TRANSGENOMIC INC
Form 424B3
September 28, 2006
Table of Contents

Filed Pursuant to Rule 424(b)(3)

File No. 333-135829

PROSPECTUS

24,090,795 Shares

TRANSGENOMIC, INC.

COMMON STOCK

This prospectus covers 24,090,795 shares (Shares) of our common stock that the selling stockholders listed under Selling Stockholders may sell from time to time. These Shares consist of:

- up to 16,028,218 Shares outstanding held by the selling shareholders; and
- up to 8,062,577 Shares that may be issued upon exercise of outstanding warrants.

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 July 12, 2006 was $0.45 per share. The selling stockholders are offering the Shares as described under Plan of Distribution. We will not receive any of the proceeds from the sale of these shares by the selling stockholders, but will be entitled to the proceeds from the exercise of outstanding warrants.

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

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 7 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.

September 26, 2006

Table of Contents

TABLE OF CONTENTS

ABOUT THIS PROSPECTUS	1
TRANSGENOMIC, INC.	1
GENERAL INFORMATION	6
RISK FACTORS	7
USE OF PROCEEDS	11
SELLING STOCKHOLDERS	12
PLAN OF DISTRIBUTION	14
EXPERTS	15
LEGAL OPINIONS	15
WHERE YOU CAN FIND MORE INFORMATION	15
INCORPORATION OF CERTAIN INFORMATION BY REFERENCE	15

Forward-Looking Statements

This prospectus contains 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 similar expressions. Be 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 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.

Table of Contents

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 develop, assemble, manufacture and market versatile products and provide analytical services to the medical research, clinical and pharmaceutical markets for use in genetic variation analysis. Products and services are sold through a direct sales force in the United States and throughout much of Western Europe. For the rest of the world, products and services are sold through more than 25 dealers and distributors located in those local markets. Net sales are categorized as bioinstruments, bioconsumables and discovery services.

Bioinstruments. The flagship product is the WAVE® system which has broad applicability to genetic variation detection in both molecular genetic research and molecular diagnostics. There was a world-wide installed base of over 1,300 WAVE® systems as of June 30, 2006. We utilize our sales and distribution network to sell a number of equipment platforms manufactured by third parties. Service contracts to maintain installed systems are sold and supported by technical support personnel.

Bioconsumables. The installed WAVE® base generates a demand for consumables that are required for the system s continued operation. We develop, manufacture and sell these products. In addition, we manufacture and sell consumable products that can be used on equipment manufactured by third parties. These products include SURVEYOR Nuclease and a range of HPLC separation columns.

Discovery Services. We provide various genetic laboratory services through a contract research lab in Gaithersburg, Maryland and a second laboratory in Omaha, Nebraska that operates in a Good Laboratory Practices (GLP) compliant environment and is certified under the Clinical Laboratory Improvement Amendment. The services provided primarily include (1) genomic biomarker analysis services to pharmaceutical and biopharmaceutical companies to support preclinical and clinical development of targeted therapeutics; and (2) molecular-based testing for hematology, oncology and certain inherited diseases for physicians and third-party laboratories.

Until recently, we also operated a segment that developed, manufactured and marketed chemical building blocks for nucleic acid synthesis to biotechnology, pharmaceutical and oligonucleotide synthesis companies and research institutions throughout the world (the Nucleic Acids Operating Segment). In the fourth quarter of 2005, we implemented a plan to exit the Nucleic Acids Operating Segment and expect to complete this plan during 2006.

Table of Contents

Business Strategy

Since inception, our business strategy has been to provide products and services to biomedical researchers, medical institutions, diagnostic and pharmaceutical companies that are tied to advancements in the field of genomics. Advances in genomics have fueled efforts to understand individual differences in disease susceptibility, disease progression, and response to therapy. Accordingly, a principal component of our strategy has been to establish our WAVE® system as an industry standard in the biomedical research market and to develop additional markets for the WAVE® system such as clinical research and diagnostics. Through an expanding base of installed systems, we expect to increase the sales of consumable products used with the WAVE® system and create opportunities to market additional products to this customer base. In addition, through our Discovery Services offerings, we have gained exposure to the translational and clinical research markets, laying the foundation for increasing our participation in the full value chain associated with activities ranging from basic biomedical research to development of diagnostic and therapeutic products.

