrants to purchase a total of 367,569 shares of our common stock that we had agreed to issue to Cappello Capital Corp. in connection with the May 2003 private placement to certain persons designated by that firm. One of the designees was the Alexander L. and Linda Cappello 2001 Family Trust, to which we issued warrants to purchase 133,767 shares of our common stock at $1.85 per share and warrants to purchase 33,132 shares of our common stock at $3.05 per share. Alexander L. Cappello, one of our directors, is Chairman and Chief Executive Officer of Cappello Group, Inc., an affiliate of Cappello Capital Corp. The placement fee was paid to Cappello Capital Corp. under the financial advisory agreement that we entered into with Cappello Capital Corp. in May 2003. Mr. Cappello is a related party, and we believe that the terms under which we engaged Cappello Capital Corp. were at least as favorable to us as could have been obtained from an unrelated third party. We valued all of the warrants that were issuable to Cappello Capital Corp. to purchase 367,569 of shares of our common stock at approximately $1,060,000 and the warrants issued to the Alexander L. and Linda Cappello 2001 Family Trust to purchase a total of 166,899 shares of our common stock at approximately $481,000 for financial statement purposes.

On January 1, 2001, we entered into a prior agreement with Cappello Capital Corp. in which Cappello Capital Corp. served as our exclusive financial advisor. The initial term of such agreement was for a period of twelve months and was subsequently extended for an additional twelve month period, expiring on December 31, 2002. Under the agreement, Cappello Capital Corp. assisted us with analysis of potential transactions and strategic alternatives. As compensation for its services, we granted Cappello Capital Corp. a ten-year warrant to purchase 1,272,492 shares of our common stock (subject to downward adjustment under certain conditions) with an exercise price of $1.00 per share. We valued these warrants for financial statement purposes at $1,063,000. Pursuant to that agreement, we also paid Cappello Capital Corp. a fee upon the closing of the merger with Global Genomics of 448,330 shares of our common stock, or 4.5% of the shares issuable in the merger. The value of these shares at the date of issuance was $247,000. Under the terms of the extension, we paid Cappello Capital Corp. a monthly retainer fee of $10,000 for the six-month period ending on June 30, 2002. We believe that the terms under which we engaged Cappello Capital Corp. were at least as favorable to us as could have been obtained from an unrelated third party.

We paid Cardinal Securities LLC a placement fee of $40,000 in connection with September 2003 private placement and issued that firm warrants to purchase 17,858 shares of our common stock at $3.05 per share in

connection with that offering. We valued the warrants issued to Cardinal Securities at approximately $41,000 for financial statement purposes. We paid Cardinal Securities LLC a placement fee of approximately $167,000 in connection with the May 2003 private placement and issued that firm warrants to purchase 78,750 shares of our common stock at $3.05 per share in connection with that offering. We valued the warrants issued to Cardinal Securities at approximately $228,000 for financial statement purposes.

We paid J. P. Turner & Company LLC a placement fee of approximately $27,000 in connection with the September 2003 private placement and issued that firm warrants to purchase 12,739 shares of our common stock at $2.67 per share in connection with that offering. We valued the warrants issued to J. P. Turner at approximately $24,000 for financial statement purposes.

In April 2003, we issued warrants to purchase 400,000 shares of our common stock at $.20 per share to J. P. Turner in consideration of its agreement to provide certain investment banking services to us. We valued the warrants to purchase 400,000 shares of our common stock at approximately $260,000 for financial statement purposes. In June 2003, we amended and extended the J.P. Turner agreement and issued that firm 275,000 shares of our common stock and warrants to purchase 82,500 shares of our common stock at $2.00 per share. We valued the foregoing shares and warrants at approximately $671,000 and $154,000, respectively, for financial statement purposes. In August 2003, we further amended and extended the J.P. Turner agreement and issued that firm 275,000 shares of our common stock and warrants to purchase 82,500 shares of our common stock at $2.00 per share. We valued the foregoing shares and warrants at approximately $456,500 and $98,000, respectively, for financial statement purposes.

We paid Gilford Securities Incorporated a placement fee of approximately $8,000 in connection with the September 2003 private placement and issued that firm warrants to purchase 2,858 shares of our common stock at $2.10 per share in connection with that offering. We valued the warrants issued to Gilford Securities at approximately $6,000 for financial statement purposes.

