TRANSGENOMIC INC
Form 424B3
April 06, 2012

Filed Pursuant to Rule 424(b)(3)

Registration No. 333-180242

PROSPECTUS

33,000,000 SHARES OF COMMON STOCK

TRANSGENOMIC, INC.

This prospectus relates to the resale by the investors listed in the section titled “Selling Stockholders”, and we refer to the investors as the selling stockholders (the “Selling Stockholders”) of up to 33,000,000 shares of our Common Stock, par value $.01 per share (the “Common Stock” or “Common Shares”). The Common Shares offered consist of: (i) up to 22,000,000 Common Shares and (ii) up to 11,000,000 Common Shares issuable upon exercise of outstanding warrants (the “Warrants”). We issued the shares of our Common Stock and Warrants in connection with a private placement offering in February 2012. We are registering the resale of the Common Shares and the Common Shares underlying the Warrants as required by the Registration Rights Agreement we entered into with the Selling Stockholders on February 2, 2012 (the “Registration Rights Agreement”).

The Selling Stockholders may offer and sell or otherwise dispose of our Common Shares described in this prospectus from time to time through public or private transactions at prevailing market prices, at prices related to prevailing market prices or at privately negotiated prices. See “Plan of Distribution” beginning on page 7 for more information.

We will not receive any of the proceeds from the Common Stock sold by the Selling Stockholders, other than any proceeds from the cash exercise of Warrants to purchase shares of our Common Stock.

We have agreed to pay certain expenses in connection with this registration statement and to indemnify the Selling Stockholders against certain liabilities. The Selling Stockholders will pay all underwriting discounts and selling commissions, if any, in connection with the sale of the shares of Common Stock.

Our Common Stock is traded on the OTC Bulletin Board under the symbol “TBIO.” On March 30, 2012, the last reported sale price of our Common Stock was $1.20 per share.

Investing in the Securities involves a high degree of risk. See the section entitled “Risk Factors” beginning on page 5 of this prospectus, and the section entitled “Risk Factors” in our most recent Annual Report on Form 10-K for the year ended December 31, 2011 filed with the Securities and Exchange Commission, which is incorporated herein by reference.

Neither the Securities and Exchange Commission nor any state securities commission or other regulatory body 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.

The date of this prospectus is April 6, 2012

TRANSGENOMIC, INC.
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About this Prospectus

You should rely only on the information contained or incorporated by reference in this prospectus. Neither we nor the Selling Stockholders have authorized anyone to provide you with information that is different from such information. If anyone provides you with different or inconsistent information, you should not rely on it. The Selling Stockholders are offering to sell Common Stock only in jurisdictions where offers and sales are permitted. The information contained in this prospectus is accurate only as of the date on its cover page regardless of the time of delivery of this prospectus or any sale of the Common Stock. In case there are differences or inconsistencies between this prospectus and the information incorporated by reference, you should rely on the information in the document with the latest date.

The Selling Stockholders are offering the Common Stock only in jurisdictions where such issuances are permitted. The distribution of this prospectus and the issuance of the Common Stock in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the issuance of the Common Stock and the distribution of this prospectus outside the United States. This prospectus does not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, the Common Stock offered by this prospectus by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

It is important for you to read and consider all of the information contained in this prospectus in making your investment decision. To understand the offering fully and for a more complete description of the offering you should read this entire document carefully, including particularly the “Risk Factors” section beginning on page 5. You also should read and consider the information in the documents to which we have referred you in the sections entitled “Where You Can Find Additional Information” and “Incorporation of Certain Information by Reference”.

As used in this prospectus, unless the context requires otherwise, the terms “we”, “us”, “our”, or “the Company” refer to Transgenomic, Inc. and its subsidiaries on a consolidated basis. References to “Selling Stockholders” refers to those stockholders listed herein under “Selling Stockholders” and their successors, assignees and permitted transferees.

A Warning about Forward-Looking Statements

This prospectus contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”), and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), about the Company and its subsidiaries. These forward-looking statements are intended to be covered by the safe harbor for forward-looking statements provided by the Private Securities Litigation Reform Act of 1995. Forward-looking statements are not statements of historical fact, and can be identified by the use of forward-looking

terminology such as “believes”, “expects”, “may”, “will”, “could”, “should”, “projects”, “plans”, “goal”, “targets”, “potential”, forma”, “seeks”, “intends”, or “anticipates” or the negative thereof or comparable terminology. Forward-looking statements include discussions of strategy, financial projections, guidance and estimates (including their underlying assumptions), statements regarding plans, objectives, expectations or consequences of various transactions, and statements about the future performance, operations, products and services of the Company and its subsidiaries. We caution our stockholders and other readers not to place undue reliance on such statements.

Our businesses and operations are and will be subject to a variety of risks, uncertainties and other factors. Consequently, actual results and experience may materially differ from those contained in any forward-looking statements. Such risks, uncertainties and other factors that could cause actual results and experience to differ from those projected include, but are not limited to, the risk factors set forth in the section entitled “Risk Factors” beginning on page 5 of this prospectus and elsewhere in the documents incorporated by reference in this prospectus, including our Annual Report on Form 10-K for the year ended December 31, 2011.

All written or oral forward-looking statements attributable to us or any person acting on our behalf made after the date of this prospectus are expressly qualified in their entirety by the risk factors and cautionary statements contained in and incorporated by reference into this prospectus. Unless legally required, we do not undertake any obligation to release publicly any revisions to such forward-looking statements to reflect events or circumstances after the date of this prospectus or to reflect the occurrence of unanticipated events.

The Offering

Prospectus Summary

The following summary highlights selected information contained elsewhere in this prospectus and in the documents incorporated by reference in this prospectus and does not contain all the information you will need in making your investment decision. You should read carefully this entire prospectus and the documents incorporated by reference in this prospectus before making an investment decision. This prospectus provides you with a general description of Transgenomic, the Common Stock issuable under this prospectus and the offering.

Business

Transgenomic, Inc. is a global biotechnology company advancing personalized medicine in the detection and treatment of cancer and inherited diseases through its proprietary molecular technologies and world-class clinical and research services. Our operations are organized and reviewed by management along its product lines and presented in the three complementary business segments.

- Clinical Laboratories. Our clinical laboratories specialize in genetic testing for cardiology, neurology, mitochondrial disorders, and oncology. Located in New Haven, Connecticut and Omaha, Nebraska the molecular clinical reference laboratories are certified under the Clinical Laboratory Improvement Amendment (CLIA) as high complexity labs and our Omaha facility is also accredited by the College of American Pathologists (CAP).

- Pharmacogenomics Services. Our Contract Research Organization located in Omaha, Nebraska provides pharmacogenomics research services supporting Phase II and Phase III clinical trials conducted by our pharmaceutical customers. This lab specializes in pharmacogenomic, biomarker and mutation discovery research serving the pharmaceutical and biomedical industries worldwide for disease research, drug and diagnostic development and clinical trial support.

- Diagnostic Tools. Our proprietary product is the WAVE® System which has broad applicability to genetic variation detection in both molecular genetic research and molecular diagnostics. There is a worldwide installed base of over 1,500 WAVE Systems as of December 31, 2011. We also distribute bioinstruments produced by other manufacturers (“OEM Equipment”) through our sales and distribution network. Service contracts to maintain installed systems are sold and supported by our technical support personnel. The installed WAVE base and some OEM Equipment platforms generate a demand for consumables that are required for the continued operation of the bioinstruments. We develop, manufacture and sell these consumable products. In addition, we manufacture and sell consumable products that can be used on multiple, independent platforms. These products include SURVEYOR®

Nuclease and a range of chromatography columns.