Sales and Marketing

We have sold 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. We have 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. No customer accounts for more than 10% of consolidated net sales.

Research and Development

We maintain an active program of research and development primarily directed toward 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 development of assays on the WAVE® system.

We will need to continue to invest in research and development activities in order to remain competitive and to take advantage of new business opportunities as they arise. For the years ended December 31, 2005, 2004 and 2003, our research and development expenses were $2.20 million, $4.50 million and $6.83 million, respectively. During the six months ended June 30, 2006, we incurred research and development expense of $1.14 million. We expect our total research and development expense during 2006 to be approximately equal to the 2005 levels.

In addition to the amounts reflected above, our discontinued Nucleic Acids Operating Segment incurred no research and development expenses during six months ended June 30, 2006 or the year ended December 31, 2005, but incurred $2.18 million and $2.47 million of research and development expenses during the years ended December 31, 2004 and 2003, respectively.

Table of Contents

Manufacturing

We manufacture bioconsumable products including our separation columns, liquid reagents, and enzymes. 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. The nature of our instruments and bioconsumables business does not generally lend itself to tracking and reporting sales backlog.

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 presently own rights to more than 40 issued patents and 20 pending applications in both the U.S. and abroad. Our WAVE® System and related consumables, are protected by patents and in-licensed technologies that expire in various periods beginning in 2013 through 2022. We will continue to file patent applications and seek new licenses as warranted to protect and develop new technologies of interest to our customer base in the coming years.

Competition

The markets in which we operate are highly competitive and characterized by rapidly changing technological advances. A number of our competitors possess substantial resources and are able to develop and offer a much greater breadth of products and/or services, coupled with significant marketing and distribution capabilities. We compete principally on the basis of providing uniquely enabling technical advantages in specific but significant market segments.

Competition for our WAVE® systems arises primarily from DNA sequencing and genotyping technologies. Competitors in these areas include Applied Biosystems, Beckman Coulter, Amersham (now part of GE Healthcare), Affymetrix, Agilent Technologies, Nanogen, Illumina, Sequenom, Pyrosequencing (now part of Biotage AB), Varian, and others. Competition for some of our non-WAVE® consumable products comes from numerous well-diversified life sciences reagents providers, including, among others, Invitrogen, Qiagen, Roche, Stratagene, and Promega. Our discovery services product line faces competition from a number of companies offering contract DNA sequencing and other genomic analysis services, including Genaissance Pharmaceuticals, GeneLogic, Agencourt, SeqWright, Gentris, and Perlagen. In addition, several clinical diagnostics service providers, such as Labcorp, Quest, and Specialty Laboratories, also offer related laboratory services in support of clinical trials. Finally, additional competition arises from academic core laboratory facilities.

Recent Events

Our Chief Financial Officer Recently Resigned

On September 20, 2006, Michael A. Summers, our Chief Financial Officer submitted his resignation from that position effective immediately in order to pursue another professional opportunity. No interim replacement has been named for Mr. Summers. We have commenced a search to replace Mr. Summers who has committed to assist us on an interim basis.

Table of Contents

We have been notified that our stock does not meet all Nasdaq listing criteria

On August 10, 2006, our common stock began trading on the Nasdaq Capital Market (the Capital Market). Our stock had previously traded on the Nasdaq Global Market (formerly known as the Nasdaq National Market). On August 15, 2006, we were notified by Nasdaq that our stock met all initial inclusion criteria for the Capital Market under Marketplace Rule 4310(c), except for the $1.00 per share minimum bid price. Nasdaq has provided us with a period of 180 calendar days, or until February 12, 2007, to attain compliance with this inclusion criteria. In order to attain compliance with the minimum bid price requirement, the bid price of our common stock must close at or above $1.00 per share for a minimum of 10 consecutive trading days before February 12, 2007.

