TRANSGENOMIC INC
Form S-3
September 14, 2004
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**As filed with the Securities and Exchange Commission on September 14, 2004**

**Commission File No.: 333-**

**UNITED STATES**

**SECURITIES AND EXCHANGE COMMISSION**

**Washington, D.C. 20549**

**FORM S-3**

**REGISTRATION STATEMENT**

***UNDER***

***THE SECURITIES ACT OF 1933***

# TRANSGENOMIC, INC.

**(Exact Name of Registrant As Specified In Its Charter)**

| **Delaware** | **91-1789357** |
|---|---|
| **(State of Incorporation)** | **(IRS Employer I.D. Number)** |

**12325 Emmet Street Omaha, Nebraska 68164 (402) 452-5400**

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

**Collin J. D Silva**

**President and Chief Executive Officer 12325 Emmet Street Omaha, Nebraska 68164 (402) 452-5400**

**(Name, address and telephone number of Agent for Service)**

***Copies to:***

**Steven P. Amen**

**Kutak Rock LLP**

**1650 Farnam Street**

**Omaha, Nebraska 68102**

**Tel: (402) 346-6000**

**Fax: (402) 346-1148**

**APPROXIMATE DATE OF COMMENCEMENT OF PROPOSED SALE TO THE PUBLIC:** From time to time after the effective date of this Registration Statement as determined by market conditions.

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

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. ¨

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. ¨

If delivery of the prospectus is expected to be made pursuant to Rule 434, please check the following box. ¨

**CALCULATION OF REGISTRATION FEE**

| Title of Shares To be Registered | Amount to Be Registered | Proposed Maximum Aggregate Price per Share[1] | Proposed Maximum Aggregate Offering Price | Amount of Registration Fee |
|---|---|---|---|---|
| Common Stock, $0.01 par value | 4,717,099[2] | $1.02 | $4,817,099 | $610.33 |

(1) Calculated as the weighted average of the following: 4,317,099 shares at $1.00 per share and 400,000 shares at $1.25 per share.

(2) Consists of 4,317,099 shares of common stock issuable upon conversion of $5,750,000 in outstanding convertible debt and 400,000 shares issuable upon exercise of outstanding warrants. A total of 2,417,276 shares issuable upon conversion of the $5,750,000 of convertible debt were previously registered under the Securities Act of 1933, as amended, pursuant to the registration statement on Form S-3 (Registration No. 333-114661).

The prospectus forming a part of this Registration Statement, as such prospectus may be amended or supplemented from time to time (the Prospectus ), shall be deemed to relate to the 4,717,099 shares of common stock being registered pursuant to this Registration Statement and, pursuant to Rule 429 the General Rules and Regulations under the Securities Act of 1933, to (i) 3,729,447 shares of common stock registered for resale by selling stockholders pursuant to the registration statement on Form S-3 (Registration No. 333-108319), (ii) 595,918 shares of common stock registered for resale by selling stockholders pursuant to the registration statement on Form S-3 (Registration No. 333-111442) and (iii) 2,557,842 shares of common stock registered for resale by selling stockholders pursuant to the registration statement on Form S-3 (Registration No. 333-114661) (collectively, the Prior Registration Statements ). As such, this registration statement constitutes Post-Effective Amendment No. 1 to each of the Prior Registration Statements. The amount of filing fees associated with the common stock registered pursuant to the Prior Registration Statements (calculated at the fee in effect at the time of filing of the Prior Registration Statements) is $407.74, $227.68 and $784.05, respectively.

**We hereby amend this Registration Statement on such date or dates as may be necessary to delay its effective date until we 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 according to Section 8(a), may determine.**

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

**Subject to Completion, dated September 14, 2004**

**PRELIMINARY PROSPECTUS**

# 11,600,306 Shares

# TRANSGENOMIC, INC.

## COMMON STOCK

This Prospectus covers 11,600,306 shares ( Shares ) of our common stock that the selling stockholders listed under Selling Stockholders may offer and resell from time to time. These Shares consist of:

- up to 3,729,447 Shares that we issued in a private placement in November, 2003 that remain unsold by the selling shareholders; and
- up to 7,870,859 Shares that may be issued upon conversion of outstanding warrants and additional convertible debt.

The selling stockholders may sell the shares at the then prevailing market price for the shares at the time of the sale, or at other prices. The last reported sale price for our common stock on September 13, 2004 was $1.16 per share. We will not receive any of the proceeds from the sale of these shares by these stockholders.

Our common stock is listed on the Nasdaq National Market under the symbol TBIO.

The selling stockholders are offering the common stock as described under Plan of Distribution.

**Investing in our common stock involves a high degree of risk. You should carefully consider the information under the heading Risk Factors beginning on page 5 of this Prospectus before buying shares of our common stock.**

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

, 2004

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**Forward-Looking Statements**

This prospectus contains or incorporates by reference certain forward-looking statements. Many of these forward-looking statements refer to our plans, objectives, expectations and intentions, as well as our future financial results and are subject to risk and uncertainty. You can identify these forward-looking statements by words such as expects, anticipates, intends, plans, may, will, believes, seeks, estimates and expressions. Because these forward-looking statements involve risks and uncertainties, there are many factors that could cause our actual results to differ materially from those expressed or implied by these forward-looking statements, including those discussed under Risk Factors in this Prospectus or described in reports that we file from time to time with the Securities and Exchange Commission, such as our Forms 10-K and 10-Q.

You should rely only on the information contained in or incorporated by reference into this Prospectus. We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. The information in this Prospectus is current as of its date. Our business, financial condition, results of operations and prospects may have changed since that date.

This Prospectus references the following registered trademarks which are the property of Transgenomic: DNASEP® Columns, WAVE® System, WAVEMAKER® Software, TRANSFORMING THE WORLD® for Laboratory Equipment, TRANSGENOMIC® and the Globe Logo®; MutationDiscovery.com® Website, OLIGOSEP® for Systems and Reagents, OPTIMASE® Polymerase, RNASEP® Columns, WAVE OPTIMIZED® reagents, and WAVE® MD Systems. Additionally, this Prospectus references the following trademarks which are the property of Transgenomic: MitoScreen Kits, ProtocolWriter Software, Navigator Software, THE POWER OF DISCOVERY for Lab Reagents and Educational Programs, and Surveyor Nuclease. All other trademarks or trade names referred to in this Prospectus are the property of their respective owners.