For a complete description of our business, financial condition, results of operations and other important information, we refer you to our filings with the Securities and Exchange Commission (the "SEC") that are incorporated by reference in this prospectus, including our Annual Report on Form 10-K for the year ended December 31, 2011. For instructions on how to find copies of these documents, see "Where You Can Find Additional Information".

We were incorporated in Delaware on March 6, 1997. Our principal office is located at 12325 Emmet Street, Omaha, Nebraska 68164 and our telephone phone number is 402-452-5400. Our website address is www.transgenomic.com. Information on our website, or that can be accessed through our website, is not incorporated by reference into this prospectus and does not constitute part of this prospectus.

The Offering

Issuer	Transgenomic, Inc.
Common Stock outstanding	71,625,725 Common Shares(1)
Common Stock, offered by the selling stockholders	33,000,000 Common Shares(2)
Common Stock outstanding after the offering	82,625,725 Common Shares(3)
Use of proceeds	We will not receive any proceeds from the sale of the Common Shares. We may, however, receive cash proceeds upon the cash exercise of Warrants, and we intend to use any such proceeds for general corporate and working capital purposes. See "Use of Proceeds" beginning on page 6 of this prospectus.
Listing	Our Common Stock is listed on the OTC Bulletin Board under the symbol "TBIO".
Risk Factors	You should consider carefully the matters set forth under "Risk Factors" beginning on page 5 of this prospectus before deciding to purchase any of the Common Stock.

(1) The number of shares shown to be outstanding is based on the number of shares of our Common Stock outstanding as of March 13, 2012, and does not include shares issuable upon exercise of warrants (including the shares of Common Stock underlying Warrants registered hereunder), shares issuable upon conversion of the outstanding shares of our Series A Convertible Preferred Stock into shares of Common Stock or shares issuable upon exercise of outstanding options to acquire Common Stock.

(2) The number of shares shown to be registered hereunder includes 22,000,000 shares of Common Stock outstanding and 11,000,000 shares of Common Stock issuable upon exercise of Warrants.

(3) The number of shares outstanding after the offering assumes full cash exercise by the Selling Stockholders of the 11,000,000 shares of Common Stock issuable upon exercise of Warrants being registered hereunder and includes the Common Shares issuable upon exercise of the Warrants, but excludes shares issuable upon exercise of other warrants, shares issuable upon conversion of the outstanding shares of our Series A Convertible Preferred Stock into shares of Common Stock and shares issuable upon exercise of outstanding options to acquire Common Stock.

Risk Factors

Ownership of the Common Stock involves certain risks. You should consider carefully the risks and uncertainties described in, or incorporated by reference in, this prospectus, including the risks described below and under the caption “Risk Factors” in our Annual Report on Form 10-K for the year ended December 31, 2011, and in any other reports that we file with the SEC, along with the other information included or incorporated by reference in this prospectus, in evaluating an investment in the Common Stock. The information included or incorporated by reference in this prospectus may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future. For a description of these reports and documents, and information about where you can find them, see the sections entitled “Where You Can Find Additional Information” and Incorporation of Certain Information by Reference” in this prospectus.

The risks and uncertainties described in this prospectus and the documents incorporated by reference in this prospectus are not the only ones facing us. Additional risks and uncertainties that we do not presently know about or that we current believe are not material may also adversely affect our business. If any of the risks and uncertainties described in this prospectus or the documents incorporated by reference herein actually occur, our business, financial condition and results of operations could be adversely affected in a material way. This could cause the trading price of our Common Stock to decline, perhaps significantly, and you may lose part or all of your investment.

Our Common Stock is equity and therefore is subordinate to our indebtedness and preferred stock.

Our Common Stock is an equity interest and does not constitute indebtedness of the Company. Consequently, our Common Stock ranks junior to all current and future indebtedness of the Company and other non-equity claims against us with respect to assets available to satisfy claims against us, including in the event of our liquidation or dissolution. We may, and our other subsidiaries may also, incur additional indebtedness from time to time and may increase our aggregate level of outstanding indebtedness.

Further, holders of our Common Stock are subject to the prior dividend and liquidation rights of any holders of our preferred stock that may be outstanding from time to time. Our Board of Directors has designated 3,879,307 shares of our authorized preferred stock as Series A Convertible Preferred Stock (the "Series A Preferred") with certain rights, privileges and preferences which are senior to the rights of the holders of our Common Stock. Our Board of Directors is authorized to cause us to issue additional classes or series of preferred stock without any action on the part of our common stockholders. If we issue additional shares of Series A Preferred or other preferred shares in the future that have a preference over our Common Stock with respect to the payment of dividends or upon liquidation, or if we issue preferred shares with voting rights that dilute the voting power of our Common Stock, then the rights of holders of our Common Stock or the market price of our Common Stock could be adversely affected.

Sales of our shares issued in our recent private placement may cause the market price of our shares to decline.

On February 7, 2012, we issued 22,000,000 shares of Common Stock and Warrants to purchase an additional 11,000,000 shares of Common Stock to investors. Pursuant to the Registration Rights Agreement with the Selling Stockholders, we are registering with the SEC 33,000,000 of those shares and warrant shares for resale as described in this prospectus. The shares issued on February 7, 2012 represent approximately 40% of our issued and outstanding shares of Common Stock, assuming full cash exercise of the Warrants. Upon effectiveness of this registration statement of which this prospectus is a part, these shares may be freely sold in the open market. The sale of a significant amount of shares in the open market, or the perception that these sales may occur, could cause the trading price of our Common Stock to decline or become highly volatile.

Our ability to use our net operating losses to offset future taxable income will be subject to certain limitations.

In general, under Section 382 of the Internal Revenue Code of 1986, as amended, or the Internal Revenue Code, a corporation that undergoes an "ownership change" is subject to limitations on its ability to utilize its pre-ownership change net operating losses, or NOLs, to offset future taxable income. Our existing NOLs will be subject to limitations arising from previous ownership changes, and if we undergo an ownership change in the future, our ability to utilize NOLs could be further limited by Section 382 of the Internal Revenue Code. Furthermore, our ability to

utilize NOLs of any companies that we may acquire in the future may be subject to limitations. As a result, if we earn net taxable income, our ability to use our pre-change net operating loss carryforwards to offset U.S. federal taxable income will be subject to limitations, which could potentially result in increased future tax liability to us. The purchase of our Common Stock pursuant to this offering or acquisition of our Common Stock upon Warrant exercise could potentially cause, or increase the risk of, an ownership change that triggers the Section 382 limitation upon the utilization of our NOLs.

Non-U.S. holders may be subject to U.S. income tax with respect to gain on disposition of their Common Stock or Warrants.

If we are or have been a U.S. real property holding corporation at any time within the shorter of the five-year period preceding a disposition of Common Stock or a warrant by a non-U.S. holder or such holder's holding period of the stock disposed of, such non-U.S. holder may be subject to United States federal income tax with respect to gain on such disposition. We believe that we are not currently, and do not anticipate becoming, a "United States real property holding corporation" for U.S. federal income tax purposes. Even if we are considered a U.S. real property holding corporation, an additional exception may exempt a non-U.S. holder's gain on disposition of our Common Stock or Warrants from United States federal income tax. See section entitled "United States Federal Income Tax Considerations" for further information.