We have hired a new Chief Executive Officer

Craig Tuttle was appointed as our President and Chief Executive Officer on July 12, 2006. Mr. Tuttle, age 54, has over 25 years of general management, sales and marketing and research and development experience in medical diagnostic and biotechnology companies. During 2004 and 2005, Mr. Tuttle was the President and COO of Duke Scientific, a Northern California specialty chemistry manufacturer. Mr. Tuttle led the sale of Duke Scientific to Fisher Healthcare in 2005. From 1997 to 2003, Mr. Tuttle was with Apogent Technologies, Inc. where he served in various roles, including President of Applied Biotech, Inc., the manufacturer of the market leading home pregnancy test, and General Manager at Seradyn, Inc., a specialty chemical and diagnostic test manufacturer. Mr. Tuttle earned a B.S in Biochemistry from UCLA, an M.S. in Biochemistry from the University of Colorado and an M.B.A from St. Mary s College. We entered into an employment agreement with Mr. Tuttle which has a term of two years, but will be automatically extended for additional one-year periods unless either the Company or Mr. Tuttle elects not to further extend it. Under the terms of the employment agreement, Mr. Tuttle will be paid a base salary of $250,000 per year during the initial two-year term. His salary may increase in subsequent terms as determined by the compensation committee of our Board of Directors. Mr. Tuttle is also eligible to receive an annual bonus of up to 20% of his base salary and will receive allowances for a leased automobile, housing in the Omaha, Nebraska area and commuting costs for a period of one year. Under the employment agreement, Mr. Tuttle was granted options to purchase 200,000 shares of our common stock shortly after joining the Company and will be granted options to purchase 200,000 shares on January 12, 2007, and options to purchase 200,000 shares on July 12, 2007, subject to the approval of the compensation committee. Each such grant of options will vest equally on the next three anniversary dates of the respective grant. The employment agreement contains standard confidentiality and noncompetition provisions and provides for a severance payment to Mr. Tuttle equal to one year s salary if he is discharged for reasons other than as defined in the employment agreement as just cause .

We amended our 1997 Stock Option Plan

On July 12, 2006, our stockholders approved the adoption of our new 2006 Equity Incentive Plan (the 2006 Plan) which amended and replaced our Fourth Amended and Restated 1997 Stock Option Plan (the 1997 Plan). The 2006 Plan expands the types of equity compensation awards available to our compensation committee to include stock appreciation rights, restricted stock, restricted stock units, performance shares and performance units, as well as the qualified and non-qualified stock options that were previously available under the 1997 Plan. Under the 2006 Plan, the compensation committee will have more flexibility in designing compensation packages to help us attract and retain qualified officers, employees and directors. The 2006 Plan also increased the total number of shares of our common stock that may be issued as equity compensation from 7,000,000 to 10,000,000 shares. Prior to the amendment of the 1997 Plan, approximately 6.2 million options had been issued. The adoption of the 2006 Plan did not change the basis upon which the Compensation Committee awards equity compensation grants.

Table of Contents

We decided to exit our former Nucleic Acids operating segment.

On December 22, 2005, the Company s Directors voted to either sell or close and liquidate the Nucleic Acids operating segment, which consists primarily of a manufacturing facility in Glasgow, Scotland. This decision was made after an evaluation of, among other things, short and long-term sales projections for products sold by this operating segment, including estimates of 2006 sales to the operating segment s largest customer. We have commenced closure and liquidation of the facility in Glasgow, Scotland. At June 30, 2006 and December 31, 2005, we had accrued expenses of $0.21 million and $0.72 million related to statutory payment to affected employees and other costs specifically attributable to closure of the facility. We expect to incur additional period costs attributable to closure of the facility that will be recorded in discontinued operations during 2006.

We completed a private placement of our common stock in the fourth quarter of 2005.

On October 31, 2005, we issued securities to institutional investors in a private placement (the 2005 Private Placement). The securities issued consisted of: (i) 14,925,743 shares of the Company s common stock, plus (ii) five-year, non-callable warrants to purchase another 5,970,297 shares of common stock with an exercise price of $1.20 per share. The aggregate purchase price for the securities sold was $1.01 per share of common stock initially being sold or $15.08 million. In conjunction with this transaction, we issued a warrant to Oppenheimer & Co., Inc. to purchase 932,859 shares at $1.20 per share as part of their placement fee.