We paid Maxim Group, LLC a placement fee of approximately $162,000 in connection with the September 2003 private placement and issued that firm warrants to purchase 77,000 shares of our common stock at $2.10 per share in connection with that offering. We valued the warrants issued to Maxim Group at approximately $168,000 for financial statement purposes.

We paid Dunwoody Brokerage Services, Inc. a placement fee of $30,000 in connection with the September 2003 private placement and issued that firm warrants to purchase 11,429 shares of our common stock at $3.05 per share in connection with that offering. We valued the warrants issued to Dunwoody Brokerage Services at approximately $24,000 for financial statement purposes.

In October 2003, Troy & Gould Professional Corporation purchased 25,000 shares of our common stock and warrants to purchase 6,250 shares of our common stock at an exercise price of $3.05 per share for a total of $52,500. In May 2003, that firm purchased 25,000 shares of our common stock for $25,000. Troy & Gould Professional Corporation has served as our corporate and securities counsel since July 2002.

Other than as set forth above, none of the selling securityholders has had any position, office, or other material relationship with us or any of our affiliates within the past three years.

The information in the above table is as of the date of this prospectus. Information concerning the selling securityholders may change from time to time and any such changed information will be described in supplements to this prospectus if and when necessary.

PLAN OF DISTRIBUTION

The shares the selling shareholders are offering under this registration statement consist of 6,113,448 shares of our common stock, $.001 par value per share (together with a Series A Junior Participating Preferred Stock Purchase Right that is associated with each share). The shares include 1,672,962 shares reserved for the exercise of warrants issued to some of the selling securityholders. The purpose of this prospectus is to permit the selling securityholders, if they desire, to dispose of some or all of their shares at such times and at such prices as each may choose. Whether sales of shares will be made, and the timing and amount of any sale made, is within the sole discretion of each selling securityholder.

We are registering the shares of common stock on behalf of the selling securityholders. The common stock may be sold in one or more transactions at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market prices, at varying prices determined at the time of sale, or at negotiated prices. These sales may be effected at various times in one or more of the following transactions, or in other kinds of transactions:

- transactions on the NASDAQ Stock Market or on any national securities exchange or U. S. interdealer system of a registered national securities association on which the common stock may be listed or quoted at the time of sale;
- in the over-the-counter market;
- in private transactions and transactions otherwise than on these exchanges or systems or in the over-the-counter market;
- in connection with short sales of the shares;
- by pledge to secure or in payment of debt and other obligations;
- through the writing of options, whether the options are listed on an options exchange or otherwise;
- in connection with the writing of non-traded and exchange traded call options, in hedge transactions and in settlement of other transactions in standardized or over-the-counter options; or
- through a combination of any of the above transactions.

The selling securityholders and their successors, including their transferees, pledgees or donees or their successors, may sell the common stock directly to purchasers or through underwriters, broker-dealers or agents, who may receive compensation in the form of discounts, concessions or commissions from the selling securityholders or the purchasers. These discounts, concessions or commissions as to any particular underwriter, broker-dealer or agent may be in excess of those customary in the types of transactions involved.

The selling securityholders also may engage in short sales against the box, puts and calls and other transactions in our securities or derivatives of our securities and may sell or deliver shares in connection with these trades.

In addition, any securities covered by this prospectus which qualify for sale pursuant to Rule 144 of the Securities Act may be sold under Rule 144 rather than pursuant to this prospectus.

The selling securityholders may from time to time pledge or grant a security interest in some or all of the shares of common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of common stock from time to time under this prospectus after we have filed an amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus.

The selling securityholders also may transfer the shares of common stock in other circumstances, in which case the transferees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus and may sell the shares of common stock from time to time under this prospectus after we have filed an amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending the list of selling securityholders to include the pledgee, transferee or other successors in interest as selling securityholders under this prospectus.

The selling securityholders and any broker-dealers or agents that are involved in selling the shares of common stock may be deemed to be underwriters within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of the shares of common stock purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act.

We entered into a registration rights agreement for the benefit of certain of the selling securityholders to register the common stock under applicable federal and state securities laws. The registration rights agreement

provides for cross-indemnification of those selling securityholders and us and our respective directors, officers and controlling persons against specific liabilities in connection with the offer and sale of the common stock, including liabilities under the Securities Act. We will pay substantially all of the expenses incurred by the selling securityholders incident to the registration of the common stock. Commissions, discounts and transfer taxes, if any, attributable to the sale of the common stock will be borne by the selling securityholders.