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## ABOUT THIS PROSPECTUS

*This Prospectus does not contain all of the information you need to consider before buying our common stock. Additional important information is contained in the documents that are incorporated by reference into this Prospectus, including more detailed financial statements and the notes thereto. See Incorporation of Certain Documents By Reference. As a result, information presented in this Prospectus is qualified in its entirety by this additional information. We urge you to carefully read this entire Prospectus, along with the additional information that is incorporated by reference into this Prospectus, before investing in our common stock. In particular, you should carefully consider the information discussed under Risk Factors . All references to we, us or the Company in this Prospectus mean Transgenomic, Inc.*

## TRANSGENOMIC, INC.

### Our Business

We provide innovative products and services for the synthesis, purification and analysis of nucleic acids. Our operations fall into two principal business units, BioSystems and Nucleic Acids. Our BioSystems products include our WAVE® automated instrument systems, WAVE associated consumable products and other related consumable products. Our Nucleic Acids products include chemical building blocks for nucleic acid synthesis and synthesized nucleic acids. Both business units have service offerings as well, including genetic variation discovery and analysis services, novel chemistry development services and custom synthesis of nucleic acids. Our business strategy is to align our products and services with the advancements in the field of genetics and to become a major supplier of products and services to researchers, medical institutions, diagnostic and pharmaceutical companies. Specifically, our strategy is to:

- Establish the WAVE System as the industry standard in the genetic research market, thereby expanding the installed base of systems and related consumable sales; and

- Position ourselves as a unique partner to biopharmaceutical and pharmaceutical companies in the early stages of their efforts to develop genomic-based diagnostics and therapeutics thereby allowing us to participate in future successes of products derived from the expanding knowledge of genomics.

Our technologies center around three core competencies: separation chemistries, enzymology, and nucleic acid chemistries. We employ novel chemistries for separating nucleic acids, proteins, peptides, amino acids and carbohydrates. Our most significant separation technology is currently embodied in the WAVE System. The WAVE System is a versatile instrument that can be used for variation detection, size-based double-strand DNA separation and analysis, single-strand DNA separation and analysis and DNA purification. The WAVE System requires the use of various consumable products that we manufacture and sell separately.

Our second core competency is expertise in developing novel enzymes. Enzymes are proteins that act as catalysts for biochemical reactions. Several of these reactions are useful in genomics. The ability to develop enzymes useful in the experimental manipulation of genes provides powerful tools for producing genetic material in the form needed for further analysis or incorporation into diagnostics and therapeutics. These products can also expand the sale of consumable products to WAVE System users and may also be sold for other applications. Our SURVEYOR® product line of mutation detection kits allow for the cleaving of DNA at points where DNA sequence variations exists. The resulting DNA fragments can then be analyzed by our WAVE System, fluorescent capillary electrophoresis or standard gel electrophoresis. SURVEYOR Kits provide a simple and robust method of scanning relatively large DNA fragments for both known and novel sequence variations.

Our third core competency is nucleic acid chemistries. Our synthetic nucleic acid products consist of chemical building blocks of nucleic acids (known as phosphoramidites ), fluorescent markers and dyes, associated reagents, and synthesized segments of nucleic acids (known as oligonucleotides and oligomimetics ). These products are used by research organizations, diagnostic companies and pharmaceutical companies. We produce these products in our Glasgow, Scotland facility and our Cgmp facility in Boulder, Colorado. The Boulder, Colorado facility is able to further process phosphoramidite products into synthesized oligonucleotides in larger quantities. This facility will also provide process development, enhancement and unique chemistry development services. Finally, our nucleic acid chemistry capabilities also include the ability to produce related specialty chemicals, such as molecular tags, dyes, quenchers, linkers, and solvents used to modify nucleic acids for subsequent detection or manipulation.

The Company s operations are managed based upon the nature of the products and services provided. Accordingly, the Company operates in two reportable segments, BioSystems and Nucleic Acids. Operations for these segments are evaluated based upon specific identification of revenues and expenses associated with the business activities resulting in a segment operating income.

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**Business Strategy**

Our business strategy is to align our product and service offerings with the evolution of genetic advancements and to become a major supplier of products and services to researchers, medical institutions, diagnostic and pharmaceutical companies. Genetic advancements have developed and continue to develop over time. The movement in the field of genomics, and related market opportunities, has shifted from gene discovery to the analysis of variations in gene sequences. Researchers are beginning to link variations in the gene sequences to disorders and diseases. This knowledge may lead to the creation of diagnostic tests and the development of therapeutic treatments and drugs for these disorders and diseases.

Our Nucleic Acids segment has historically operated at a loss and produced negative cash flow. While we believe the long-term prospects for this business segment are favorable, the projected levels of near-term revenues from this segment are not expected to generate either positive cash flows or a profit from operations. After considering, amongst other factors, the historical financial results of this division and the near-term outlook for the nucleic acids industry, our Board of Directors directed management to explore strategic alternatives for this operating segment, including the possible sale of one or both of the facilities in Glasgow, Scotland and Boulder, Colorado. The process of exploring and evaluating alternatives for our Nucleic Acids segment is ongoing and no transaction has been agreed to as of the date hereof. However, it is possible that we may not continue to pursue the Nucleic Acid segment of our business as a result of this process.

**Sales and Marketing**

We currently sell our products to customers in over 30 countries. We use a direct sales and support staff for sales in the U.S., U.K. and most countries in Western Europe. For the rest of the world, we sell our products through dealers and distributors located in those local markets. As of August 31, 2003, we had over 25 dealers and distributors. We also maintain regionally-based technical support staffs and applications scientists to support our sales and marketing activities throughout the U.S. and Europe.

**Customers**

Customers include numerous leading academic and medical institutions in the U.S. and abroad. In addition, our customers also include a number of large, established U.S. and foreign pharmaceutical, biotech and commercial companies. During the first six months of 2004, sales to Geron Corporation represented 10.2% of total consolidated revenue and 41.8% of total revenue within our Nucleic Acids business unit. No other customers currently account for more than 10% of total consolidated or segment revenue.

**Research and Development**

We maintain an active program of research and development and expect to continue to incur significant expense for these activities going forward. Our research and development activities include the improvement of the DNA separation media used in our WAVE System, the refinement of the hardware and software components of the WAVE System, the creation of unique enzymes and WAVE-Optimized® enzymes, and the improvement of chemical and biochemical reaction techniques for synthetic nucleic acids. Through the first six months of 2004, our research and development expenditures were approximately $3.6 million. This represents a substantial reduction from the levels of expenditures in recent years. Our research and development expenses were $9.3 million, $12.2 million and $9.4 million in 2003, 2002 and 2001, respectively. We expect that we will further curtail our research and development activities until we are able to increase our revenues and otherwise improve our liquidity and working capital positions.

**Manufacturing**

We manufacture bioconsumable products including our separation columns, liquid reagents, enzymes and nucleic acid products. The major components of our WAVE systems are manufactured for us by a third party. We integrate our own hardware and software with these third party manufactured components. Our manufacturing facilities for our WAVE systems and bioconsumables are located in Omaha, Nebraska, San Jose, California, and Cramlington, England. Our Synthetic Nucleic Acid products are manufactured in Glasgow, Scotland and Boulder, Colorado.

**Intellectual Property**

To establish and protect our proprietary technologies and products, we rely on a combination of patent, copyright, trademark and trade-secret laws, as well as confidentiality provisions in our contracts. We have successfully prosecuted or licensed in numerous patents protecting our core technologies, and as a result we presently own rights to more than 80 issued patents and over 70 pending applications in both the U.S. and abroad. Our DNA separation technologies and methods embodied in our BioSystems business unit products are protected by patents and licensed technologies. These patents, including licensed technologies, have remaining lives of

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between 9 to 18 years. Intellectual property related to our Nucleic Acid business unit is mainly inlicensed. We expect to continue to file patent applications and seek new licenses as we develop new products and technologies.