The net proceeds from the 2005 Private Placement were $13.90 million after transaction costs of $1.18 million. These proceeds were partially used to repay all outstanding principal and accrued interest on our loans to Laurus Master Funds, Ltd. (Laurus) including fees paid to Laurus to facilitate the 2005 Private Placement and prepayment penalties to Laurus in the sum of $0.82 million. As a result, the Laurus loans have been cancelled and are no longer available to us. The remaining proceeds of $5.35 million will be used for future working capital needs.

Liquidity and Capital Resources

We have experienced recurring net losses and had an accumulated deficit at June 30, 2006 of $122.80 million. To respond to changes in the overall business climate for our products, our liquidity position and capital structure, we have instituted significant change that began in the fourth quarter of 2004 with the sale of our specialty oligonucleotide manufacturing facility, a wide-reaching restructuring plan and the exit of our former Nucleic Acids Operating Segment.

Our working capital positions at June 30, 2006 and December 31, 2005 were as follows (in thousands):

	June 30, 2006	December 31, 2005	Change
Current assets (including cash and cash equivalents of $7,362 and $6,736, respectively)	$ 17,276	$ 18,118	$ (842)
Current liabilities	6,194	7,434	(1,240)
Working capital	$ 11,082	$ 10,684	$ 398

While we believe that existing sources of liquidity are sufficient to meet expected cash needs through 2006, we have experienced recurring net losses and have historically relied upon cash flows from investing and financing activities to offset significant cash outflows from operating activities. To the extent necessary, we believe that we can manage costs and expenses at reduced levels to conserve working capital. The need for any such cost and expense reductions would likely delay implementation of our business plan. Ultimately, we must achieve sufficient revenues in order to generate positive net earnings and cash flows from operations.

Table of Contents

Shares to be sold by Selling Stockholders

This Prospectus covers 24,090,795 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 (i) 13,978,218 shares issued in conjunction with the 2005 Private Placement; (ii) 6,903,156 shares issuable upon the exercise of warrants that were also issued in conjunction with the 2005 Private Placement; (iii) 2,050,000 shares issued in conjunction with a private placement that closed in the fourth quarter of 2003; and (iv) 1,159,421 shares issuable upon the exercise of outstanding warrants that were issued primarily in conjunction with our past indebtedness to Laurus. The exercise price of these warrants range from $1.20 to $3.18 per share. The selling stockholders are offering the common stock as described under Plan of Distribution.

At September 26, 2006, we had 49,189,672 shares issued and outstanding. The number of shares outstanding does not include (i) the 8,062,577 shares issuable upon the exercise of outstanding warrants and (ii) up to 9,246,231 shares of our common stock that we could issue under our 2006 Equity Incentive Plan, of which 5,724,264 options are outstanding at September 26, 2006. The number of shares outstanding also does not include options that we have committed to grant to our President and Chief Executive Officer on January 12, 2007 to purchase 200,000 shares, and on July 12, 2007 to purchase 200,000 shares, subject to approval of the compensation committee.

Use of Proceeds

This Prospectus relates to shares of our common stock that may be offered and sold from time to time by the selling stockholders. This Prospectus also relates to common stock issuable upon the exercise of warrants held by certain selling stockholders. We will not receive any proceeds from the sale of shares of common stock in this offering. We will, however, receive proceeds from the exercise of the warrants, if exercised. The proceeds from the exercise of warrants, if any, will be used for working capital purposes.

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, San Jose, California and Cramlington, England. We maintain research and development offices in Gaithersburg, Maryland and Omaha, Nebraska.

We make reports filed by us with the SEC available free of charge on our website as soon as reasonably practicable after these reports are filed. The address of our website is www.transgenomic.com. Information on our website, including any SEC report, is not part of this prospectus and you should not rely on it in deciding whether to invest in our common stock.

Table of Contents

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.

Risks Relating to Our Business

We may not have adequate financial resources to execute our business plan.

At June 30, 2006, we had cash and cash equivalents of $7.4 million. While we believe that existing sources of liquidity are sufficient to meet expected cash needs through 2006, we have experienced recurring net losses and have an accumulated deficit totaling $122.8 million at June 30, 2006 and have historically relied upon cash flows from investing and financing activities to offset significant cash outflows from operating activities. To the extent necessary, we believe that we can manage costs and expenses at reduced levels to conserve working capital. The need for any such cost and expense reductions would likely delay implementation of our business plan. Ultimately, we must achieve sufficient revenues in order to generate positive net earnings and cash flows from operations. However, we cannot assure you that we will be able to increase our revenues.

