TRANSGENOMIC INC
Form S-3
December 22, 2003

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As filed with the Securities and Exchange Commission on December 22, 2003

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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:

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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. o

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

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

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

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

Calculation of Registration Fee

Title of each class of securities be registered	Amount to be registered	Proposed maximum offering price per share(1)	Proposed maximum aggregate offering price(1)	Amount of registration fee
Common Stock, par value $.01 per share	1,505,009(2)	$1.87	$2,814,367	$227.68

(1) Estimated solely for the purpose of computing the amount of the registration fee in accordance with Rule 457(c) under the Securities Act of 1933, as amended. Estimate based on the average of the high and low prices of the Registrant's common stock as reported by the Nasdaq National Market on December 18, 2003 pursuant to Rule 457(c) promulgated under the Securities Act of 1933, as amended.

(2) Consists of 909,091 shares of common stock issuable upon conversion of $2,000,000 in outstanding convertible debt and 595,918 shares issuable upon exercise of outstanding Warrants.

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.

SUBJECT TO COMPLETION, DATED DECEMBER 22, 2003

PRELIMINARY PROSPECTUS

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. these securities and is not seeking an offer to buy these securities in any state where the offer or sale is not permitted.

1,505,009 Shares

TRANSGENOMIC, INC.

COMMON STOCK

This Prospectus covers 1,505,009 shares ("Shares") of our common stock that may be sold by the selling stockholders from time to time. These 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 December 18, 2003 was $1.86 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 6 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.

, 2003

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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 similar 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: DHPLC or Education Programs, FIRST BASE Linkers, 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.

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 segments, BioSystems and Nucleic Acids. Our BioSystems products include our WAVE® automated instrument systems and associated consumable products. Our Nucleic Acids products include chemical building blocks for nucleic acid synthesis and synthesized nucleic acids. Our service offerings include genetic variation discovery 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. One of our significant separation technologies 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. In September 2003 we introduced our SURVEYOR® product line of mutation detection kits. The key component of SURVEYOR Mutation Detection Kits is an enzyme that cleaves DNA at points where any type of DNA sequence variation exists, a significant improvement compared to related enzymes in its class. The resulting DNA fragments can then be analyzed by the Transgenomic 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. We have recently completed product testing with end users and have begun commercial sales. Sales to date have been nominal.

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. We recently completed a new production facility in Boulder, Colorado that will be 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.

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. From these variations researchers are beginning to link the impacts of variations in the gene sequences to disorders and diseases. It is hoped that this knowledge will lead to the creation of diagnostic tests for these disorders and diseases and the development of therapeutic treatments and drugs.

Research and Development

We maintain an active program of research and development and expect to continue to spend significant amounts in 2004. 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.

Sales and Marketing

We currently sell our products in major markets, including the U.S., U.K. and most countries in Western Europe, with a direct sales and support staff. For the rest of the world, we sell our products through dealers and distributors located in those local markets. As of September 30, 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

We have sold our products to several hundred customers in over 30 countries. 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.

Manufacturing

We manufacture bioconsumable products including our separation columns, liquid reagents, polymerase 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 60 pending applications in both the US 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 between 9 to 18 years. Intellectual property related to our Nucleic Acid business unit is mainly licensed in technology. We will continue to file patent applications and seek new licenses as we develop new products and technologies.

Recent Developments

In 2002, we began a project to upgrade and expand our nucleic acid building block production capabilities in Glasgow, Scotland. This project included the upgrading of equipment and processes at the current production facility and the purchase of a new facility that will permit significant capacity expansion. The improvements to the existing production facility were completed during 2002 and the first production line, or pilot line, in the new facility was completed in 2003. Also in 2002, we leased a production facility in Boulder, Colorado and have been developing it as a cGMP (Good Manufacturing Practices) facility principally for the synthesis of oligonucleotides. The Boulder facility began limited cGMP production in the second quarter of 2003. While additional expansion projects for the Glasgow and Boulder production facilities may be undertaken over the next 2 to 3 years as business demand dictates, the current expansion projects have been substantially completed. As a result, our capital expenditures during the second half of 2003 have been significantly lower than during the first six months of the year. We expect capital expenditures for 2003 to be in the range of $6.2 million to $6.9 million.