**Recent Developments**

***Liquidity***. Despite our efforts to reduce costs and to obtain additional debt and equity financing, our liquidity and working capital position has deteriorated. As of August 31, 2004, we had approximately $665,000 in cash and cash equivalents. The deterioration in our liquidity and working capital position is largely due to the operating losses that we continue to incur, particularly in our Nucleic Acids operating segment, and to increased accounts receivable (largely from international sales), inventory, and to a lesser extent, purchases of property and equipment. In particular, our Boulder, Colorado facility continues to generate significant negative cash flows from operations in the range of $200,000 to $300,000 per month.

We have funded operating losses and other uses of liquidity primarily through increased borrowings under two loan arrangements entered into with Laurus Master Fund, Ltd. ( Laurus ). In December 2003, we obtained a three-year $7.5 million line of credit facility from Laurus. Funds available under the line are determined by a borrowing base equal to 90% of eligible accounts receivable balances plus up to $1.0 million related to inventory balances. However, Laurus has waived this borrowing limitation through March 19, 2005 in order to make the entire $7.5 million available to us. This line of credit is secured by most of our assets. Borrowings under this loan carry an interest rate of 2.0% over the prime rate, subject to a minimum of 6.0% per annum. Payment of interest and principal can, under certain circumstances, be made with shares of the Company s common stock. Conversion of this debt to common stock may be made at the election of Laurus or the Company. We may elect to convert borrowings into stock only if our shares trade at a price exceeding $1.10 per share for ten consecutive trading days and such conversion is further subject to trading volume limitations and a limitation on the total beneficial ownership by Laurus of our common stock. In order to obtain an extension of the borrowing base waiver and certain other concessions, we amended the line of credit facility in August 2004 to reduce the fixed conversion price from $2.20 per share to $1.00 per share. As of September 10, 2004, we had $1.1 million available under this facility.

In February 2004, we entered into a separate $2.75 million convertible term note with Laurus. Portions of the proceeds from this transaction were mainly used to retire the mortgage debt on our facility in Glasgow, Scotland. The remaining proceeds of approximately $750,000 were used to further the build-out of the Glasgow facility, complete the consolidation of operations into the new facility and to provide funds for operations. The term note carries an interest rate of 2.0% over the prime rate, subject to a minimum of 6.0% per annum, and has a term of 3 years. The principal and interest on the term note may also be converted into our common stock. In order to obtain certain concessions, we amended the term note in August 2004 to reduce the fixed conversion price from $2.61 per share to $1.00 per share.

In connection with the line of credit facility and term note, we issued warrants to Laurus to acquire 1,075,000 shares of our common stock at exercise prices ranging from $1.25 to $3.11 per share.

In order to meet our cash needs for the remainder of 2004, it is essential that we significantly reduce operating losses, particularly in our Nucleic Acids operating segment, either through increased revenues or further expense reductions. We have taken steps to further reduce our operating expenses, including reductions in workforce, furloughs, scaled back operations, consolidation and other cost containment measures, and we expect to continue to implement measures to reduce our need for operating cash. However, implementation of some of these measures, such as workforce reduction, could actually result in an increased demand for cash in the short-term. In addition, certain costs such as facility leases may not be renegotiated or terminated. Excess property and equipment resulting from future facility consolidation could be liquidated at prices that may or may not approximate book value. We could also delay capital expenditures to the extent possible to conserve cash.

We also continue to explore strategic alternatives with respect to our Nucleic Acids business segment. This operating segment primarily consists of two facilities, our oligonucleotides facility in Boulder, Colorado and our phosphoramidites manufacturing facility in Glasgow, Scotland. Potential strategic alternatives for our Nucleic Acids business include the sale of one or both of these facilities.

We are also working to improve the collection of accounts receivables. As of August 31, 2004, we have over $8.3 million invested in accounts receivable. However, our collection cycle, particularly in Europe, is relatively long and has lengthened due to

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uncertainty in funding for capital spending among our customer base. In addition to focusing on accelerating collections, we may decide to factor or sell receivables not used as collateral under our loan facilities with Laurus. While this may generate additional cash, the receivables would have to be sold at significant discounts. We are also exploring liquidating raw materials or works in process inventories in our Nucleic Acids segment. As of August 31, 2004, we had over $5.8 million invested in these inventories. Although these inventories generally have a long shelf life, they may require reworking from time to time. Alternatively, we may choose to liquidate some of these inventories at a significant discount to market or book value.

The effect of the execution of any of these items on our financial position, operations and cash flows has not been quantified but could be significant. Additionally, there is no assurance any of these steps will allow us to meet our cash needs or that we will be able to obtain additional debt or equity financing to meet future cash needs. If we are not able to meet our needs for working capital, we may not be able to execute parts or all of our business plan and may need to discontinue operations in one or both of our business segments.

***Impairment of Nucleic Acid Segment Assets***. Based upon information obtained through the process of evaluating strategic alternatives for our Nucleic Acids segment, we determined that it was more likely than not that the value of these assets associated with this business were impaired. We engaged an external valuation firm to conduct an interim period impairment test which resulted in us recording a non-cash charge of $11,964,387 related to these assets during the three months ended June 30, 2004. The charge consisted of $9,864,387 related to the impairment of goodwill and $2,100,000 related to the impairment of property and equipment.

***Changes in Senior Management***. Michael A. Summers became our Chief Financial Officer effective August 17, 2004. Michael Summers replaced Mitchell Murphy who was acting as interim Chief Financial Officer since the departure of Michael Draper in March, 2004. Mr. Summers previous experience includes ten years in public accounting and five years at publicly traded companies. Mr. Murphy remains as Vice President, Secretary and Treasurer.

In addition, John Allbery, resigned as Executive Vice President of Operations in August, 2004 to pursue other business opportunities. Mr. Allbery had primary responsibility for oversight of the Company s Nucleic Acids business segment. Collin D Silva, our Chief Executive Officer, has assumed these responsibilities.

***New Litigation***. In August, 2004, we were notified that we were the defendant in a lawsuit brought by a prospective distributor of our products located in Spain. The plaintiff claims that we breached a promise to award a distributorship to him for a specific geographic area and is seeking monetary relief of approximately $500,000. We believe we have viable defenses to the plaintiff s claims and intend to defend this lawsuit vigorously.

**General Information**

We were incorporated in Delaware on March 6, 1997. Our principal office is located at 12325 Emmet Street, Omaha, Nebraska 68164 (telephone: 402-452-5400). We maintain manufacturing facilities in Omaha, Nebraska, Boulder, Colorado, San Jose, California, Glasgow, Scotland and Cramlington, England. We maintain research and development offices in Gaithersburg, Maryland, Boulder, Colorado, Piscataway, New Jersey and Omaha, Nebraska.

Our internet address is *www.transgenomic.com*. We make our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports available free of charge through our website as soon as reasonably practicable after we file these documents with the Securities and Exchange Commission. The information contained in our website is not part of this Prospectus and you should not rely on it in deciding whether to invest in our common stock.