The selling securityholders have advised us that they have not entered into any agreements, understandings or arrangements with any underwriters or broker-dealers regarding the sale of their shares of common stock, nor is there an underwriter or coordinating broker acting in connection with a proposed sale of shares of common stock by any selling securityholder. If we are notified by any selling securityholders that any material arrangement has been entered into with a broker-dealer for the sale of shares of common stock, if required, we will file a supplement to this prospectus. If the selling securityholders use this prospectus for any sale of the shares of common stock, they will be subject to the prospectus delivery requirements of the Securities Act.

The anti-manipulation rules of Regulation M under the Securities Exchange Act may apply to sales of our common stock and activities of the selling securityholders.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly, and current reports, proxy statements, and other information with the Securities and Exchange Commission. You may read any document that we have filed or will file with the SEC without charge at the public reference facilities maintained by the SEC at its main office located at Room 1024, Judiciary Plaza, 450 Fifth Street, N.W., Washington, D.C. 20549.

For a fee prescribed by the SEC, you may obtain copies of all or any portion of the documents that we file with the SEC from the main office of the Public Reference Section of the SEC at the above address, or by calling the SEC at 1-800-SEC-0330. Our filings are also available to the public from commercial document retrieval services and at the SEC s Website at http://www.sec.gov.

This prospectus constitutes part of a registration statement on Form S-3 filed by us with the SEC under the Securities Act of 1933, as amended. This prospectus does not contain all of the information contained in the registration statement, and reference is hereby made to the registration statement and related exhibits for information with respect to our company and the securities offered hereby. Any statements contained herein concerning the provisions of any document are not necessarily complete, and, in such instance, reference is made to the copy of such document filed as an exhibit to the registration statement or otherwise filed with the SEC. Each such statement is qualified in its entirety by such reference.

Our common stock is listed and traded on the Nasdaq SmallCap Market under the symbol CYTR . Reports, proxy and information statements, and other information concerning CytRx also may be inspected at the offices of the National Association of Securities Dealers, Inc. located at 1735 K Street, N.W., Washington, D.C. 20006.

INCORPORATION OF INFORMATION FILED WITH THE SEC

The SEC allows us to incorporate by reference the information we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be a part of this prospectus, and information that we later file with the SEC will automatically update and supersede this information. We incorporate by reference the following documents:

- Our annual report on Form 10-K/A for the fiscal year ended December 31, 2002 filed on May 7, 2003
- Our current report on Form 8-K filed on September 17, 2003
- Our current report on Form 8-K filed on May 30, 2003
- Our current report on Form 8-K filed on April 23, 2003
- Our current report on Form 8-K/A filed on March 31, 2003
- Our quarterly report on Form 10-Q for the quarter ended June 30, 2003 filed on August 14, 2003

- Our quarterly report on Form 10-Q for the quarter ended March 31, 2003 filed on May 15, 2003.
- Our quarterly report on Form 10-Q/A for the quarter ended June 30, 2002 filed on March 31, 2003
- Our quarterly report on Form 10-Q/A for the quarter ended September 30, 2002 filed on March 31, 2003
- Our Proxy Statement on Schedule 14A for the Annual Meeting of Stockholders that was held on October 10, 2003
- The description of our Common Stock and Series A junior participating preferred stock purchase rights as described in our registration statements filed under Section 12 of the Securities Exchange Act, and any amendment or report filed for the purpose of updating any such description; and
- Any document that we file with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act after the date of this prospectus and before the termination of this offering. Information in these filings will be deemed to be incorporated by reference as of the date we make the filing.

You may request a copy of these filings from us at no cost by writing or calling us at the following address and telephone number: 11726 San Vicente Blvd., Suite 650 Los Angeles, CA 90049 (310) 826-5648 Attention: Kathryn H. Hernandez, Corporate Secretary. You should rely only on the information contained or incorporated by reference in this prospectus. We have not authorized anyone else to provide you with additional or different information. These securities are only being offered in states where the offer is permitted. You should not assume that the information in this prospectus is accurate as of any date other than the dates on the front of this prospectus.

LEGAL MATTERS

The validity of the securities offered hereby has been passed upon by Troy & Gould Professional Corporation, Los Angeles, California. Troy & Gould Professional Corporation owns 50,000 shares of our common stock and warrants to purchase an additional 6,250 shares of our common stock. This prospectus covers 25,000 of those shares of our common stock and the 6,250 shares of our common stock issuable upon exercise of those warrants.