Since our inception, we have operated at a loss. In addition, we have used more cash than we generated from our operations due primarily to the expenditures we have needed to make for research and development, sales and marketing and expansion of our physical facilities. We instituted a cost reduction program beginning during the fourth quarter of 2002 in order to more closely align our cash expenditures with our current revenues and other cash resources. Among other things, this cost reduction program resulted in the elimination of a significant number of job positions during the first half of 2003 and the abandonment of certain intellectual property. We expect that, as a result of this restructuring, our total operating expenses for 2003 will be 20% to 25% below 2002 levels. Further restructuring activities may occur during 2004.

In December 2003, we terminated our existing line of credit with Silicon Valley Bank, and entered into a new line of credit facility with Laurus Master Fund, Ltd. ("Laurus"). Under the terms of the agreement, we can borrow up to $7,500,000 based on eligible accounts receivable and inventory balances. As of December 18, 2003, we had approximately $3.8 million outstanding on this line of credit facility based upon our current eligible accounts receivable and inventory balances. This line of credit is secured by most of our assets. Payment of interest and principal can, under certain circumstances, be made with shares of our common stock at a conversion price that exceeds the average trading price of our common stock over the ten trading days prior to execution of the new line of credit. Conversion of any of this debt to common stock may only occur if our shares trade at a price exceeding $2.42 per share for ten consecutive trading days and is further subject to trading volume limitations and a limitation on the total beneficial ownership by Laurus of our common stock described in footnote (1) of the "Selling Stockholders" table. In connection with the new line of credit, we issued

warrants to Laurus and its broker, TN Capital Equities, Ltd. ("TerraNova"), to acquire 595,918 shares of our common stock at exercise prices that also exceed the average trading price of our common stock over the ten trading days prior to execution of the new line of credit. Laurus and TerraNova are the selling stockholders named in this Prospectus with respect to shares of our common stock that may be issued under the terms of a Secured Convertible Minimum Borrowing Note that is part of our new line of credit and upon exercise of the warrants.

In December 2003, we announced that we had entered into several specific agreements with Novartis Pharmaceuticals Corp. to provide mutation discovery services in the context of translational research programs in oncology. These services are being provided using our WAVE system along with other technologies and represent a natural extension of our separation chemistries core competency.

In November 2003, we announced the signing of an agreement with Fisher Scientific, a leading global provider of scientific research products and services, to distribute Optimase Polymerase, Transgenomic's high fidelity, thermostable polymerase enzyme for PCR (polymerase chain reaction) amplification of DNA.

During the fourth quarter of 2003, we entered into a preliminary agreement for a sale/leaseback opportunity for our manufacturing facility in Glasgow, Scotland. Proceeds from this transaction are expected to be approximately $1.5 million, net of transaction costs and amounts used to repay our existing mortgage debt on the facility. We expect the transaction to close before December 31, 2003.

On September 9, 2003, we issued 1,780,000 shares of our common stock and on November 13, 2003, we issued 2,720,000 shares of our common stock in privately-negotiated sales. These shares were sold pursuant to the terms of a Securities Purchase Agreement, dated August 27, 2003. The sale of these shares was exempt from registration under the Securities Act of 1933, as amended (the "Securities Act") as a sale not involving a public offering. These shares have been registered for resale pursuant to a Registration Statement declared effective on November 14, 2003. The net proceeds to us, after payment of a 5% sales commission to Fahnestock & Co. Inc., who acted as our placement agent for the sale, and other expenses of the offering, were approximately $4.2 million.

In June 2003 we expanded our license agreement with Geron Corporation under which we produce nucleic acid building blocks. As part of the consideration for the amendment to the License Agreement we agreed to purchase 310,000 shares of Geron Corporation common stock at $5.05 per share, the Nasdaq closing price on June 2, 2003, pursuant to a securities purchase agreement. These shares were subsequently sold in an open market transaction. In September 2003, we signed an addendum to an existing supply agreement with Geron Corporation agreeing to supply additional nucleic acid products. This addendum was filled in the fourth quarter of 2003. Geron elected to pay for such products in Geron Corporation common stock. In 2003, we expect Geron Corporation to be the single largest customer for our Nucleic Acid Business Unit.