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## RISK FACTORS

*An investment in our common stock involves a number of risks. Before making an investment decision, you should carefully consider all of the risks described in this Prospectus and the documents that are incorporated by reference into this Prospectus. The risks discussed in this Prospectus could materially adversely affect our business, financial condition and results of operations and cause the trading price of our common stock to decline significantly. If this occurs, you may lose all or part of your investment.*

***We may not have adequate financial resources to execute our business plan and may be need to terminate some operations.***

Despite our efforts to reduce costs and to obtain additional debt and equity financing, our liquidity and working capital position has deteriorated. As of August 31, 2004, we had approximately $665,000 in cash and cash equivalents. The deterioration in our liquidity and working capital position is largely due to the operating losses that we continue to incur, particularly in our Nucleic Acids operating segment, and to increased accounts receivable (largely from international sales), inventory, and to a lesser extent, purchases of property and equipment. We expect to continue to need substantial amounts of cash to fund our operations and capital expenditures and our existing cash balances, cash generated by operations, and our remaining borrowing capacity under our existing line of credit may be insufficient to satisfy our liquidity requirements. In order to meet our cash needs for the remainder of 2004, it is essential that we significantly reduce operating losses, particularly in our Nucleic Acids operating segment, either through increased revenues or further expense reductions. We also need to accelerate the collection of accounts receivables and eliminate or delay capital expenditures. There is no assurance any of these steps will allow us to meet our cash needs. In addition, there is no assurance that we will be able to obtain additional debt or equity financing to meet future cash needs. If we are not able to meet our needs for working capital, we may not be able to execute parts or all of our business plan and may need to discontinue operations in one or both of our business segments.

***We have a history of operating losses and expect to incur losses in the future.***

We have experienced losses from operations since inception of our operations. Our operating losses for each of the last three fiscal years were $22.6 million, $21.7 million and $9.7 million, in 2003, 2002 and 2001, respectively, and for the first six months of 2004 were $18.0 million. These losses have been due principally to the high levels of research and development expenses and sales and marketing expenses that we have incurred in order to develop and market our products, restructuring charges and impairment charges. In addition, markets for our products have developed more slowly than expected in many cases and may continue to do so. As a result, we expect to incur operating losses in the future and we may never be profitable.

***We may issue a substantial amount of our stock in conversion of our debt and exercise of options and warrants and this could reduce the market price for our stock.***

As of August 30, 2004, we had outstanding approximately 29.1 million shares of common stock. We also had obligations to issue approximately 6.6 million million shares of common stock under outstanding stock options and warrants. Additionally, we may issue shares of common stock upon conversion of all or part of our line of credit and convertible tern note with Laurus. Currently, Laurus may acquire 5,750,000 shares of our common stock upon conversion of this debt. The issuance of such additional shares of common stock may be dilutive to our current shareholders and could negatively impact the market price of our common stock.

***Markets for our products and services may develop slowly.***

There are many factors that affect the market demand for our products and services that we cannot control. This is especially true in our Nucleic Acid segment where the demand for our products depends to a large degree on the success that our customers and potential customers have in developing useful pharmaceutical products based on genetic intervention. A central strategy for our Nucleic Acid segment is to sell synthetic nucleic acid products to biopharmaceutical and pharmaceutical companies that are seeking to develop commercially viable genomic-based diagnostic and therapeutic products. We have invested a significant amount of capital into acquiring and developing manufacturing facilities and other assets to allow us to pursue this market. However, this is a new field of commercial development, and many of these biopharmaceutical and pharmaceutical companies are in the early stages of their efforts to develop genomic-based diagnostics and therapeutics and have encountered difficulties in these efforts. As a result, the demand for our synthetic nucleic acid products is difficult to forecast and may develop slowly or sporadically. In addition, we cannot assure you that these companies will not internally develop the chemistries and manufacturing capabilities to produce the products they could buy from us. Demand for our WAVE System is similarly affected by the needs and budgetary resources of research institutions, universities, hospitals and others who use the WAVE System for genetic-variation research. The WAVE System represents a significant expenditure by these types of customers and often requires a long sales cycle. If revenues from the sales of our products and services continue at current levels, we may need to take steps to further reduce operating expenses or raise additional

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working capital. We cannot assure you that sales will increase or that we will be able to reduce operating expenses or raise additional working capital.

***A single customer accounts for a significant portion of the sales in our Nucleic Acids business segment.***

During the first six months of 2004, approximately 42% of the total revenues generated by our Nucleic Acids segment represented sales to a single customer, Geron Corporation. We do not have a long-term sales agreement with Geron Corporation and, accordingly, the amount of nucleic acid products we sell to it is subject to change. Revenues from our Nucleic Acids business would be substantially reduced if Geron Corporation s need for our products declined or if it decided to obtain these products from other suppliers.

***Customer clinical trials may be delayed or discontinued.***

A significant percentage of our Nucleic Acid business unit revenues are generated by sales to customers involved in drug development. Our products are generally used by these customers in the manufacture of drugs candidates in varying stages clinical trials. If these clinical trials are delayed or cancelled or are otherwise not successful, this could have a significant impact on revenues generated by our Nucleic Acid business unit.

***The sale of our products and business operations in international markets subjects us to additional risks.***

During the last three fiscal years, our international sales have been approximately 50-65% of our net sales. As a result, a major portion of our revenues and expenses are subject to risks associated with international sales and operations. These risks include:

- payment cycles in foreign markets are typically longer than in the U.S. and capital spending budgets for research agencies can vary over time with foreign governments;
- changes in foreign currency exchange rates can make our products more costly and operating expenses higher in local currencies since our foreign sales and operating expenses are typically paid for in U.S. Dollars, British Pounds or the Euro; and
- the potential for changes in U.S. and foreign laws or regulations that result in additional import or export restrictions, higher tariffs or other taxes, more burdensome licensing requirements or similar impediments to our ability to sell products and services profitably in these markets.

***Our WAVE System includes hardware components and instrumentation manufactured by a single supplier and if we are no longer able to obtain these components and instrumentation our ability to manufacture our products could be impaired.***

We currently rely on a single supplier, Hitachi High Technologies America, to provide the basic instrument used in our WAVE Systems. While other suppliers of instrumentation and computer hardware are available, we believe that our arrangement with Hitachi offers strategic advantages. Hitachi is replacing its current instrument line with a new instrument line. While we presently plan to convert our technology and application to this new instrument line, such conversion may not be successful and, therefore, we may incur additional costs for the custom manufacturing of the current instrument line. If we were required to seek alternative sources of supply, it could be time consuming or expensive or require significant and costly modification of our WAVE System. Also, if we were unable to obtain instruments from Hitachi in sufficient quantities or in a timely manner, our ability to manufacture our products could be impaired, which could limit our future revenues.

***We may not have adequate personnel to execute our business plan.***

In order to reduce our operating costs, we have significantly reduced our number of employees, including reductions in our research and development staff and our sales and marketing personnel. In addition, we may lose other key management, scientific, technical, sales and manufacturing personnel from time to time. It may be very difficult to replace personnel if they are needed in the future, and the loss of key personnel could harm our business and operating results. We cannot assure you that our employee reductions will not impair our ability to continue to develop new products and refine existing products in order to remain competitive. In addition, these reductions could prevent us from successfully marketing our products and developing our customer base.