We have a history of operating losses and may incur losses in the future.

We have experienced losses from continuing operations since inception of our operations. Our loss from continuing operations for the six months ended June 30, 2006 was $0.70 million. Losses from continuing operations for the years ended December 31, 2005, 2004 and 2003 were $4.98 million, $13.75 million, and $9.56 million, respectively. 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 may incur operating losses in the future.

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. Demand for our WAVE® system is affected by the needs and budgetary resources of research institutions, universities, hospitals and others who use the WAVE® system for genetic-variation research. It has also been negatively affected by competition from other technologies, including genetic sequencing. 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 or decline further, we may need to take steps to further reduce operating expenses or raise additional 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.

Table of Contents

Sales of Discovery Services depend upon a small number of customers and may fluctuate greatly.

Sales of Discovery Services tend to be made pursuant to large contracts and other arrangements with a small number of customers. As a result, revenues related to Discovery Services may be subject to substantial fluctuation, as the gain or loss of a single customer may have a significant impact on such revenues.

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

During the past several years, international sales have represented more than half of our total 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 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 applications 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 the 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.

Table of Contents

Our markets are very competitive.

Many of our competitors have greater resources than we do and/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 less expensively than us. The cost of sequencing has fallen in recent years and this has reduced the demand for our WAVE technology. As a result of these competitive factors, demand for and pricing of our products and services have been negatively affected.

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 such measures 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 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.

Table of Contents

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, local and international 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.

Risks Relating To This Offering and Ownership of Our Common Stock

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

The trading price for our common 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 not decrease 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.

On August 10, 2006, our common stock began trading on the Nasdaq Capital Market (the Capital Market). Our stock had previously traded on the Nasdaq Global Market (formerly known as the Nasdaq National Market). On August 15, 2006, we were notified by Nasdaq that our stock met all initial inclusion criteria for the Capital Market under Marketplace Rule 4310(c), except for the $1.00 per share minimum bid price. Nasdaq has provided us with a period of 180 calendar days, or until February 12, 2007, to attain compliance with this inclusion criteria. In order to attain compliance with the minimum bid price requirement, the bid price of our common stock must close at or above $1.00 per share for a minimum of 10 consecutive trading days before February 12, 2007. If we are not able to comply with this listing requirement, our common stock will 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 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 remains 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.

Table of Contents

We may issue a substantial amount of our common stock to holders of options and warrants and this could reduce the market price for our stock.

At September 26, 2006, we had obligations to issue 13,786,841 shares of common stock including outstanding stock options representing 5,724,264 shares and warrants representing 8,062,577 shares. We have also committed to grant stock options to our President and Chief Executive Officer on January 12, 2007 to purchase 200,000 shares and on July 12, 2007 to purchase 200,000 shares, subject to approval of the compensation committee. On July 12, 2006, our stockholders approved the adoption of our 2006 Equity Incentive Plan which amended our previous Fourth Amended and Restated 1997 Stock Option Plan to increase the total number of common shares that we may issue as equity compensation to our officers, directors and employees from 7,000,000 to 10,000,000. The issuance of additional shares of common stock may be dilutive to our current stockholders and could negatively impact the market price of our common stock.

Our common stock is thinly traded and a large percentage of our shares are held by a small group of unrelated, institutional owners.

At September 26, 2006, we had 49,189,672 shares of common stock outstanding. Fewer than ten unrelated, institutional holders own a majority of these shares. The sale of significant shares into the public market has potential to cause significant downward pressure on the price of our common stock. This is particularly the case if the shares being placed into the market exceed the market s ability to absorb the stock. Such an event could place further downward pressure on the price of our common stock. This presents an opportunity for short sellers to contribute to the further decline of our stock price. If there are significant short sales of our stock, the price decline that would result from this activity will cause the share price to decline more so, which, in turn, may cause long holders of the stock to sell their shares thereby contributing to sales of stock in the market.