Use of Proceeds

We will receive no proceeds from the sale of the Common Shares by the Selling Stockholders. We may, however, receive cash proceeds equal to the total exercise price of any Warrants to the extent that the Warrants are exercised. The exercise price of the Warrants held by the Selling Stockholders is $1.25 per share of our Common Stock. The exercise price and the number of Common Shares issuable upon exercise of the Warrants may be adjusted in certain circumstances, including stock splits, dividends, distributions or reclassifications, and mergers, consolidations, statutory share exchanges, or other similar transactions. However, these Warrants contain a “cashless exercise” feature that allows the holders, under certain circumstances, to exercise the Warrants without making a cash payment to us. There can be no assurance any of these Warrants will be exercised by the Selling Stockholders at all or that these Warrants will be exercised for cash rather than pursuant to the “cashless exercise” feature. To the extent we receive proceeds from the cash exercise of the Warrants, we may use such proceeds to provide capital support or for general corporate purposes, which may include, without limitation, supporting asset growth and engaging in acquisitions or other business combinations. We do not have any specific plans for acquisitions or other business combinations at this time. Our management will retain broad discretion in the allocation of the net proceeds from the exercise of the Warrants.

We will pay certain expenses related to the registration of the shares of Common Stock.

Determination of Offering Price

The Selling Stockholders will determine at what price they may sell the offered shares, and such sales may be made at prevailing market prices, or at privately negotiated prices.

Plan of Distribution

We are registering the shares of Common Stock previously issued to the Selling Stockholders and issuable upon exercise of the Warrants previously issued to the Selling Stockholders to permit the resale of these shares of Common Stock by the holders of the Common Stock and Warrants from time to time after the date of this prospectus. We will not receive any of the proceeds from the sale by the Selling Stockholders of the shares of Common Stock. We will bear all fees and expenses incident to our obligation to register the shares of Common Stock.

The Selling Stockholders, or their pledges, donees, transferees, or any of their successors in interest selling shares received from a Selling Shareholder as a gift, partnership distribution or other non-sale related transfer after the date

of this prospectus, may sell all or a portion of the shares of Common Stock beneficially owned by them and offered hereby from time to time directly or through one or more underwriters, broker-dealers or agents. If the shares of Common Stock are sold through underwriters or broker-dealers, the Selling Stockholders will be responsible for underwriting discounts or commissions or agent's commissions. The shares of Common Stock may be sold in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices. The Selling Stockholders will act independently of us in making decisions with respect to the timing, manner and size of each sale. These sales may be affected in transactions, which may involve crosses or block transactions,

- on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale;
- in the over-the-counter market;
- in transactions otherwise than on these exchanges or systems or in the over-the-counter market;
- through the writing of options, whether such options are listed on an options exchange or otherwise;
- 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;
- short sales;
- through the distribution of the Common Stock by any Selling Stockholders to its partners, members or stockholders;
- through one or more underwritten offerings on a firm commitment or best efforts basis;
- sales pursuant to Rule 144;
- 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 Shareholders may also transfer the Common Shares by gift.

The Selling Shareholders may engage brokers and dealers, and any brokers or dealers may arrange for other brokers or dealers to participate in effecting sales of the Common Shares. These brokers, dealers or underwriters may act as principals, or as an agent of a Selling Shareholder. Broker-dealers may agree with a Selling Shareholder to sell a specified number of the Common Shares at a stipulated price per security. If the broker-dealer is unable to sell the Common Shares acting as agent for a Selling Shareholder, it may purchase as principal any unsold Common Shares at the stipulated price. Broker-dealers who acquire Common Shares as principals may thereafter resell the Common Shares from time to time in transactions in any stock exchange or automated interdealer quotation system on which the Common Shares are then listed, at prices and on terms then prevailing at the time of sale, at prices related to the then-current market price or in negotiated transactions. Broker-dealers may use block transactions and sales to and through broker-dealers, including transactions of the nature described above. The Selling Shareholders may also sell the Common Shares in accordance with Rule 144 under the Securities Act of 1933, as amended, rather than pursuant to this prospectus, regardless of whether the Common Shares are covered by this prospectus

If the Selling Stockholders effect such transactions by selling shares of Common Stock to or through underwriters, broker-dealers or agents, such underwriters, broker-dealers or agents may receive commissions in the form of discounts, concessions or commissions from the Selling Stockholders or commissions from purchasers of the shares of Common Stock for whom they may act as agent or to whom they may sell as principal (which discounts, concessions or commissions as to particular underwriters, broker-dealers or agents may be in excess of those customary in the types of transactions involved). In connection with sales of the shares of Common Stock or otherwise, the Selling Stockholders may enter into hedging transactions with broker-dealers, which may in turn engage in short sales of the shares of Common Stock in the course of hedging in positions they assume. The Selling Stockholders may also sell shares of Common Stock short and deliver shares of Common Stock covered by this prospectus to close out short positions and to return borrowed shares in connection with such short sales. The Selling Stockholders may also loan or pledge shares of Common Stock to broker-dealers that in turn may sell such shares.

The Selling Stockholders may pledge or grant a security interest in some or all of the shares of Common Stock or Warrants owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of Common Stock from time to time pursuant to this prospectus or any amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending, if necessary, the list of Selling Stockholders to include the pledgee, transferee or other successors in interest as Selling Stockholders under this prospectus. The Selling Stockholders also may transfer and donate the shares of Common Stock in other circumstances in which case the transferees, donees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

In addition, a Selling Shareholder may, from time to time, sell the Common Shares short, and, in those instances, this prospectus may be delivered in connection with the short sales and the Common Shares offered under this prospectus may be used to cover short sales.

The Selling Stockholders and any broker-dealer participating in the distribution of the shares of Common Stock may be deemed to be “underwriters” within the meaning of the Securities Act, and any commission paid, or any discounts or

concessions allowed to, any such broker-dealer may be deemed to be underwriting commissions or discounts under the Securities Act. At the time a particular offering of the shares of Common Stock is made, a prospectus supplement, if required, will be distributed which will set forth the aggregate amount of shares of Common Stock being offered and the terms of the offering, including the name or names of any broker-dealers or agents, any discounts, commissions and other terms constituting compensation from the Selling Stockholders and any discounts, commissions or concessions allowed or reallowed or paid to broker-dealers. The Selling Stockholders may indemnify any broker-dealer that participates in transactions involving the sale of the shares of Common Stock against certain liabilities, including liabilities arising under the Securities Act.

Under the securities laws of some states, the shares of Common Stock may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the shares of Common Stock may not be sold unless such shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with.

There can be no assurance that any Selling Stockholder will sell any or all of the shares of Common Stock registered pursuant to the registration statement, of which this prospectus forms a part.

The Selling Stockholders and any other person participating in such distribution will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including, without limitation, Regulation M of the Exchange Act, which may limit the timing of purchases and sales of any of the shares of Common Stock by the Selling Stockholders and any other participating person. Regulation M may also restrict the ability of any person engaged in the distribution of the shares of Common Stock to engage in market-making activities with respect to the shares of Common Stock. All of the foregoing may affect the marketability of the shares of Common Stock and the ability of any person or entity to engage in market-making activities with respect to the shares of Common Stock.

We will pay all expenses of the registration of the shares of Common Stock pursuant to the Registration Rights Agreement, estimated to be $54,316 in total, including, without limitation, SEC filing fees and expenses of compliance with state securities or "Blue Sky" laws; *provided*, *however*, that a Selling Stockholder will pay all underwriting discounts and selling commissions, if any. We will indemnify the Selling Stockholders against liabilities, including some liabilities under the Securities Act, in accordance with the Registration Rights Agreement, or the Selling Stockholders will be entitled to contribution. We may be indemnified by the Selling Stockholders against civil liabilities, including liabilities under the Securities Act, that may arise from any written information furnished to us by the selling stockholder specifically for use in this prospectus, in accordance with Registration Rights Agreement, or we may be entitled to contribution.