***Our markets are very competitive.***

We compete with many other companies in both our Biosystems segment and Nucleic Acids segment. Competitors for our Biosystems segment include several companies, such as Varian, Waters, Agilent, Applied Biosystems, Beckman Coulter, Amersham Biosciences and Invitrogen. These companies provide various products and services that compete either directly with our WAVE system, bioconsumables and services, or indirectly through alternative technologies and/or methods. Competitors for our Nucleic Acid segment vary depending on the product. In the standard chemical building blocks market, we compete with Applied Biosystems, Proligo Degussa and Pierce Nucleic Acid Technologies. The competitors for our pharmaceutical-grade oligonucleotide synthesis products and services include primarily Proligo Degussa, Dow Chemical and Avecia. Many of these competing companies have greater resources than we do or may enjoy other competitive advantages. This may allow them to more effectively market their products to our customers or potential customers, to develop products that make our products obsolete or to produce and sell products

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less expensively than us. As a result of these competitive factors, demand for and pricing of our products and services could be negatively affected.

***The price for our common stock is volatile and may drop further.***

The trading price for our stock has fluctuated significantly over recent years. The volatility in the price of our stock is attributable to a number of factors, not all of which relate to our operating results and financial position. Nevertheless, continued volatility in the market price for our stock should be expected and we cannot assure you that the price of our stock will increase in the future. Fluctuations or further declines in the price of our stock may affect our ability to sell shares of our stock and to raise capital through future equity financing.

***If we are unable to maintain our Nasdaq listing, your ability to trade shares of our common stock could suffer.***

In order for our common stock to remain listed on the Nasdaq Stock Market, we must meet the minimum listing requirements for continued listing, including, among other requirements, minimum bid price and market value of public float requirements. If we fail to continue to meet the minimum listing requirements, we may be delisted from the Nasdaq. If our common stock is delisted from the Nasdaq, transactions in our common stock would likely be conducted only in the over-the counter market, or potentially on regional exchanges, which could negatively impact on the trading volume and price of our common stock, and investors may find it more difficult to purchase or dispose of, or to obtain accurate quotations as to the market value of, our common stock. In addition, if our common stock were not listed on the Nasdaq and the trading price of our common stock fell below $1.00 per share, trading in our common stock would also be subject to the requirements of certain rules which require additional disclosures by broker-dealers in connection with any trades involving a stock defined as a penny stock. In such event, the additional burdens imposed on broker-dealers to effect transactions in our common stock could further limit the market liquidity of our common stock and the ability of investors to trade our common stock.

***Our patents may not protect us from others using our technology that could harm our business and competitive position.***

Patent law relating to the scope of claims in the technology fields in which we operate is still evolving. The degree of future protection for our proprietary rights is uncertain. Furthermore, we cannot be certain that others will not independently develop similar or alternative products or technology, duplicate any of our products, or, if patents are issued to us, design around the patented products developed by us. Our patents or licenses could be challenged by litigation and, if the outcome of such litigation were adverse to us, our competitors could be free to use our technology. We may not be able to obtain additional patents for our technology, or if we are able to do so, patents may not provide us with substantial protection or be commercially beneficial. In addition, we could incur substantial costs in litigation if we are required to defend ourselves in patent suits brought by third parties or if we initiate such suits.

***We cannot be certain that other measures taken to protect our intellectual property will be effective.***

We rely upon trade secret protection, copyright and trademark laws, non-disclosure agreements and other contractual provisions for some of our confidential and proprietary information that is not subject matter for which patent protection is being sought. Such measures, however, may not provide adequate protection for our trade secrets or other proprietary information. If they do not protect our rights, third parties could use our technology and our ability to compete in the market would be reduced.

***We are dependent upon our licensed technologies and may need to obtain additional licenses in the future to offer our products and remain competitive.***

We have licensed key components of our technologies from third parties. If these agreements were to terminate prematurely due to our breach of the terms of these licenses or we otherwise fail to maintain our rights to such technology, we may lose the right to manufacture or sell a substantial portion of our products. In addition, we may need to obtain licenses to additional technologies in the future in order to keep our products competitive. If we fail to license or otherwise acquire necessary technologies, we may not be able to develop new products that we need to remain competitive.

The patent underlying our nonexclusive license to manufacture standard nucleic acid building blocks will expire in the first quarter of 2005. The expiration of this patent could result in additional manufacturers entering the market for these products. Some of these manufacturers may have lower cost structures or other competitive advantages which may reduce our market share and/or our operating margins related to these products.

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***The protection of intellectual property in foreign countries is uncertain.***

A significant percentage of our sales are to customers located outside the U.S. The patent and other intellectual property laws of some foreign countries may not protect our intellectual property rights to the same extent as U.S. laws. We may need to bring proceedings to defend our patent rights or to determine the validity of our competitors foreign patents. These proceedings could result in substantial cost and diversion of our efforts. Finally, some of our patent protection in the U.S. is not available to us in foreign countries due to the laws of those countries.

***Our products could infringe on the intellectual property rights of others.***

There are a significant number of U.S. and foreign patents and patent applications submitted for technologies in, or related to, our area of business. As a result, any application or exploitation of our technology could infringe patents or proprietary rights of others and any licenses that we might need as a result of such infringement might not be available to us on commercially reasonable terms, if at all. This may lead others to assert patent infringement or other intellectual property claims against us.

***Our failure to comply with any applicable government regulations or otherwise respond to claims relating to improper handling, storage or disposal of hazardous chemicals that we use may adversely affect our results of operations.***

Our research and development and manufacturing activities involve the controlled use of hazardous materials and chemicals. We are subject to federal, state and local laws and regulations governing the use, storage, handling and disposal of hazardous materials and waste products. If we fail to comply with applicable laws or regulations, we could be required to pay penalties or be held liable for any damages that result and this liability could exceed our financial resources. We cannot assure you that accidental contamination or injury will not occur. Any such accident could damage our research and manufacturing facilities and operations, resulting in delays and increased costs.

## USE OF PROCEEDS

We will not receive any proceeds from the sale of the shares of common stock offered by this Prospectus. However, we received initial loan proceeds of $2.75 million on a 3 year term note which may be converted into 2,750,000 of the shares that may be offered hereby. Additionally, we have approximately $6.4 million outstanding on our line credit of which $3.0 million relates to a Secured Convertible Minimum Borrowing Note which may be converted into 3,000,000 of the shares that may be offered hereby. Another 909,091 shares were issued by us upon conversion of a previous $2.0 million Secured Convertible Minimum Borrowing Note issued pursuant to our line of credit, and these shares may also be sold hereunder. We previously received net proceeds of approximately $4.2 million pursuant to a Securities Purchase Agreement entered into with certain selling stockholders who may sell up to 4,500,000 shares hereunder. Finally, we will receive approximately $2.4 million upon the exercise of warrants for the remaining 1,136,484 shares that may be offered hereby. The loan proceeds, the proceeds from the sale of shares and the proceeds we receive from any exercise of these warrants have been, or will be, used by us primarily for working capital purposes.

## SELLING STOCKHOLDERS

The shares offered by this Prospectus may be sold from time to time by the selling stockholders named in the following table. The number of shares these selling stockholders are offering under this Prospectus will be adjusted to reflect any additional shares of common stock which may become issuable to the selling stockholders by reason of any stock dividend, stock split or other similar transaction effected without the receipt of consideration and which results in an increase in the number of our outstanding shares of common stock or which otherwise increases the number of shares issuable upon conversion of the loan proceeds or upon the exercise of the warrants under which such shares may by issued.