The price you pay for shares offered by the selling stockholders may be higher than the prices paid by other people acquiring such shares.

Selling stockholders may sell shares under this Prospectus from time to time either at prices then prevailing in the market or at other prices they negotiate with buyers. Accordingly, the price you pay for shares of our common stock you purchase from a selling stockholder may be higher than the prices paid by other people acquiring such shares.

USE OF PROCEEDS

We will not receive any proceeds from the sale of the Shares offered by this Prospectus. However, we will receive approximately $10.49 million upon the exercise of warrants for 8,062,577 Shares that may be offered hereby. The net proceeds we receive from any exercise of these warrants, if any, will be used by us primarily for working capital purposes.

Table of Contents

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.

	Shares Beneficially Owned Prior to the Offering			Shares Beneficially Owned After the Offering	
Name	Number	Percentage[1]	Shares to be Sold	Number	Percentage
Laurus Master Fund, Ltd.[2]	1,075,000	2.1%	1,075,000	0	*
TN Capital Equities, Ltd.[3]	61,484	*	61,484	0	*
Kopp Emerging Growth Fund [4]	11,154,055	22.7%	2,050,000	9,104,055	18.5%
Oppenheimer & Co. Inc.[5]	932,859	1.9%	932,859	0	*
LBI Group, Inc.[6]	4,967,765	10.1%	5,544,554	0	*
Knott Partners, L.P.[7], [8]	1,990,800	4.0%	1,990,800	0	*
Matterhorn Offshore Fund Ltd.[7], [9]	2,181,754	4.4%	2,181,754	0	*
Common Fund Hedged Equity Company[7],[10]	249,200	*	249,200	0	*
Shoshone Partners, L.P.[7], [11]	989,800	2.0%	989,800	0	*
Anno, L.P.[7], [12]	62,300	*	62,300	0	*
Good Steward Trading Company[7], [13]	70,700	*	70,700	0	*
SF Capital Partners Ltd.[14]	2,722,772	5.5%	3,811,881	0	*
Perceptive Life Sciences Master Fund, Ltd.[15]	2,072,277	4.1%	2,072,277	0	*
Iroquois Master Fund Ltd.[16]	1,732,674	3.5%	1,732,674	0	*
SDS Capital Group SPC, Ltd.[17]	693,070	1.4%	693,070	0	*
RAQ, LLC[18]	99,010	*	99,010	0	*
Omicron Master Trust[19]	315,172	*	315,172	0	*
Rockmore Investment Master Trust[20]	31,363	*	31,363	0	*
Endeavor Asset Management, L.P.[21]	103,960	*	103,960	0	*

* less than 1%

(1) Applicable percentage ownership is based on 49,189,672 shares of common stock outstanding as of July 12, 2006, together with securities presently exercisable or convertible into shares of common stock and securities that the holder, as of July 12, 2006, had the right to exercise or convert into shares of common stock within sixty (60) days. Securities that are exercisable or convertible as described above are deemed to be outstanding and beneficially owned by the person holding such securities for the purpose of computing the percentage of ownership of such person, but are not treated as outstanding for the purpose of computing the percentage ownership of any other person.

(2) Shares to be sold consist of 1,075,000 shares issuable upon the exercise of warrants. The warrants are subject to a conversion cap which precludes the holder thereof from exercising such warrants to the extent that such owner would beneficially own in excess of 4.99% of the Company s common stock. However, Laurus Master Fund Ltd. may elect to waive the 4.99% limitation with 75 days notice.

Table of Contents

(3) 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.

(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.

(5) All shares to be sold and beneficially owned represent shares issuable upon the exercise of warrants. Oppenheimer & Co. Inc. (Oppenheimer) served as placement agent for the private placement of securities to various institutional investors which closed on October 31, 2005. Warrants were issued to Oppenheimer as partial compensation for their services as placement agent.

(6) Lehman Brothers Holdings Inc., Lehman Brothers Inc. and LB I Group Inc. have voting and dispositive power over these shares. Shares beneficially owned consist of 4,967,765 shares of common stock held in the name of LB I Group Inc. Shares to be sold consist of 3,960,396 shares of common stock acquired in a private placement in October 2005 and warrants to purchase an additional 1,584,158 shares at $1.20 per share. These warrants are subject to a conversion cap which precludes the holder thereof from exercising such warrants to the extent that such owner would beneficially own in excess of 4.9% and 9.9% of the Company s common stock.