Once sold under the registration statement, of which this prospectus forms a part, the shares of Common Stock will be freely tradable in the hands of persons other than our affiliates.

Selling Stockholders

We have prepared this prospectus to allow the Selling Stockholders or their successors, assignees or other permitted transferees to sell or otherwise dispose of, from time to time, up to 33,000,000 shares of our Common Stock. The 33,000,000 shares includes the following: (i) 19,000,000 shares of our Common Stock issued pursuant to the Securities Purchase Agreement dated February 2, 2012 (the "Securities Purchase Agreement"); (ii) 9,500,000 shares of Common Stock issuable upon exercise of five-year Warrants with an exercise price of $1.25 issued pursuant to the Securities Purchase Agreement; (iii) 3,000,000 shares of Common Stock issued to the entities associated with Third Security, LLC (the "Third Security Entities") in connection with the conversion of the convertible notes issued by us; and (iv) 1,500,000 shares of Common Stock issuable to the Third Security Entities upon exercise of Warrants on the same terms as the investors in the above-described private placement.

The table below presents information regarding the Selling Stockholders and the shares of our Common Stock that they may sell or otherwise dispose of from time to time under this prospectus. The table is based on information supplied to us by the Selling Stockholders. Percentages of beneficial ownership are based upon 98,142,953 shares of Common Stock issued and outstanding as of March 13, 2012. Beneficial ownership is determined under Section 13(d) of the Exchange Act and generally includes voting or investment power with respect to securities and including any securities that grant the Selling Stockholders the right to acquire Common Stock within 60 days of March 13, 2012. We do not know when or in what amounts the Selling Stockholders may sell or otherwise dispose of the shares covered hereby. The Selling Stockholders might not sell any or all of the shares covered by this prospectus or may sell or dispose of some or all of the shares other than pursuant to this prospectus. Because the Selling Stockholders may not sell or otherwise dispose of some or all of the shares covered by this prospectus and because there are currently no agreements, arrangements or understandings with respect to the sale or other disposition of any of the shares, we cannot estimate the number of the shares that will be held by the Selling Stockholders after completion of the offering.

Except as provided below, none of the Selling Stockholders has held any position or office or had any other material relationship with us or any of our predecessors or affiliates within the past three years other than as a result of the ownership of our securities.

Name of Selling Stockholder	**Number of Shares of Common Stock Owned Prior to Offering**[1]	Maximum Number of Shares of Common Stock to be Offered Pursuant to this Prospectus	**Number of Shares of Common Stock Owned After Offering**[2]	
	Number	Number	Number	Percent
James E. Douglas III[3]	600,000	600,000	—	—%
K & M Douglas TR u/a dtd 3/23/06. Kevin and Michelle Douglas TTEES[3]	2,400,000	2,400,000		—%
Douglas Irrev Descendants TR u/a dtd 8/7/98 Kevin & Michelle Douglas TTEES[3]	1,980,000	1,980,000	—	—%
Douglas Family TR u/a dtd 1/29/90 James and Jean Douglas TTEES[3]	1,020,000	1,020,000	—	—%
Special Situations Fund II QP, L.P.[4]	2,625,000	2,625,000	—	—%
Special Situations Private Equity Fund, L.P.[4]	1,125,000	1,125,000	—	—%
Special Situations Life Sciences Fund, L.P.[4]	1,500,000	1,500,000	—	—%

Third Security Incentive 2010 LLC [5]	4,052,626	900,000	3,152,626	3%
Third Security Staff 2010 LLC[5]	8,105,252	1,800,000	6,305,252	6%
Third Security Senior Staff 2008 LLC[5]	8,105,252	1,800,000	6,305,252	6%
Fidelity Select Portfolios: Biotechnology Portfolio[6]	4,811,882	4,257,000	554,882	—%
Fidelity Advisor Series VII: Fidelity Advisor Biotechnology Fund[6]	276,100	243,000	33,100	—%
Perceptive Life Sciences Master Fund Ltd.[7]	3,000,000	3,000,000		
Burguete Investment Partnership, LP[8]	1,500,000	1,500,000	—	—%
Robert G. Allison	255,000	255,000	—	—%
William H. Baxter Trustee FBO William H. Baxter Revocable Trust u/a dtd 7/3/96	60,000	60,000	—	—%
Gary A. Bergren	90,000	90,000		
David & Carole Brown TTEES FBO David & Carole Brown Rev Tru/a dtd 10/23/97	52,500	52,500	—	—%
Dennis D. Gonyea	60,000	60,000	—	—%
Dorothy J. Hoel	60,000	60,000	—	—%
Dr. Paul & Nancy Seel JtRos	60,000	60,000	—	—%
E. Terry Skone TTEE E. Terry Skone Rev TR u/a dtd 11/30/05	60,000	60,000		
Janet & Donald Voight TTEES FBO Janet M Voight TR u/a dtd 8/28/96	52,500	52,500	—	—%
Kettle Hill Master Fund, Ltd[9]	274,500	274,500	—	—%
Kettle Hill Partners II, LP[9]	148,500	148,500		
Kettle Hill Partners, LP[9]	327,000	327,000	—	—%
Capital Ventures International[10]*	750,000	750,000		
DAFNA Lifescience LTD[11]	247,500	247,500	—	—%
DAFNA Lifescience Market Neutral LTD[11]	202,500	202,500	—	—%
DAFNA Lifescience Select LTD[11]	300,000	300,000	—	—%
Aristides Fund LP[12]	600,000	600,000	—	—%
Pennington Capital LLC[13]	560,000	450,000	110,000	—%
Itasca Capital Partners, LLC[14]	405,000	375,000	30,000	—%
L2 Opportunity Fund[15]	375,000	375,000	—	—%
FT Options, LLC[16]	375,000	375,000	—	—%
Brian H. Davidson	375,000	375,000		
Iroquois Master Fund, Ltd.[17]	300,000	300,000	—	—%
MLPF&S FPO Gary S. Kohler RRA FBO Gary S. Kohler	300,000	300,000	—	—%
Kingsbrook Opportunities Master Fund LP[18]	300,000	300,000	—	—%
Cranshire Capital Master Fund, Ltd.[19]	210,000	210,000	—	—%
Freestone Advantage Partners II, LP[20]	15,000	15,000	—	—%

Midsummer Small Cap Master, Ltd.[21]	225,000	225,000	—	%
Lacuna Hedge Fund LLLP[22]	187.500	187,500		%
Doit L. Koppler II[23]	107,500	52,500	55,000	%
Robert M. Patzig[24]	92,500	37,500	55,000	%
Theodore J. Fisher[25]	22,500	22,500	—	%
MLPF&S FPO Michael John Qualen IRA FB[26]	150,000	150,000	—	%
Craig-Hallum Capital Group 401k Bradley W. Baker Roth 401k Acct.(27)	30,000	30,000	—	%
Bradley W. Baker[27]	150,000	150,000	—	%
George F. Sutton[28]	77,500	37,500	40,000	%
James H. Zavoral, Jr. and Johanna M. Zavoral[29]	97,500	97,500	—	%
Craig-Hallum Capital Group 401k UTD 5/30/02 Contribution Acct A/C William F. Hartfield II[30]	150,000	150,000	—	%
John L. Flood[31]	90,000	90,000	—	%
MLPF&S Cust FPO John L. Flood IRRA FBO John L. Flood*31»	90,000	90,000	—	%
Kevin P. Harris[32]	180,000	180,000	—	%
MLPF&S Cust FPO Michael J. Hasslinger IRRA FBO Michael J. Hasslinger[33]	75,000	75,000	—	%

— Represents less than 1%

(1) The number of shares for each Selling Stockholder consists of the aggregate of the number of shares of Common Stock held by such Selling Stockholder and shares of Common Stock issuable upon exercise of Warrants held by such Selling Stockholder.