The following table also sets forth the total number of shares of our common stock beneficially owned by each of the selling stockholders and the percentage of our total outstanding shares of common stock that each selling stockholder beneficially owns. Percentage ownership is based on the shares of our common stock outstanding as of the date of this Prospectus plus the shares that may be issued to certain of the selling stockholders and which may be sold under this Prospectus. The estimate of shares owned after this offering assumes that all shares offered by the Prospectus are sold. These estimates may prove to be inaccurate because the selling stockholders may offer all or some of their shares and because there currently are no agreements, arrangements or understandings with respect to the sale of any of the shares.

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| Name | Shares Beneficially Owned Prior to the Offering | | Shares to be Sold | Shares Beneficially Owned After the Offering | |
|---|---|---|---|---|---|
| | Number | Percentage | | Number | Percentage |
| Laurus Master Fund, Ltd.[1] | 1,526,813 | 4.99% | 7,809,375 | 0 | * |
| TN Capital Equities, Ltd.[2] | 61,484 | * | 61,484 | 0 | * |
| Mazama Capital Management, Inc.[3] | | | | | |
| Advisors Fund for Employees Benefit Trust | 14,100 | * | 14,100 | 0 | * |
| The Collins Foundation | 1,650 | * | 1,650 | 0 | * |
| Daughters of Charity Fund P | 42,400 | * | 42,400 | 0 | * |
| East Bay Municipal Utility District | 20,200 | * | 20,200 | 0 | * |
| Hendrix College | 4,600 | * | 4,600 | 0 | * |
| Horace Mann Small Cap Growth Fund | 15,300 | * | 15,300 | 0 | * |
| Intermountain Health Care | 36,800 | * | 36,800 | 0 | * |
| Kansas City Firefighters Retirement System | 15,000 | * | 15,000 | 0 | * |
| Los Angeles County Employee Retirement Association | 264,213 | * | 264,213 | 0 | * |
| Marin County Employee Retirement System | 35,700 | * | 35,700 | 0 | * |
| Mass Mutual Small Company Growth Fund | 72,000 | * | 72,000 | 0 | * |
| Northwest Airlines DB | 92,000 | * | 92,000 | 0 | * |
| Northwest Airlines DC | 105,300 | * | 105,300 | 0 | * |
| City of New York Police Pension Fund | 76,600 | * | 76,600 | 0 | * |
| Operf | 26,184 | * | 26,184 | 0 | * |
| Portland General Electric | 13,600 | * | 13,600 | 0 | * |
| Les Schwab Tires | 13,300 | * | 13,300 | 0 | * |
| SEI Institutional Investments Trust | 144,900 | * | 144,900 | 0 | * |
| SEI Institutional Managed Trust | 246,400 | * | 246,400 | 0 | * |
| University of Miami Growth Plan | 39,000 | * | 39,000 | 0 | * |
| Retirement Plan for University of Miami | 22,300 | * | 22,300 | 0 | * |
| Undiscovered Managers Small Cap Growth Fund | 167,700 | * | 167,700 | 0 | * |
| Utah Retirement Systems | 144,200 | * | 144,200 | 0 | * |
| Horizon Rudder & Co. | 53,500 | * | 53,500 | 0 | * |
| Subtotal Mazama Capital Management, Inc. | 1,666,947 | 5.73% | 1,666,947 | 0 | * |
| Kopp Emerging Growth Fund[4] | 2,800,000 | 9.63% | 2,050,000 | 750,000 | 1.84% |
| Frank Colen | 12,500 | * | 12,500 | 0 | * |
| Edward Newman | 0 | * | 0 | 0 | * |
| James Irvine | 0 | * | 0 | 0 | * |
| | 6,067,744 | 19.79% | 11,600,306 | 750,000 | 1.84% |

* less than 1%

(1) Laurus Master Funds, Ltd. has contractually agreed to beneficial ownership limitations that restrict the conversion or exercise of securities held by Laurus to 4.99% of outstanding shares. However, they may elect to waive the 4.99% limitation with 75 days notice or upon default under the Convertible Term Note or the Senior Secured Convertible Minimum Borrowing Note. Shares to be sold consist of 3,265,625 shares issuable upon conversion of a $2.75 million Convertible Term Note, 3,468,750 shares issuable upon the conversion of a $3.0 million Secured Convertible Minimum Borrowing Note and 1,075,000 shares issuable upon the exercise of warrants.

(2) All shares to be sold and beneficially owned represent shares issuable upon the exercise of warrants. TN Capital Equities, Ltd. ( TerraNova ) served as broker for the agreements entered into between the Company and Laurus. Warrants were issued to TerraNova as partial compensation for their services as broker.

(3)

Mazama Capital Management, Inc. exercises sole dispositive power over the shares held by selling shareholders listed under it in the table and, therefore, is considered a beneficial owner of these shares.

(4) Kopp Investment Advisors, LLC acts as the advisor to Kopp Emerging Growth Fund. Voting and dispositive power over the shares held by Kopp Emerging Growth Fund are exercised by a portfolio management committee of Kopp Investment Advisors, LLC presently consisting of LeRoy Kopp, Sally Anderson and Steven Crowley.

Each selling stockholder acquired, or will acquire, the shares to be sold by such selling stockholder in the ordinary course of business and, at the time of acquisition of such shares, no selling stockholder had any agreement or understanding, directly or indirectly, to distribute such shares.

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## PLAN OF DISTRIBUTION

The selling stockholders or their donees or pledgees may sell their shares of our common stock from time to time. The selling stockholders will act independently of us in making decisions regarding the timing, manner and size of each sale. The sales may be made on the Nasdaq National Market, in the over-the-counter market or otherwise, at prices and terms then prevailing or at prices related to the then current market price, or in negotiated transactions. The last reported sale price of our common stock on September 13, 2004 was $1.16 per share. The selling stockholders may effect such transactions by selling the shares to or through broker-dealers. The shares may be sold by one or more of, or a combination of, the following:

- a block trade in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction,
- purchases by a broker-dealer as principal and resale by such broker-dealer for its account under this prospectus,
- an exchange distribution in accordance with the rules of such exchange,
- ordinary brokerage transactions and transactions in which the broker solicits purchasers, and
- in privately negotiated transactions.

To the extent required, this Prospectus may be amended or supplemented from time to time to describe a specific plan of distribution. In effecting sales, broker-dealers engaged by the selling stockholders may arrange for other broker-dealers to participate in the resales. The selling stockholders may enter into hedging transactions with broker-dealers in connection with distributions of the shares or otherwise. In these transactions, broker-dealers may engage in short sales of the shares in the course of hedging the positions they assume with selling stockholders. The selling stockholders also may sell shares short and redeliver the shares to close out such short positions. The selling stockholders may enter into option or other transactions with broker-dealers which require the delivery to the broker-dealer of the shares. The broker-dealer may then resell or otherwise transfer such shares under this prospectus. The selling stockholders also may lend or pledge their shares to a broker-dealer. The broker-dealer may sell the shares so lent, or upon a default the broker-dealer may sell the pledged shares under this Prospectus.