(7) David M. Knott and Dorset Management Group have sole or shared voting and dispositive power over these shares and warrants.

(8) Shares owned and to be sold consist of 1,422,000 shares of common stock and warrants to purchase an additional 586,800 shares at $1.20 per share. The warrants are subject to a conversion cap which precludes the holder thereof from exercising such warrants to the extent that such owner would beneficially own in excess of 9.9% of the Company s common stock.

(9) Shares owned and to be sold consist of 1,558,396 shares of common stock and warrants to purchase an additional 623,358 shares at $1.20 per share. The warrants are subject to a conversion cap which precludes the holder thereof from exercising such warrants to the extent that such owner would beneficially own in excess of 9.9% of the Company s common stock.

(10) Shares owned and to be sold consist of 178,000 shares of common stock and warrants to purchase an additional 71,200 shares at $1.20 per share. The warrants are subject to a conversion cap which precludes the holder thereof from exercising such warrants to the extent that such owner would beneficially own in excess of 9.9% of the Company s common stock.

(11) Shares owned and to be sold consist of 707,000 shares of common stock and warrants to purchase an additional 282,800 shares at $1.20 per share. The warrants are subject to a conversion cap which precludes the holder thereof from exercising such warrants to the extent that such owner would beneficially own in excess of 9.9% of the Company s common stock.

(12) Shares owned and to be sold consist of 44,500 shares of common stock and warrants to purchase an additional 17,800 shares at $1.20 per share. The warrants are subject to a conversion cap which precludes the holder thereof from exercising such warrants to the extent that such owner would beneficially own in excess of 9.9% of the Company s common stock.

(13) Shares owned and to be sold consist of 50,500 shares of common stock and warrants to purchase an additional 20,200 shares at $1.20 per share. The warrants are subject to a conversion cap which precludes the holder thereof from exercising such warrants to the extent that such owner would beneficially own in excess of 9.9% of the Company s common stock.

(14) Michael A. Roth and Brian J. Stark, as managing members of Stark Offshore Management, LLC, which is the investment manager of SF Capital Partners Ltd., have sole voting and dispositive power over these shares. Shares beneficially owned consist of 2,722,772 shares of common stock held in the name of SF Capital Partners Ltd. Shares to be sold also include warrants to purchase an additional 1,089,109 shares at $1.20 per share. These warrants are subject to a conversion cap which precludes the holder thereof from exercising such warrants to the extent that such owner would beneficially own in excess of 4.9% and 9.9% of the Company s common stock.

(15) Consists of 1,280,198 shares owned by Perceptive Life Sciences Master Fund, Ltd. and warrants to purchase an additional 792,079 shares at $1.20 per share. The warrants are subject to a conversion cap which precludes the holder thereof from exercising such warrants to the extent that such owner would beneficially own in excess of 9.9% of the Company s common stock.

(16) Shares owned and to be sold consist of 1,237,624 shares of common stock and warrants to purchase an additional 495,050 shares at $1.20 per share.

(17) Shares owned and to be sold consist of 495,050 shares of common stock and warrants to purchase an additional 198,020 shares at $1.20 per share.

(18) Shares consist of warrants to purchase 99,010 shares at $1.20 per share.

(19) Shares owned and to be sold consist of 247,525 shares of common stock and warrants to purchase an additional 67,647 shares at $1.20 per share.

(20) Shares consist of warrants to purchase 31,363 shares at $1.20 per share.

(21) Shares owned and to be sold consist of 74,257 shares of common stock and warrants to purchase an additional 29,703 shares at $1.20 per share.

Table of Contents

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.

PLAN OF DISTRIBUTION

The selling stockholders and any of their pledges, assignees, donees selling shares received from such selling stockholders as a gift, and successors-in-interest may, from time to time, sell any or all of their shares of our common stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These sales may be at fixed or negotiated prices. The selling stockholders may use any one or more of the following methods when selling shares:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades 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 the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

The selling stockholders may also sell shares under Rule 144 under the Securities Act of 1933, as amended, if available, rather than under this prospectus.