(2) For purposes of this table, the Company assumes that all of the shares covered by this prospectus will be sold by the Selling Stockholders.

(3) Kevin Douglas and his wife, Michelle Douglas, hold shares jointly as the beneficiaries and co-trustees of the K&M Douglas Trust. In addition, Kevin Douglas and Michelle Douglas are co-trustees of the James Douglas and Jean Douglas Irrevocable Descendants' Trust. Kevin Douglas also has dispositive power with respect to the shares held by the Douglas Family Trust and the shares held by James E. Douglas III.

(4) MGP Advisors Limited ("MGP") is the general partner of the Special Situations Fund III, QP, L.P. AWM Investment Company, Inc. ("AWM") is the general partner of MGP and the investment adviser to the Special Situations Fund III, QP, L.P., Special Situations Private Equity Fund, L.P. and Special Situations Life Sciences Fund, L.P. Austin W. Marxe and David M. Greenhouse are the principal owners of MGP and AWM. Through their control of MGP and AWM, Messrs. Marxe and Greenhouse share voting and investment control over the portfolio securities of each of the funds listed above.

(5) Randal J. Kirk makes investment and voting decisions with respect to shares held by the Third Security Entities. The Third Security Entities are the holders of all of the shares outstanding of our Series A Preferred and the

amount of securities beneficially owned by each of the Third Security Entities includes shares of Common Stock issuable upon conversion of the outstanding shares of Series A Preferred and the conversion of shares of Series A Preferred issuable upon exercise of warrants for shares of Series A Convertible Preferred Stock. The holders of Series A Preferred have the right to appoint two members to our Board of Directors.

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(6) Fidelity Management & Research Company ("Fidelity"), 82 Devonshire Street, Boston, Massachusetts 02109, a wholly-owned subsidiary of FMR LLC and an investment adviser registered under Section 203 of the Investment Advisers Act of 1940, is the beneficial owner of 5,087,982 shares of the Company as a result of acting as investment adviser to various investment companies registered under Section 8 of the Investment Company Act of 1940. Edward C. Johnson 3d and FMR LLC, through its control of Fidelity, and the funds each has sole power to dispose of the 5,087,982 Shares owned by the Funds. Members of the family of Edward C. Johnson 3d, Chairman of FMR LLC, are the predominant owners, directly or through trusts, of Series B voting common shares of FMR LLC, representing 49% of the voting power of FMR LLC. The Johnson family group and all other Series B shareholders have entered into a shareholders' voting agreement under which all Series B voting common shares will be voted in accordance with the majority vote of Series B voting common shares. Accordingly, through their ownership of voting common shares and the execution of the shareholders' voting agreement, members of the Johnson family may be deemed, under the Investment Company Act of 1940, to form a controlling group with respect to FMR LLC. Neither FMR LLC nor Edward C. Johnson 3d, Chairman of FMR LLC, has the sole power to vote or direct the voting of the shares owned directly by the Fidelity funds, which power resides with the Funds' Boards of Trustees. Fidelity carries out the voting of the shares under written guidelines established by the Funds' Boards of Trustees. Fidelity has indicated that it may be deemed to be an affiliate of a registered broker-dealer. Fidelity has represented that it acquired the shares in the ordinary course of business and, at the time of the acquisition of the shares, had no agreements or understandings, directly or indirectly, with any person to distribute the shares.

(7) Joseph Edelman makes investment and voting decisions with respect to shares held by Perceptive Life Sciences Master Fund Ltd.

(8) James J. Tiampo, President of Verbier Management Corp., which is the general partner of Burguete Investment Partnership, LP, makes investment and voting decisions with respect to shares held by Burguete Investment Partnership, LP.

(9) Andrew Yoichi Kurita, Portfolio Manager, makes investment and voting decisions with respect to shares held by Kettle Hill Master Fund, Ltd., Kettle Hill Partners, L.P. and Kettle Hill Partners II, L.P.

(10) Heights Capital Management, Inc., the authorized agent of Capital Ventures International ("CVI"), has discretionary authority to vote and dispose of the shares held by CVI and may be deemed to be the beneficial owner of these shares. Martin Kobinger, in his capacity as Investment Manager of Heights Capital Management, Inc., may also be deemed to have investment discretion and voting power over the shares held by CVI. Mr. Kobinger disclaims any such beneficial ownership of the shares. CVI is affiliated with one or more FINRA members, none of whom are currently expected to participate in the sale pursuant to the prospectus contained in this Registration Statement of shares held by CVI. CVI has represented that it acquired the shares in the ordinary course of business and, at the time of the acquisition of the shares, had no agreements or understandings, directly or indirectly, with any person to distribute the shares.

(11) Fariba Ghodsian, Managing Member, makes investment and voting decisions with respect to shares held by DAFNA Lifescience LTD, DAFNA Lifescience Market Neutral LTD and DAFNA Lifescience Select LTD.

(12) Christopher M. Brown, Managing Member of the general partner of Aristides Fund LP, makes investment and voting decisions with respect to shares held by Aristides Fund LP.

(13) Robert J. Evans, Managing Partner, makes investment and voting decisions with respect to shares held by Pennington Capital LLC.

(14) Michael S. Wallace, Managing Member, makes investment and voting decisions with respect to shares held by Itasca Capital Partners, LLC.

(15) Russ Silvestri, Managing Director, makes investment and voting decisions with respect to shares held by L2 Opportunity Fund.

(16) Zachary Quinn Piper, Partner, makes investment and voting decisions with respect to shares held by FT Options, LLC.

(17) Iroquois Capital Management L.L.C. (Iroquois Capital) is the investment manager of Iroquois Master Fund, Ltd (IMF). Consequently, Iroquois Capital has voting control and investment discretion over securities held by IMF. As managing members of Iroquois Capital, Joshua Silverman and Richard Abbe make voting and investment decisions on behalf of Iroquois Capital in its capacity as investment manager to IMF. As a result of the foregoing, Mr. Silverman and Mr. Abbe may be deemed to have beneficial ownership (as determined under Section 13(d) of the Securities Exchange Act of 1934, as amended) of the securities held by IMF. Notwithstanding the foregoing, Mr. Silverman and Mr. Abbe disclaim such beneficial ownership.

(18) Kingsbrook Partners LP ("Kingsbrook Partners") is the investment manager of Kingsbrook Opportunities Master Fund LP ("Kingsbrook Opportunities") and consequently has voting control and investment discretion over securities held by Kingsbrook Opportunities. Kingsbrook Opportunities GP LLC ("Opportunities GP") is the general partner of Kingsbrook Opportunities and may be considered the beneficial owner of any securities deemed to be beneficially owned by Kingsbrook Opportunities. KB GP LLC ("GP LLC") is the general partner of Kingsbrook Partners and may be considered the beneficial owner of any securities deemed to be beneficially owned by Kingsbrook Partners. Ari J. Storch, Adam J. Chill and Scott M. Wallace are the sole managing members of Opportunities GP and GP LLC and as a result, may be considered beneficial owners of any securities deemed beneficially owned by Opportunities GP and GP LLC. Each of Kingsbrook Partners, Opportunities GP, GP LLC and Messrs. Storch, Chill and Wallace disclaim beneficial ownership of these securities.