EXPERTS

Ernst & Young LLP, independent auditors, have audited our consolidated financial statements and schedule included in our Annual Report on Form 10-K/A for the year ended December 31, 2002, as set forth in their report, which is incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements and schedule are incorporated by reference in reliance on Ernst & Young LLP s report, given on their authority as experts in accounting and auditing.

The financial statements of Global Genomics Capital, Inc. as of December 31, 2001 and 2000 and for the year ended December 31, 2001, for the period from inception (May 23, 2000) to December 31, 2000 and for the period from inception (May 23, 2000) to December 31, 2001, incorporated by reference in this prospectus and elsewhere in the registration statement from our Proxy Statement on Schedule 14A for the Annual Meeting of Stockholders held on July 16, 2002, have been audited by Good Swartz Brown & Berns LLP, independent public accountants, as indicated in their report in respect thereto, and are incorporated herein in reliance upon the authority of said firm as experts in giving said report.

Silverman Olson Thorvilson & Kaufmann, Ltd., independent auditors, have audited financial statements of Blizzard Genomics, Inc. for the year ended December 31, 2001, as set forth in their report, which financial statements are contained in our Proxy Statement on Schedule 14A for the Annual Meeting of Stockholders held on July 16, 2002 and are incorporated by reference in this prospectus and elsewhere in the registration statement. The financial statements and schedules of Blizzard Genomics, Inc. are incorporated by reference in reliance on Silverman Olson Thorvilson & Kaufmann, Ltd. s report, given on their authority as experts in accounting and auditing.

The consolidated financial statements of Blizzard Genomics, Inc. included in our annual report on Form 10-K/A for the year ended December 31,2002 incorporated by reference in this prospectus and registration statement have been audited by Ernst & Young LLP, independent auditors, to the extent indicated in their report thereon

(which contains an explanatory paragraph describing conditions that raise substantial doubt about Blizzard Genomics, Inc.'s ability to continue as a going concern as described in Note 10 to the financial statements) also incorporated by reference. Such financial statements have been incorporated herein by reference in reliance upon such report, given on their authority as experts in accounting and auditing.

PART II

INFORMATION NOT REQUIRED IN THE PROSPECTUS

ITEM 14. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION

The Company estimates that expenses in connection with the distribution described in this Registration Statement will be as set forth below. Such costs and expenses shall be borne by the Company. Any commissions, discounts and transfer taxes, if any, attributable to the sales of the shares being registered hereunder will be borne by the selling securityholders.

SEC registration fee	$ 1,200
Printing expenses	$ 2,000
Accounting fees and expenses	$15,800
Legal fees and expenses	$20,000
Miscellaneous	$ 1,000
Total	$40,000

ITEM 15. INDEMNIFICATION OF DIRECTORS AND OFFICERS

The Certificate of Incorporation of the Company was amended in 1986 so as to eliminate personal liability of the members of the Board of Directors to the fullest extent permitted by law. Specifically, Article Eleven of the Certificate of Incorporation provides as follows:

A director of the corporation shall not be personally liable to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except for liability (i) for any breach of the director s duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the Delaware General Corporation Law, or (iv) for any transaction from which the director derived any improper personal benefit. If the Delaware General Corporation Law is amended after approval by the stockholders of this Article to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of the corporation shall be eliminated or limited to the fullest extent permitted by the Delaware General Corporation Law as so amended.

Any repeal or modification of the foregoing paragraph by the stockholders of the corporation shall not adversely affect any right or protection of a director of the corporation existing at the time of such repeal or modification.

In addition, the Certificate of Incorporation and By-Laws of the Company provide for indemnification of all officers and directors of the Registrant to the fullest extent permitted by law. In particular, Article Nine of the Certificate of Incorporation provides as follows:

The corporation shall, to the fullest extent permitted by Section 145 of the General Corporation Law of the State of Delaware, as the same may be amended and supplemented, indemnify any and all persons whom it shall have power to indemnify under said section from and against any and all of the expenses, liabilities or other matters referred to in or covered by said section, and the indemnification provided for herein shall not be deemed exclusive of any other rights to which those indemnified may be entitled under any By-Law, agreement, vote of stockholders or disinterested directors or otherwise, both as to action in his official capacity and as to action in another capacity while holding such office, and shall continue as to a person who has ceased to be a director, officer, employee or agent and shall inure to the benefit of the heirs, executors and administrators of such a person.