Broker-dealers engaged by the selling stockholders may arrange for other broker-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the selling stockholders (or, if any broker-dealer acts as agent for the purchaser of shares, from the purchaser) in amounts to be negotiated. The selling stockholders do not expect these commissions and discounts to exceed what is customary in the types of transactions involved.

The selling stockholders and any broker-dealers or agents that are involved in selling the shares 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 purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act.

We are required to pay all fees and expenses incident to the registration of the shares, including certain fees and disbursements of counsel to the selling stockholders. We have agreed to indemnify the selling stockholders against certain losses, claims, damages and liabilities, including liabilities under the Securities Act.

To the extent required, we will amend or supplement this prospectus to disclose material arrangements regarding the plan of distribution.

To comply with the securities laws of certain jurisdictions, registered or licensed brokers or dealers may need to offer or sell the shares offered by this prospectus. The applicable rules and regulations under the Securities Exchange Act of 1934, as amended, may limit any person engaged in a distribution of the shares of common stock covered by this prospectus in its ability to engage in market

Table of Contents

activities with respect to such shares. A selling stockholder, for example, will be subject to applicable provisions of the Exchange Act and the rules and regulations under it, which provisions may limit the timing of purchases and sales of any shares of common stock by that selling stockholder.

EXPERTS

The consolidated financial statements incorporated in this prospectus by reference from the Company s Annual Report on Form 10-K have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference, and have 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 SEC. You may read and copy the materials we file at the SEC s Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the Public Reference Room. Our SEC filings are also available to the public on the Internet from the SEC s Web site at www.sec.gov. This site contains reports, proxy statements and other information regarding issuers that file documents electronically with the SEC.

We have filed a registration statement, of which this prospectus is a part, covering the securities offered hereby. As allowed by SEC rules, this prospectus does not include all of the information contained in the registration statement and the exhibits, financial statements and schedules thereto. We refer you to the registration statement, and the exhibits, financial statements and schedules thereto, for further information. This prospectus is qualified in its entirety by such other information.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference the information we file with them, which means:

- incorporated documents are considered part of this Prospectus;
- we can disclose important information to you by referring you to those documents; and
- information that we file with the SEC will automatically update and supersede the information in this Prospectus and any information that was previously incorporated in this Prospectus.

We filed the following documents with the SEC under the Exchange Act and incorporate them by reference into this Prospectus:

- Our Annual Report on Form 10-K for the fiscal year ended December 31, 2005;
- Our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2006;

Our Current Reports on Form 8-K filed with the SEC on February 1, 2006, February 9, 2006, February 22, 2006, April 5, 2006, July 12, 2006, August 1, 2006, August 17, 2006 and September 22, 2006; and

Our Proxy Statement, filed with the SEC on April 28, 2006, relating to our 2006 Annual Meeting of Stockholders.

Table of Contents

Any documents we file pursuant to Sections 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 documents we file pursuant to these sections of the Exchange Act after the date of the registration statement that contains this Prospectus and prior to the effectiveness of the registration statement will automatically be deemed to be incorporated by reference into this Prospectus and to be part hereof from the date of filing those documents. In no event, however, will any of the information that we furnish to the SEC in any Current Report on Form 8-K from time to time be incorporated by reference into, or otherwise included in, this Prospectus.

Any statement contained in this Prospectus or in any document incorporated, or deemed to be incorporated, by reference into this Prospectus shall be deemed to be modified or superseded for purposes of this Prospectus to the extent that a statement contained in this Prospectus or in any subsequently filed document that also is or is deemed to be incorporated by reference into this Prospectus modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Prospectus and the related registration statement.

You can obtain any of our filings incorporated by reference into this Prospectus from us or from the SEC on the SEC s Web site at the address listed above. We will provide without charge to each person to whom this Prospectus is delivered, upon written or oral request, a copy of these filings or portions of these filings by writing or telephoning:

Jerry Pearson

Transgenomic, Inc.

12325 Emmet Street

Omaha, NE 68164

402-452-5400

Table of Contents

24,090,795 Shares

TRANSGENOMIC, INC.

COMMON STOCK

PROSPECTUS

September 26, 2006