Broker-dealers or agents may receive compensation in the form of commissions, discounts or concessions from selling stockholders. Broker-dealers or agents may also receive compensation from the purchasers of the shares for which they act as agents or to whom they sell as principals, or both. Compensation as to a particular broker-dealer might be in excess of customary commissions and will be in amounts to be negotiated in connection with the sale. Broker-dealers or agents and any other participating broker-dealers or the selling stockholders may be deemed to be underwriters within the meaning of Section 2(11) of the Securities Act of 1933 (the Securities Act ) in connection with sales of the shares. Accordingly, any such commission, discount or concession received by them and any profit on the resale of the shares purchased by them may be deemed to be underwriting discounts or commissions under the Securities Act. Because selling stockholders may be deemed to be underwriters within the meaning of Section 2(11) of the Securities Act, the selling stockholders will be subject to the prospectus delivery requirements of the Securities Act. In addition, any securities covered by this Prospectus which qualify for sale under Rule 144 promulgated under the Securities Act may be sold under Rule 144 rather than under this Prospectus. The selling stockholders 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 securities. There is no underwriter or coordinating broker acting in connection with the proposed sale of shares by the selling stockholders.

The shares will be sold only through registered or licensed brokers or dealers if required under applicable state securities laws. In addition, in certain states the shares may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

Under applicable rules and regulations under the Securities Exchange Act of 1934 (the Exchange Act ), any person engaged in the distribution of the shares may not simultaneously engage in market making activities with respect to our common stock for a period of two business days prior to the commencement of such distribution. In addition, each selling stockholder will be subject to applicable provisions of the Exchange Act and the associated rules and regulations under the Exchange Act, including Regulation M, which provisions may limit the timing of purchases and sales of shares of our common stock by the selling stockholders. We will make copies of this Prospectus available to the selling stockholders and have informed them of the need to deliver copies of this Prospectus to purchasers at or prior to the time of any sale of the shares.

We will file a supplement to this Prospectus, if required, to comply with Rule 424(b) under the Securities Act upon being notified by a selling stockholder that any material arrangements have been entered into with a broker-dealer for the sale of shares

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through a block trade, special offering, exchange distribution or secondary distribution or a purchase by a broker or dealer. Such supplement will disclose:

- the name of each such selling stockholder and of the participating broker-dealer(s),
- the number of shares involved,
- the price at which such shares were sold,
- the commissions paid or discounts or concessions allowed to such broker-dealer(s), where applicable,
- that such broker-dealer(s) did not conduct any investigation to verify the information set out or incorporated by reference in this prospectus, and
- other facts material to the transaction.

In addition, upon being notified by a selling stockholder that a donee or pledgee intends to sell more than 500 shares, we will file a supplement to this Prospectus.

We will bear all costs, expenses and fees in connection with the registration of the shares. We agreed to indemnify and hold the selling stockholders harmless against certain liabilities under the Securities Act that could arise in connection with the sale by the selling stockholders of the shares. The selling stockholders will bear all commissions and discounts, if any, attributable to the sales of the shares. The selling stockholders may agree to indemnify any broker-dealer or agent that participates in transactions involving sales of the shares against certain liabilities, including liabilities arising under the Securities Act.

## EXPERTS

The consolidated financial statements as of December 31, 2003 and 2002 and for each of the three years in the period ended December 31, 2003 incorporated in this Prospectus by reference from our Annual Report on Form 10-K for the year ended December 31, 2003 have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report (which report expresses an unqualified opinion and includes an explanatory paragraph relating to our receipt of a waiver of the borrowing base limit on our existing line of credit and a convertible note agreement in the first quarter of 2004 and our change in method of accounting for goodwill and other intangible assets in connection with the adoption of Statement of Financial Accounting Standards No. 142, *Goodwill and Other Intangible Assets,* in 2002), which is incorporated herein by reference, and has been so incorporated, in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

## LEGAL OPINIONS

The validity of the common stock offered by this Prospectus has been passed upon for us by Kutak Rock LLP, Omaha, Nebraska.

## WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and special reports, proxy statements and other information with the Securities and Exchange Commission (the SEC ). You may read and copy the materials we file at the SEC s Public Reference Room at 450 Fifth Street, N.W., Washington, D.C. 20549, as well as at the SEC s regional office at Citicorp Center, 500 West Madison Street, Room 1400, Chicago, Illinois 60661-2511. Please call the Commission at 1-800-SEC-0330 for further information on the operation of the Public Reference Rooms. Our SEC filings are also available to the public from the SEC s World Wide Web site on the Internet at http://www.sec.gov. This site contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC.

We maintain a site on the World Wide Web at www.transgenomic.com. The information contained in our website is not part of this Prospectus and you should not rely on it in deciding whether to invest in our common stock.

We have filed numerous Registration Statements on Form S-3 (Registration Nos. 333-108319, Registration Nos. 333-111442, Registration Nos. 333-114661 and Registration Nos. 333- ), of which this Prospectus is a part, covering the securities offered hereby. As allowed by SEC rules, this Prospectus does not contain all the information set forth in these Registration Statements and

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the exhibits, financial statements and schedules thereto. We refer you to these Registration Statements, the exhibits, financial statements and schedules thereto for further information. This Prospectus is qualified in its entirety by such other information.

## INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to incorporate by reference information into this Prospectus, which means that we can disclose important information to you by referring you to another document filed separately by us with the SEC under the Securities Exchange Act of 1934 (the Exchange Act ). The information incorporated by reference is deemed to be part of this Prospectus, except for any information superseded by information in this Prospectus. We have filed our annual report on Form 10-K for the year ended December 31, 2003, our quarterly reports on Form 10-Q for the quarters ended March 31 and June 30, 2004, our definitive proxy statement relating to our 2004 annual shareholders meeting, and current reports on Form 8-K dated January 16, January 21, March 1, March 22, March 29, March 31, April 28, May 12, 2004, August 13, August 25 and September 7, 2004 and these documents are incorporated herein by reference.

Any documents we file pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this Prospectus and prior to the termination of the offering of the securities to which this Prospectus relates will automatically be deemed to be incorporated by reference into this Prospectus and to be part hereof from the date of filing those documents. Any statement contained in this Prospectus or in a document incorporated by reference shall be deemed to be modified or superseded for all purposes to the extent that a statement contained in this Prospectus or in any other document which is also incorporated by reference modifies or supersedes that statement.

You may obtain copies of all documents which are incorporated in this Prospectus by reference (other than the exhibits to those documents which are not specifically incorporated by reference herein) without charge by writing or calling Mr. Mitchell L. Murphy, at Transgenomic, Inc., 12325 Emmet Street, Omaha, NE, 68164, telephone number (402) 452-5400.