Article Five of the Company s By-Laws provides as follows:

1. MANDATORY INDEMNIFICATION. The corporation shall indemnify, to the fullest extent permissible under Delaware law, any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, including an action or suit by or in the right of the corporation to procure a judgment in its favor, by reason of the fact that he or she is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by him in connection with such action, suit or proceeding if he acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interest of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful.

2. MANDATORY ADVANCEMENT OF EXPENSES. Expenses reasonably and actually incurred by a director, officer, employee, or agent in the course of defending any suit under paragraph 1 of this Article V shall be paid by the corporation in advance of the final disposition of the action, suit or proceeding, upon receipt of an undertaking by or on behalf of the director, officer, employee, or agent to repay such amounts if it is ultimately determined that he is not entitled to be indemnified by the corporation. The corporation shall pay these expenses as they are incurred by the person who may be entitled to indemnification.

3. CONTINUATION OF RIGHT TO INDEMNIFICATION. The indemnification and advancement of expenses expressly provided by this bylaw shall continue as to a person who has ceased to be a director, officer, employee or agent and shall inure to the benefit of his heirs, executors and administrators.

4. INTENT OF BYLAW. The intent of this Article V is to provide the broadest possible rights to indemnification to the directors, officers, employees, and agents of the corporation permissible under the law of Delaware and not to affect any other right to indemnification that may exist.

Section 145 of the Delaware General Corporation Law provides as follows:

(a) A corporation shall have power to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation) by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with such action, suit or proceeding if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe the person s conduct was unlawful. The termination of any action suit or proceeding by judgment, order, settlement, conviction, or upon a plea of nolo contendere or its equivalent, shall not, of itself, create a presumption that the person did not act in good faith and in a manner which the person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had reasonable cause to believe that the person s conduct was unlawful.

(b) A corporation shall have power to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against expenses (including attorneys fees) actually and reasonably incurred by the person in connection with the defense or settlement of such action or suit if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation and except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

(c) To the extent that a director, officer, employee or agent of a corporation has been successful on the merits or otherwise in defense of any action, suit or proceeding referred to in subsections (a) and (b) of this section, or in defense of any claim, issue or matter therein, he shall be indemnified against expenses (including attorneys fees) actually and reasonably incurred by him in connection therewith.

(d) Any indemnification under subsections (a) and (b) of this section (unless ordered by a court) shall be made by the corporation only as authorized in the specific case upon a determination that indemnification of the director, officer, employee or agent is proper in the circumstances because the person has met the applicable standard of conduct set forth in subsections (a) and (b) of this section. Such determination shall be made (1) by a majority vote of the directors who are not parties to such action, suit or proceeding, even though less than a quorum, or (2) if there are no such directors, or if such directors so direct, by independent legal counsel in a written opinion, or (3) by the stockholders.

(e) Expenses (including attorneys fees) incurred by an officer or director in defending any civil, criminal, administrative or investigative action, suit or proceeding may be paid by the corporation in advance of the final disposition of such action, suit or proceeding upon receipt of an undertaking by or on behalf of such director or officer to repay such amount if it shall ultimately be determined that he is not entitled to be indemnified by the corporation as authorized in this section. Such expenses (including attorneys fees) incurred by other employees and agents may be so paid upon such terms and conditions, if any, as the board of directors deems appropriate.

(f) The indemnification and advancement of expenses provided by, or granted pursuant to, the other subsections of this section shall not be deemed exclusive of any other rights to which those seeking indemnification or advancement of expenses may be entitled under any bylaw, agreement, vote of stockholders or disinterested directors or otherwise, both as to action in his official capacity and as to action in another capacity while holding such office.

(g) A corporation shall have power to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any liability asserted against him and incurred by him in any such capacity, or arising out of his status as such, whether or not the corporation would have the power to indemnify him against such liability under this section.

(h) For purposes of this section, references to the corporation shall include, in addition to the resulting corporation, any constituent corporation (including any constituent of a constituent) absorbed in a consolidation or merger which, if its separate existence had continued, would have had power and authority to indemnify its directors, officers, and employees or agents, so that any person who is or was a director, officer, employee or agent of such constituent corporation, or is or was serving at the request of such constituent corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, shall stand in the same position under this section with respect to the resulting or surviving corporation as he would have with respect to such constituent corporation if its separate existence had continued.