(19) Cranshire Capital Advisors, LLC ("CCA") is the investment manager of Cranshire Capital Master Fund, Ltd. ("Cranshire Master Fund") and has voting control and investment discretion over securities held by Cranshire Master Fund. Mitchell P. Kopin, the president, the sole member and the sole member of the Board of Managers of CCA, has voting control over CCA. As a result, each of Mr. Kopin and CCA may be deemed to have beneficial ownership (as determined under Section 13(d) of the Exchange Act of the securities held by Cranshire Master Fund. CCA is also the investment manager for a managed account for Freestone Advantage Partners, II LP ("Freestone II"), and CCA has voting control and investment discretion over securities held by Freestone II. As a result, Mr. Kopin may be deemed to be the beneficial owner of the 15,000 shares of Common Stock held by Freestone II consisting of (i) 10,000 shares of Common Stock held by Freestone II, and (ii) 5,000 shares of Common Stock issuable upon exercise of Warrants held by Freestone II.

(20) Cranshire Capital Advisors, LLC ("CCA") is the investment manager of a managed account for Freestone Advantage Partners II, LP ("Freestone II") and has voting control and investment discretion over securities held by Freestone II in such managed account. Mitchell P. Kopin, the president, the sole member and the sole member of the Board of Managers of CCA, has voting control over CCA. As a result, Mr. Kopin and CCA may be deemed to be the beneficial owner (as determined under Section 13(d) of the Securities Exchange Act, as amended) of the securities held by Freestone II in such managed account. CCA is also the investment manager of Cranshire Capital Master Fund, Ltd ("Cranshire Master Fund") and CCA has voting control and investment discretion over securities held by Cranshire Master Fund. Mr. Kopin, the sole member and the sole member of the Board of Managers of CCA, has voting control over CCA. As a result, each of Mr. Kopin and CCA may be deemed to have beneficial ownership (as determined under Section 13(d) of the Securities Exchange Act, as amended) of the securities held by Cranshire Master Fund that are described in footnote 19 above.

(21)

Joshua Thomas or Michel Amsalem make investment and voting decisions with respect to shares held by Midsummer Small Cap Master, Ltd.

(22) Richard O'Leary, Partner, makes investment and voting decisions with respect to shares held by Lacuna Hedge Fund, LLLP.

(23) Mr. Koppler is a member of our Board of Directors and was appointed by the Third Security Entities, as holders of Series A Preferred.

(24) Mr. Patzig serves on our Board of Directors and was appointed by the Third Security Entities, as holders of Series A Preferred.

(25) Mr. Fisher serves as assistant general counsel to the Third Security Entities, which are also Selling Stockholders hereunder and holders of Series A Preferred.

(26) Mr. Qualen has indicated that he may be deemed to be an affiliate of a registered broker-dealer. Mr. Qualen has represented that he acquired his shares in the ordinary course of business and, at the time of the acquisition of the shares, had no agreements or understandings, directly or indirectly, with any person to distribute the shares.

(27) Mr. Baker makes investment and voting decisions with respect to shares held in the Craig-Hallum Capital Group 401(k) Bradley W. Baker Roth 410(k) Account. Mr. Baker has indicated that he may be deemed to be an affiliate of a registered broker-dealer. Mr. Baker has represented that he acquired his shares in the ordinary course of business and, at the time of the acquisition of the shares, had no agreements or understandings, directly or indirectly, with any person to distribute the shares.

(28) Mr. Sutton has indicated that he may be deemed to be an affiliate of a registered broker-dealer. Mr. Sutton has represented that he acquired his shares in the ordinary course of business and, at the time of the acquisition of the shares, had no agreements or understandings, directly or indirectly, with any person to distribute the shares.

(29) Mr. and Mrs. Zavoral have indicated that they may be deemed to be an affiliate of a registered broker-dealer. Mr. and Mrs. Zavoral have represented that they acquired their shares in the ordinary course of business and, at the time of the acquisition of the shares, had no agreements or understandings, directly or indirectly, with any person to distribute the shares.

(30) Mr. Hartfield has indicated that he may be deemed to be an affiliate of a registered broker-dealer. Mr. Hartfield has represented that he acquired his shares in the ordinary course of business and, at the time of the acquisition of the shares, had no agreements or understandings, directly or indirectly, with any person to distribute the shares.

(31) Mr. Flood has indicated that he may be deemed to be an affiliate of a registered broker-dealer. Mr. Flood has represented that he acquired his shares in the ordinary course of business and, at the time of the acquisition of the shares, had no agreements or understandings, directly or indirectly, with any person to distribute the shares.

(32) Mr. Harris has indicated that he may be deemed to be an affiliate of a registered broker-dealer. Mr. Harris has represented that he acquired his shares in the ordinary course of business and, at the time of the acquisition of the shares, had no agreements or understandings, directly or indirectly, with any person to distribute the shares.

(33) Mr. Haslinger has indicated that he may be deemed to be an affiliate of a registered broker-dealer. Mr. Haslinger has represented that he acquired his shares in the ordinary course of business and, at the time of the acquisition of the shares, had no agreements or understandings, directly or indirectly, with any person to distribute the shares.

Description of Common Stock

General Matters

The Company's Board of Directors is authorized to issue up to 100,000,000 shares of Common Stock, from time to time, as provided in a resolution or resolutions adopted by the Board of Directors.

Common Stock

As of March 13, 2012, 71,625,725 shares of our Common Stock were issued and outstanding, held by approximately 2,800 stockholders of record, not including beneficial holders whose shares are held in names other than their own.

Dividends, Voting Rights and Liquidation

Holders of Common Stock are entitled to one vote for each share held of record on all matters submitted to a vote of the shareholders and do not have cumulative voting rights. Holders of Common Stock are entitled to receive ratably such dividends, if any, as may be declared from time to time by our Board of Directors out of funds legally available for dividend payments. All outstanding shares of Common Stock are fully paid and non-assessable. The holders of Common Stock have no preferences or rights of conversion, exchange, pre-emption or other subscription rights. There are no redemption or sinking fund provisions applicable to the Common Stock. In the event of any liquidation, dissolution or winding-up of our affairs, holders of Common Stock will be entitled to share ratably in our assets that are remaining after payment or provision for payment of all of our debts and obligations. The rights, preferences and privileges of Common Stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock currently outstanding or which may designate and issue in the future.

Preferred Stock

General Matters

Under our Third Amended and Restated Certificate of Incorporation (the "Certificate of Incorporation"), we have the authority to issue up to 15,000,000 shares of preferred stock, $0.01 par value per share ("Preferred Stock"), issuable in specified series and having specified voting, dividend, conversion, liquidation, and other rights and preferences as our Board of Directors may determine, subject to limitations set forth in our Certificate of Incorporation. The Preferred Stock may be issued for any lawful corporate purpose without further action by our stockholders. The issuance of any Preferred Stock having conversion rights might have the effect of diluting the interests of our other stockholders. In addition, shares of Preferred Stock could be issued with rights, privileges and preferences which would deter a tender or exchange offer or discourage the acquisition of control of the Company.

Series A Convertible Preferred Stock

Of the number of shares of Preferred Stock authorized by or Certificate of Incorporation, as of March 13, 2012, 3,879,307 shares had been designated Series A Convertible Preferred Stock with such rights, privileges and preferences as set forth in the Certificate of Designation of Series A Convertible Preferred Stock and filed with the Secretary of State of the State of Delaware on December 28, 2011 (the "Certificate of Designation"). As of March 13, 2012, 2,586,205 shares of the Series A Convertible Preferred Stock (the "Series A Preferred") were issued and outstanding.

Certain rights of the holders of the Series A Preferred are senior to the rights of the holders of our Common Stock. The Series A Preferred has a liquidation preference equal to its original price per share, plus any accrued and unpaid dividends thereon. The Series A Preferred accrues cumulative dividends at the rate of 10.0% of the original price per share per annum.