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**11,600,306 Shares**

# TRANSGENOMIC, INC.

**COMMON STOCK**

**PROSPECTUS**

, 2004

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**PART II**

**INFORMATION NOT REQUIRED IN PROSPECTUS**

**Item 14. Other Expenses of Issuance and Distribution.**

The following table shows the estimated expenses in connection with the issuance and distribution of the common stock being registered:

| | |
|---|---|
| Securities and Exchange Commission filing fees | $ 610 |
| Legal fees and expenses | 10,000 |
| Accounting fees and expenses | 5,000 |
| Printing and engraving | 1,000 |
| Miscellaneous expenses | 1,000 |
| Total | $ 17,610 |

**Item 15. Indemnification of Directors and Officers.** Section 145 of the Delaware General Corporation Law authorizes a court to award, or a corporation to grant, indemnity to directors and officers in terms sufficiently broad to permit such indemnification under certain circumstances for liabilities (including reimbursement of expenses incurred) arising under the Securities Act of 1933.

As permitted by the Delaware General Corporation Law, the Registrant s First Restated Certificate of Incorporation eliminates the personal liability of its directors for monetary damages for breach of fiduciary duty as a director, except for liability (1) for any breach of the director s duty of loyalty to the Registrant or its stockholders, (2) for acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law, (3) under Section 174 of the Delaware General Corporation Law (regarding unlawful dividends and stock purchases) or (4) for any transaction from which the director derived an improper personal benefit. If the Delaware General Corporation Law is amended to authorize further elimination or limiting of directors personal liability, then the First Amended and Restated Certificate provides that the personal liability of directors will be eliminated or limited to the fullest extent provided under the Delaware General Corporation Law.

As permitted by the Delaware General Corporation Law, the Registrant s First Amended and Restated Certificate of Incorporation and its Bylaws provide that (1) the Registrant is required to indemnify its directors and officers to the fullest extent permitted by the Delaware General Corporation Law, subject to certain very limited exceptions, (2) the Registrant may indemnify its other employees and agents as set forth in the Delaware General Corporation Law, (3) the Registrant is required to advance expenses, as incurred, to its directors and executive officers in connection with a legal proceeding to the fullest extent permitted by the Delaware General Corporation Law, subject to certain conditions and (4) the rights conferred by the First Amended and Restated Certificate of Incorporation and Bylaws are not exclusive.

The Delaware General Corporation Law authorizes a corporation to indemnify its directors and officers provided that the corporation shall not eliminate or limit the liability of a director as follows:

(a) for any action brought by or in the right of a corporation where the director or officer is adjudged to be liable to the corporation, except where a court determines the director or officer is entitled to indemnity;

(b) for acts or omissions not in good faith or which involve conduct that the director or officer believes is not in the best interests of the corporation;

(c) for knowing violations of the law;

(d) for any transaction from which the directors derived an improper personal benefit; and

(e) for payment of dividends or approval of stock repurchases or redemptions leading to liability under Section 174 of the Delaware General Corporation Law.

The Delaware General Corporation Law requires a corporation to indemnify a director or officer to the extent that the director or officer has been successful, on the merits or otherwise, in defense of any action, suit or proceeding for which indemnification is lawful.

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The Registrant maintains a director and officer insurance policy which insures the directors and officers of the Registrant against damages, judgments, settlements and costs incurred by reason of certain wrongful acts committed by such persons in their capacities as directors and officers.

**Item 16. Exhibits.**

| | |
|---|---|
| 4 | Form of Certificate of the Registrant s Common Stock (1) |
| 5 | Opinion of Kutak Rock LLP |
| 10.1 | Amendment to Securities Purchase Agreement and Related Documents by and between the Registrant and Laurus Master Fund, Ltd. dated August 31, 2004 |
| 10.2 | Amendment to Security Agreement and Related Documents by and between the Registrant and Laurus Master Fund, Ltd. dated August 31, 2004 |
| 10.3 | Common Stock Purchase Warrant by and between the Registrant and Laurus Master Fund, Ltd., dated August 31, 2004 |
| 23.1 | Consent of Deloitte & Touche LLP |
| 23.2 | Consent of Kutak Rock LLP (included in Exhibit 5) |
| 24 | Powers of Attorney (included on page II-4 of this Registration Statement) |

(1) This Exhibit is incorporated by reference to the Form S-1 Registration Statement of the Registrant (Registration No. 333-32174), which was filed on March 10, 2000.

**Item 17. Undertakings.**

We undertake:

(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 of 1933;

(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. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of a prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the Calculation of Registration Fee in this registration statement;

(iii) to include any material information with respect to the plan of distribution not previously disclosed in this registration statement or any material change to such information in this registration statement *provided, however*, that the undertakings set forth in paragraphs (i) and (ii) above do not apply if the information required to be included in a post-effective amendment by those paragraphs 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 Securities Exchange Act of 1934 that are incorporated by reference in this registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, 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.

(4) That, for purposes of determining any liability under the Securities Act of 1933, each filing of the Registrant s annual report pursuant to section 13(a) or section 15(d) of the Securities Exchange Act of 1934 that is incorporated by reference in this 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.

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(5) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted against the Registrant by such director, officer or controlling person in connection with the securities being registered, the Registrant 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 Act and will be governed by the final adjudication of such issue.

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**SIGNATURES**

Pursuant to the requirements of the Securities Act of 1933, the Registrant has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in Omaha, Nebraska, on the 13th day of September, 2004.

TRANSGENOMIC, INC.

By: /s/ COLLIN J. D SILVA
Collin J. D Silva,

President and Chief Executive Officer

Each person whose signature appears below hereby authorizes Collin J. D Silva as attorney-in-fact, to sign on his or her behalf, individually and in each capacity stated below, any amendment, including post-effective amendments to this Registration Statement, and to file the same, with all exhibits thereto, and all documents in connection therewith, with the Securities and Exchange Commission.

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

Date: September 13, 2004 By: /s/ COLLIN J. D SILVA
Collin J. D Silva,

President, Chief Executive Officer and

Director (Principal Executive Officer)

Date: September 13, 2004 By: /s/ MICHAEL A. SUMMERS
Michael A. Summers

Chief Financial Officer

(Principal Financial Officer)

Date: September 13, 2004 By: /s/ GREGORY J. DUMAN
Gregory J. Duman,

Director

Date: September 13, 2004 By: /s/ JEFFREY SKLAR
Jeffrey Sklar,

Director

Date: September 13, 2004 By: /s/ ROLAND J. SANTONI

Roland J. Santoni,

Director

Date: September 13, 2004 By: /s/ PARAG SAXENA
Parag Saxena,

Director

Date: September 13, 2004 By: /s/ GREGORY SLOMA
Gregory Sloma,

Director

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**EXHIBIT INDEX**

| Exhibit No. | Description |
|---|---|
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| 10.1 | Amendment to Securities Purchase Agreement and Related Documents by and between the Registrant and Laurus Master Fund, Ltd. dated August 31, 2004 |
| 10.2 | Amendment to Security Agreement and Related Documents by and between the Registrant and Laurus Master Fund, Ltd. dated August 31, 2004 |
| 10.3 | Common Stock Purchase Warrant by and between the Registrant and Laurus Master Fund, Ltd., dated August 31, 2004 |
| 23.1 | Consent of Deloitte & Touche LLP |
| 23.2 | Consent of Kutak Rock LLP (included in Exhibit 5) |
| 24 | Powers of Attorney (included on page II-4 of this Registration Statement) |

(1) This Exhibit is incorporated by reference to the Registration Statement of the Registrant (Registration No. 333-32174), which was filed on March 10, 2000.