(i) For purposes of this section, references to other enterprises shall include employee benefit plans; references to fines shall include any excise taxes assessed on a person with respect to any employee benefit plan; and references to serving at the request of the corporation shall include any service as a director, officer, employee or agent of the corporation which imposes duties on, or involves services by, such director, officer, employee or agent with respect to an employee benefit plan, its participants or beneficiaries; and a person who acted in good faith and in a manner he reasonably believed to be in the interest of the participants and beneficiaries of an employee benefit plan shall be deemed to have acted in a manner not opposed to the best interests of the corporation as referred to in this section.

(j) The indemnification and advancement of expenses provided by, or granted pursuant to, this section shall, unless otherwise provided when authorized or ratified, continue as to a person who has ceased to be a director, officer, employee or agent and shall inure to the benefit of the heirs, executors and administrators of such a person.

(k) The Court of Chancery is hereby vested with exclusive jurisdiction to hear and determine all actions for advancement of expenses or indemnification brought under this section or under any bylaw, agreement, vote of stockholders or disinterested directors, or otherwise. The Court of Chancery may summarily determine a corporation s obligation to advance expenses (including attorneys fees).

Section 102(b)(7) of the Delaware General Corporation Law enables a corporation in its certificate of incorporation to eliminate or limit personal liability of members of this board of directors or governing body for violations of a director s fiduciary duty of care. However, directors remain liable for breaches of duties of loyalty, failing to act in good faith, engaging in intentional misconduct, knowingly violating a law, paying a dividend or approving a stock repurchase which was illegal under Delaware General Corporation Law Section 174 or obtaining an improper personal benefit. In addition, equitable remedies for breach of fiduciary duty, such as injunction or recession, are available.

The Company holds an insurance policy covering directors and officers under which the insurer agrees to pay, with some exclusions, for any claim made against the directors and officers of the registrant for a wrongful act that they may become legally obligated to pay or for which the registrant is required to indemnify the directors or officers.

Insofar as indemnification for liabilities arising under the Securities Act of 1933, as amended (the Securities Act) may be permitted for directors, officers and controlling persons of the Company under the above provisions, or otherwise, the Commission has advised us that, in its opinion, such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Company of expenses incurred or paid by a director, officer or controlling person of the Company in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Company will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

ITEM 16. EXHIBITS

The following exhibits are filed herewith or incorporated by reference as a part of this Registration Statement:

4.1 Certificate of Amendment to Restated Certificate of Incorporation (incorporated herein by reference from Exhibit 3.1 to the Company's current report on Form 8-K filed on September 12, 2000)

4.2 Restated Certificate of Incorporation (incorporated by reference from Exhibit 3.1 to the Company's restated registration statement on Form S-3 filed on November 5, 1997, File Number 333-39607)

4.3 Bylaws, as amended (incorporated by reference from Exhibit 4.2 to the Company's registration statement on Form S-8 filed on July 21, 1997, File Number 333-31717)

4.4 Shareholder Protection Rights Agreement dated April 16, 1997 between CytRx Corporation and American Stock Transfer & Trust Company as Rights Agent (Incorporated herein by reference to Exhibit 4.1 to the Company's quarterly report on Form 10-Q for the quarter ended March 31, 1997)

4.5 Form of Common Stock Purchase Warrant between Company and each of the investors in the September 16, 2003 private placement (incorporated herein by reference to Exhibit 4.1 to the Company's current report on Form 8-K filed on September 17, 2003)

5 Opinion of Troy & Gould Professional Corporation*

10.1 Securities Purchase Agreement, dated as of September 15, 2003, between the Company and the Purchasers identified on the signatory page thereof (incorporated herein by reference to Exhibit 10.1 to the Company's current report on Form 8-K filed on September 17, 2003)

10.2 Registration Rights Agreement, dated as of September 15, 2003, between the Company and the Purchasers identified on the signature page thereof (incorporated herein by reference to Exhibit 10.2 to the Company's current report on Form 8-K filed on September 17, 2003)

23.1 Consent of Troy & Gould Professional Corporation (included in Exhibit 5)*

23.2 Consent of Ernst & Young LLP*

23.3 Consent of Good Swartz Brown & Berns, LLP *

23.4 Consent of Silverman Olson Thorvilson & Kaufmann, Ltd.*

23.5 Consent of Ernst & Young LLP*

24 Power of Attorney

____

* Included herewith.