As a result of our cost control measures and reduced capital expenditures, we expect our cash usage to decrease in 2004. Based upon our current projections, we expect to meet our cash needs for 2004 from existing cash, additional cash generated from our working capital, additional funds available to us under our $7.5 million credit facility and the net proceeds of the proposed sale/leaseback transaction. These projections assume continued revenue strength in our Biosystems business unit and increasing revenues from our Nucleic Acid business unit. We believe growth will result from increased consumable product offerings, continued strength in demand for our instruments and returning demand for nucleic acid products from Pharmaceutical and BioPharmaceutical customers. These projections may or may not be realized based upon actual operating results and capital project requirements. Thus, cash generated by these sources may be insufficient to satisfy our liquidity requirements. We may need to sell additional equity or debt securities or obtain additional credit arrangements. We cannot assure you that any financing arrangement will be available in amounts or on terms acceptable to us. Our failure to raise additional capital, if needed, would harm our financial condition, results of operations

and our business. We are monitoring our liquidity position and are prepared to take appropriate measures, as needed, to address liquidity. Such measures include, but are not limited to, further expense reductions, asset sales and the placement of equity or debt.

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.

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 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 $21.7 million, $9.7 million and $8.7 million, in 2002, 2001 and 2000, respectively. During the nine months ended September 30, 2003, we experienced operating losses of $14.1 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. In addition, markets for our products have developed more slowly than expected in some 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 not have adequate financial resources to execute our business plan.

We have historically experienced operating losses and negative cash flows. As of September 30, 2003, we had approximately $1.6 million in cash and cash equivalents and short-term investments and an accumulated deficit of $64.1 million. To date, we have financed our operations and capital expenditures primarily from the proceeds of public and private placements of common stock. Additionally, in December 2003 we entered into a loan agreement Laurus Master Fund, Ltd. for up to a $7.5 million secured line of credit. We expect to continue to need substantial amounts of cash to fund our operations and capital expenditures in the future. Based upon our current projections, we expect to meet our cash needs for 2004 from existing cash, additional cash generated from our working capital, additional funds available to us under our $7.5 million credit facility and the net proceeds of the proposed sale/leaseback transaction. These projections may or may not be realized based upon actual operating results and capital project requirements. Thus, our existing cash balances, cash generated by our working capital, available borrowings under credit agreements and net proceeds of the proposed sale/leaseback transaction may be insufficient to satisfy our liquidity requirements. Accordingly, we may need to raise additional capital in the future. However, we cannot assure you that additional financing will be available to us when we need it or on acceptable terms. If we raise additional capital by issuing common stock or other equity securities, the issuance of these securities would result in dilution of our existing stockholders. If we borrow additional money, we will incur additional interest costs and may become subject to covenants that restrict our operations. If we are not able to obtain additional capital as needed, we may need to take further steps to reduce our operating costs, and may not be able to execute parts or all of our business plan.

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

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

International sales have historically accounted for approximately 50% 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.;
- 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.

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

During the fourth quarter of 2002 and the first half of 2003, we took steps to reduce our operating costs that resulted in a significant reduction in our number of employees, including 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 and Pierce Nucleic Acid Technologies. The competitors for our pharmaceutical-grade oligonucleotide synthesis products and services include primarily Proligo, 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 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.

Our stock has traded at prices as high as $30.00 per share immediately after our initial public offering in 2000 to as low as $0.93 per share in April 2003. This 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 your ability to sell shares of our stock and our ability to raise capital through future equity financing.

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 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.

If our outstanding options and warrants are exercised, or our outstanding debt is converted into common stock, it will result in dilution.

As of November 30, 2003, we had outstanding approximately 28.1 million shares of common stock. We also had obligations to issue approximately 5.7 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 new line of credit and the exercise of related warrants. 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.

USE OF PROCEEDS

We received initial loan proceeds of $4.0 million of which $2.0 million relates to a Secured Convertible Minimum Borrowing Note which may be converted into 909,091 of the shares offered hereby. Additionally, we will receive approximately $1.5 million upon the exercise of warrants for the remaining 595,918 shares offered hereby. The loan proceeds and the proceeds from any exercise of these warrants will be used by us for working capital purposes. We will not receive any proceeds from the sale of the shares of common stock offered by this Prospectus.