All outstanding shares of Series A Preferred will be automatically converted into Common Stock, at an initial conversion rate of 4:1, at the election of the holders of a majority of the then-outstanding shares of Series A Preferred. At any time following the fifth anniversary of the original issue date, the holders of a majority of the then-outstanding Series A Preferred, voting together as a separate class, can require the Company to redeem all of the then-outstanding Series A Preferred at a price equal to the then-current stated value of such shares plus all accrued but unpaid dividends thereon. The initial conversion rate for the Series A Preferred is subject to adjustment in the event of certain stock splits, stock dividends, mergers, reorganizations, reclassifications, and dilutive issuances.

The Certificate of Designation provides that the holders of Series A Preferred shall be entitled, as a separate voting group, at each annual or special election of directors, to elect two directors of the Company.

Generally, the holders of the Series A Preferred are entitled to vote together as a single group with the holders of Common Stock on an as-converted basis. However, the Certificate of Designation provides that we will not perform the following activities, subject to certain exceptions, without the affirmative vote of a majority of the holders of the outstanding shares of Series A Preferred:

- authorize, create or issue any other class or series of capital stock having rights, preferences or privileges senior to or in parity with the Series A Preferred;
- alter or change the rights, preferences or privileges of the Series A Preferred or increase or decrease the authorized number of shares of Series A Preferred;
- authorize or declare any dividends on the common shares or any other shares of capital stock other than the Series A Preferred;
- authorize any offering of equity securities of the Company representing (on a pro forma basis after giving effect to the issuance of such equity securities) the right to receive not less than 10% of any amounts or funds that would, as of immediately following such issuance, be legally available for distribution in connection with a liquidation event;

- redeem any shares of capital stock (other than pursuant to employee agreements or the terms of the capital stock);

- increase or decrease the authorized number of members of the Board;

- enter into any binding agreement with any director, employee or any affiliate of the Company;

- materially change the nature of the Company's business, enter into new lines of business or exit the current line of business or invest in any person or entity engaged in a business that is not substantially similar to the Company's business, or change the location of any permanent location of any part of the Company's business, in each case except as contemplated by the Asset Purchase Agreement dated as of November 29, 2010, by and among PGxHealth, LLC, Clinical Data, Inc. and Transgenomic (the "Purchase Agreement") or any of the transaction documents included therein;

- make any loans or advances, individually or in the aggregate in excess of $1,000,000, to, or own any securities of, any subsidiary or other corporation or other entity unless it is wholly owned by the Company;

- make any loan or advance to any natural person, including, without limitation, any employee or director of the Company, except advances and similar expenditures in the ordinary course of business;

- guarantee, directly or indirectly, any indebtedness, except for trade accounts of the Company arising in the ordinary course of business;

- sell or otherwise dispose of any assets of the Company with a value, individually or collectively, in excess of $500,000, other than in the ordinary course of business;

- liquidate or wind-up the business and affairs of the Company or effect a change in control or any other liquidation event;

- incur any indebtedness in excess of $1,000,000 in the aggregate, other than trade credit incurred in the ordinary course of business or as contemplated by the Purchase Agreement;

- expend funds in excess of $500,000 in the aggregate per year for capital improvements, other than any such expenditure that is consistent with a budget approved by the Board, including the directors elected by the holders of Series A Preferred or as contemplated by the Purchase Agreement;

- obligate the Company to make aggregate annual payments in excess of $500,000 or sell, transfer or license any material technology or intellectual property of the Company, other than a non-exclusive license in the ordinary course

of business, in each case except as contemplated by the Purchase Agreement; or

- increase the number of shares reserved and issuable under any of the Company's equity or option incentive compensation plans.

Anti-Takeover Effects Under Section 203 of the Delaware General Corporation Law

We are subject to Section 203 of the Delaware General Corporation Law, which prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years after the date that such stockholder became an interested stockholder, with the following exceptions:

- before such date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;

- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction began, excluding for purposes of determining the voting stock outstanding (but not the outstanding voting stock owned by the interested stockholder) those shares owned (i) by persons who are directors and also officers and (ii) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or an exchange offer; or

- on or after such date, the business combination is approved by our board of directors and authorized at an annual or a special meeting of the stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock that is not owned by the interested stockholder.

In general, Section 203 defines "business combination" to include the following:

- any merger or consolidation involving the corporation or any direct or indirect majority owned subsidiary of the corporation and the interested stockholder or any other corporation, partnership, unincorporated association, or other entity if the merger or consolidation is caused by the interested stockholder and as a result of such merger or consolidation the transaction is not excepted as described above;

- any sale, transfer, pledge, or other disposition (in one transaction or a series) of 10% or more of the assets of the corporation involving the interested stockholder;

- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;

- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock or any class or series of the corporation beneficially owned by the interested stockholder; or

- the receipt by the interested stockholder of the benefit of any loss, advances, guarantees, pledges, or other financial benefits by or through the corporation.

In general, Section 203 defines an "interested stockholder" as an entity or a person who, together with the person's affiliates and associates, beneficially owns, or within three years prior to the time of determination of interested stockholder status did own, 15% or more of the outstanding voting stock of the corporation.

A Delaware corporation may "opt out" of these provisions with an express provision in its original certificate of incorporation or an express provision in its certificate of incorporation or bylaws resulting from a stockholders' amendment approved by at least a majority of the outstanding voting shares. We have not opted out of these provisions. As a result, mergers or other takeover or change in control attempts of us may be discouraged or prevented.

Anti-Takeover Effects Under Certain Provisions of our Certificate of Incorporation and Bylaws

Our Certificate of Incorporation and our Amended and Restated Bylaws ("Bylaws") include a number of provisions that may have the effect of deterring hostile takeovers or delaying or preventing changes in control or management of the Company.

First, our Certificate of Incorporation provides that all stockholder actions must be effected at a duly called meeting of holders and not by a consent in writing.

Second, our Bylaws provide that special meetings of the holders may be called only by the chairman of the Board of Directors, the Chief Executive Officer or our Board of Directors pursuant to a resolution adopted by a majority of the total number of authorized directors.

Third, our Certificate of Incorporation provides that our Board of Directors can issue up to 15,000,000 shares of Preferred stock, as described under "Preferred Stock" above.

Fourth, our Certificate of Incorporation and the Bylaws provide for a classified Board of Directors in which approximately one-third of the directors would be elected each year. Consequently, any potential acquirer would need to successfully complete two proxy contests in order to take control of the Board of Directors. As a result of the provisions of the Certificate of Incorporation and Delaware law, stockholders will not be able to cumulate votes for directors.

Fifth, our Certificate of Incorporation prohibits a business combination with an interested stockholder without the approval of the holders of 75% of all voting shares and the vote of a majority of the voting shares held by disinterested stockholders, unless it has been approved by a majority of the disinterested directors.

Finally, our Bylaws establish procedures, including advance notice procedures, with regard to the nomination of candidates for election as directors and stockholder proposals. These provisions of our Third Amended and Restated Certificate of Incorporation and our Amended and Restated Bylaws could discourage potential acquisition proposals and could delay or prevent a change in control or management of our company.

Warrants

In addition to the Warrants to purchase 11,000,000 of the shares of Common Stock we are registering hereunder, as of March 13, 2012, warrants to purchase 380,000 shares of Common Stock with an exercise price of $1.25 per share were outstanding, and warrants to purchase 1,293,102 shares of Series A Preferred with an exercise price of $2.32 per share were outstanding. All outstanding warrants contain provisions for the adjustment of the exercise price in the event of stock dividends, stock splits, reorganizations, reclassifications or mergers. In addition, certain of the warrants contain a “cashless exercise” feature that allows the holders thereof to exercise the warrants without a cash payment to us under certain circumstances.