ITEM 17. UNDERTAKINGS

(a) The undersigned Company hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by section 10(a)(3) of the Securities Act;

(ii) To reflect in the prospectus any facts or events arising after the effective date of this registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in this registration statement; and

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement; provided, however, that (i) and (ii) do not apply if the registration statement is on Form S-3, and the information required to be included in a post-effective amendment is contained in periodic reports filed with or furnished to the Commission by the registrant pursuant to section 13 or section 15(d) of the Exchange Act that are incorporated by reference in the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(b) The undersigned Company hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the Company s annual report pursuant to section 13(a) or section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan s annual report pursuant to section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Company pursuant to the foregoing provisions, or otherwise, the Company has been advised that in the opinion of the Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Company of expenses incurred or paid by a director, officer or controlling person of the Company in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Company will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

(d) The undersigned Company hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this Registration Statement on Form S-3 to be signed on its behalf by the undersigned, thereunto duly authorized in the City of Los Angeles, State of California, on October 14, 2003.

CYTRX CORPORATION

By:

/s/ Steven A. Kriegsman

Steven A. Kriegsman

Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Steven A. Kriegsman his true and lawful attorneys-in-fact and agents, with full power of substitution, for him in any and all capacities, to sign this Registration Statement and any amendments hereto, and to file the same, with exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as he might do or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their substitute or substitutes, may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement on Form S-3 has been signed by the following persons in the capacities and on the dates indicated

Signature

Title

Date

/s/ STEVEN A. KRIEGSMAN

Steven A. Kriegsman Chief Executive Officer and Director October 14, 2003

/s/ C. Kirk Peacock

C. Kirk Peacock Chief Financial Officer and Principal Accounting Officer October 14, 2003

/s/ Alexander L. Cappello

Alexander L. Cappello. Director October 14, 2003

/s/ Louis J. Ignarro, Ph.D

Louis J. Ignarro, Ph.D Director October 14, 2003

/s/ Max Link

Max Link Director October 14, 2003

/s/ Joseph Rubinfeld

Joseph Rubinfeld Director October 14, 2003

Marvin R. Selter Director October __, 2003

/s/ Richard L. Wennekamp

Richard L. Wennekamp Director October 14, 2003

EXHIBIT INDEX

The following exhibits are filed herewith or incorporated by reference as a part of this Registration Statement:

4.1 Certificate of Amendment to Restated Certificate of Incorporation (incorporated herein by reference from Exhibit 3.1 to the Company's current report on Form 8-K filed on September 12, 2000)

4.2 Restated Certificate of Incorporation (incorporated by reference from Exhibit 3.1 to the Company's restated registration statement on Form S-3 filed on November 5, 1997, File Number 333-39607)

4.3 Bylaws, as amended (incorporated by reference from Exhibit 4.2 to the Company's registration statement on Form S-8 filed on July 21, 1997, File Number 333-31717)

4.4 Shareholder Protection Rights Agreement dated April 16, 1997 between CytRx Corporation and American Stock Transfer & Trust Company as Rights Agent (Incorporated herein by reference to Exhibit 4.1 to the Company's quarterly report on Form 10-Q for the quarter ended March 31, 1997)

4.5 Form of Common Stock Purchase Warrant between Company and each of the investors in the September 16, 2003 private placement (incorporated herein by reference to Exhibit 4.1 to the Company's current report on Form 8-K filed on September 17, 2003)

5 Opinion of Troy & Gould Professional Corporation*

10.1 Securities Purchase Agreement, dated as of September 15, 2003, between the Company and the Purchasers identified on the signatory page thereof (incorporated herein by reference to Exhibit 10.1 to the Company's current report on Form 8-K filed on September 17, 2003)

10.2 Registration Rights Agreement, dated as of September 15, 2003, between the Company and the Purchasers identified on the signature page thereof (incorporated herein by reference to Exhibit 10.2 to the Company's current report on Form 8-K filed on September 17, 2003)

23.1 Consent of Troy & Gould Professional Corporation (included in Exhibit 5)*

23.2 Consent of Ernst & Young LLP*

23.3 Consent of Good Swartz Brown & Berns, LLP *

23.4 Consent of Silverman Olson Thorvilson & Kaufmann, Ltd.*

23.5 Consent of Ernst & Young LLP*

24 Power of Attorney

_____

* Included herewith.