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 28,119,122 shares of our common stock outstanding as of the date of this Prospectus plus the 1,505,009 shares that may be issued to 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	Shares to be Sold	Number	Percentage
Laurus Master Fund, Ltd. (1)	1,459,091	4.94%	1,459,091	0	*
TN Capital Equities, Ltd. (2)	45,918	*	45,918	0	*
	1,505,009	5.09%	1,505,009	0	*

*
less than 1%

(1)
Consists of 909,091 shares issuable upon the conversion of the $2.0 million Secured Convertible Minimum Borrowing Note and 550,000 shares issuable upon the exercise of warrants. Laurus Master Fund, Ltd. has contractually agreed to beneficial ownership limitations that restrict the conversion or exercise of securities held by Laurus. Laurus has agreed that it will not convert debt or exercise warrants to the extent that such conversion or exercise would result in Laurus, together with its affiliates, beneficially owning more than 4.99% of the number of shares of our common stock outstanding at the time of conversion or exercise.

(2)
Represents 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.

Each selling stockholder acquired 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 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 December 18, 2003 was $1.86 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 whom 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 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 financial statements as of December 31, 2002 and 2001 and for each of the three years in the period ended December 31, 2002 incorporated in this Prospectus by reference from our Annual Report on Form 10-K for the year ended December 31, 2002 have been audited by Deloitte & Touche LLP, independent auditors, as stated in their report (which report expresses an unqualified opinion and includes an explanatory paragraph relating to 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 and our receipt of a commitment letter for a new revolving credit agreement on March 31, 2003), 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 a Registration Statement on Form S-3, 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 the Registration Statement and the exhibits, financial statements and schedules thereto. We refer you to the Registration Statement, 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, 2002, our quarterly reports on Form 10-Q for the quarters ended March 31, 2003, June 30, 2003, and September 30, 2003, current reports on Form 8-K dated May 30, August 29, November 19, November 20, December 3, December 4 and December 9, 2003 and our proxy statement dated April 18, 2003 with the SEC (File No. 000-30975), 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.

1,505,009 Shares

TRANSGENOMIC, INC.

COMMON STOCK

PROSPECTUS

, 2003

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	$	228
Legal fees and expenses		10,000
Accounting fees and expenses		5,000
Printing and engraving		1,000
Miscellaneous expenses		1,000
Total	$	17,228

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.

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	Security Agreement by and between the Registrant and Laurus Master Fund, Ltd. dated December 3, 2003
10.2	Secured Revolving Note by and between the Registrant and Laurus Master Fund, Ltd. dated December 3, 2003
10.3	Secured Convertible Minimum Borrowing Note by and between the Registrant and Laurus Master Fund, Ltd. dated December 3, 2003
10.4	Common Stock Purchase Warrant by and between the Registrant and Laurus Master Fund, Ltd. dated December 3, 2003
10.5	Registration Rights Agreement by and between the Registrant and Laurus Master Fund, Ltd. dated December 3, 2003
10.6	Common Stock Purchase Warrant by and between the Registrant and TN Capital Equities, Ltd. dated December 3, 2003
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.

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.

(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.

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 22nd day of December, 2003.

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: December 22, 2003	By:	/s/ COLLIN J. D'SILVA
		Collin J. D'Silva, President, Chief Executive Officer and Director (Principal Executive Officer)
Date: December 22, 2003	By:	/s/ MICHAEL J. DRAPER
		Michael J. Draper, Chief Financial Officer (Principal Financial Officer)
Date: December 22, 2003	By:	/s/ GREGORY J. DUMAN
		Gregory J. Duman, Director
Date: December 22, 2003	By:	/s/ JEFFREY SKLAR
		Jeffrey Sklar, Director
Date: December 22, 2003	By:	/s/ ROLAND J. SANTONI
		Roland J. Santoni, Director
Date: December 22, 2003	By:	/s/ PARAG SAXENA
		Parag Saxena, Director

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