Listing

Our Common Stock is traded on the OTC Bulletin Board under the symbol “TBIO”.

Transfer Agent and Registrar

Wells Fargo Bank Minnesota, N.A., is the transfer agent and registrar for our Common Stock. Their address is Shareowner Services, P.O. Box 64854, St. Paul, MN 55164-0854, and their telephone number is (800) 478-9715.

United States Federal Income Tax Considerations

The following is a summary of the material U.S. federal income tax considerations relating to the purchase, ownership and disposition of the shares of the Common Stock purchased by the investor pursuant to this offering and ownership of the Warrants and exercise, lapse or disposition of the Warrants. We have based this summary upon the Internal Revenue Code of 1986, as amended (the “Code”), Treasury regulations promulgated under the Code, as amended (the “Treasury Regulations”), administrative rulings and pronouncements and judicial decisions, in each case as of the date hereof. These authorities are subject to differing interpretations and are subject to change, perhaps retroactively,

resulting in U.S. federal income tax consequences different from those discussed below. We have not sought any ruling from the Internal Revenue Service (the "IRS") with respect to the statements made and the conclusions reached in the following summary, and there can be no assurance that the IRS will agree with such statements and conclusions or that a court will not sustain any challenge by the IRS in the event of litigation.

This summary assumes that a beneficial owner will hold the Warrants or shares of the Common Stock, as the case may be, as capital assets within the meaning of section 1221 of the Code. This summary does not address the tax consequences arising under the laws of any state or local jurisdiction or non-U.S. jurisdiction or any other U.S. federal tax consequences, such as estate and gift tax consequences. In addition, this summary does not address all tax considerations that might be applicable to your particular circumstances (such as the alternative minimum tax provisions of the Code), or to certain types of holders subject to special tax rules, including, without limitation, partnerships, banks, financial institutions or other "financial services" entities, broker-dealers, insurance companies, tax-exempt organizations, regulated investment companies, real estate investment trusts, retirement plans, individual retirement accounts or other tax-deferred accounts, persons who use or are required to use mark-to-market accounting for federal income tax purposes, persons that hold the Warrants or shares of the Common Stock as part of a "straddle", a "hedge", a "conversion transaction" or other arrangement involving more than one position, U.S. holders (as defined below) that have a functional currency other than the U.S. dollar and certain former citizens or permanent residents of the United States.

If a partnership holds the Warrants or shares of the Common Stock, the tax treatment of a partner in the partnership will generally depend upon the status of the partner and the activities of the partnership. If you are a partner of a partnership holding the Warrants or shares of the Common Stock, you should consult your tax advisor.

If you are considering the purchase of the shares of the Common Stock or an investment in or the exercise or disposition of the Warrants, or permitting the Warrants to lapse unexercised, you should consult your own tax advisors concerning the U.S. federal income tax consequences to you in light of your particular facts and circumstances and any consequences arising under the laws of any state, local, foreign or other taxing jurisdiction.

As used in this discussion, a "U.S. Holder" is a beneficial owner of the Warrants or shares of the Common Stock, as applicable, that is not a partnership or entity treated as a partnership for U.S. federal income tax purposes and is:

- an individual who is a citizen or resident of the United States;
- a corporation (or other entity treated as a corporation for U.S. federal income tax purposes) created or organized in or under the laws of the United States, any state thereof or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust (i) if a court within the United States is able to exercise primary supervision over its administration and one or more U.S. persons have authority to control all substantial decisions of the trust or (ii) that has a valid election in effect under applicable Treasury Regulations to be treated as a U.S. person.

As used in this discussion, a "Non-U.S. Holder" is a beneficial owner of the Warrants or shares of the Common Stock, as applicable, that is neither a U.S. Holder nor a partnership or other entity treated as a partnership for U.S. federal income tax purposes. Special rules may apply to Non-U.S. Holders that are subject to special treatment under the Code, including controlled foreign corporations, passive foreign investment companies, U.S. expatriates, and foreign persons eligible for benefits under an applicable income tax treaty with the United States. Such Non-U.S. Holders should consult their tax advisors to determine U.S. federal, state, local and other tax consequences that may be relevant to them.

THIS DISCUSSION IS ONLY A SUMMARY OF CERTAIN MATERIAL U.S. FEDERAL INCOME TAX OF THE ACQUISITION, OWNERSHIP AND DISPOSITION OF THE COMMON STOCK AND OWNERSHIP AND EXERCISE, DISPOSITION OR LAPSE OF THE WARRANTS. IT IS NOT TAX ADVICE. EACH PROSPECTIVE INVESTOR IS URGED TO CONSULT ITS TAX ADVISOR WITH RESPECT TO THE PARTICULAR TAX CONSEQUENCES TO SUCH INVESTOR, INCLUDING THE APPLICABILITY AND EFFECT OF ANY LOCAL, AND NON-U.S. TAX LAWS, AS WELL AS U.S. FEDERAL TAX LAWS, AND ANY APPLICABLE TAX TREATIES.

Consequences to U.S. Holders

Distributions on Common Stock. Distributions made to U.S. Holders out of our current or accumulated earnings and profits, as determined for U.S. federal income tax purposes, will be included in the income of a U.S. Holder as dividend income and will be subject to tax as ordinary income. Dividends received by an individual U.S. Holder in taxable years beginning before January 1, 2013 that constitute "qualified dividend income" are generally subject to tax at a maximum rate of 15%, provided that certain holding period and other requirements are met. After December 31, 2012, higher income tax rates will apply unless further legislative action is taken. Dividends received by a corporate U.S. Holder, except as described in the next subsection, generally will be eligible for the 70% dividends-received deduction.

Distributions in excess of our current and accumulated earnings and profits will not be taxable to a U.S. Holder to the extent that the distributions do not exceed the U.S. Holder's adjusted tax basis in the stock to which such distribution relates, but rather will reduce the adjusted tax basis of such shares. To the extent that distributions in excess of our current and accumulated earnings and profits exceed the U.S. Holder's adjusted tax basis in the shares of stock to which the distribution relates, such distributions will generally be treated as the sale or exchange of such stock, resulting in capital gain. See "-Sale, Exchange or other Taxable Disposition" below. In addition, a corporate U.S. Holder will not be entitled to the dividends-received deduction on this portion of a distribution.

We will notify holders of our shares after the close of our taxable year as to the portions of the distributions attributable to that year that constitute ordinary income, qualified dividend income and non-dividend distributions, if any.

Limitations on Dividends-Received Deduction. A corporate U.S. Holder may not be entitled to take the 70% dividends-received deduction in all circumstances. Prospective corporate investors in our Common Stock should consider the effect of:

- Section 246A of the Code, which reduces the dividends-received deduction allowed to a corporate U.S. Holder that has incurred indebtedness that is "directly attributable" to an investment in portfolio stock;
- Section 246(c) of the Code, which, among other things, disallows the dividends-received deduction in respect of any dividend on a share of stock that is held for less than the minimum holding period (generally, for Common Stock, at least 46 days during the 90 day period beginning on the date which is 45 days before the date on which such share becomes ex-dividend with respect to such dividend); and

- Section 1059 of the Code, which, under certain circumstances, reduces the basis of stock for purposes of calculating gain or loss in a subsequent disposition by the portion of any "extraordinary dividend" (as defined below) that is eligible for the dividends-received deduction.

Extraordinary Dividends. A corporate U.S. Holder will be required to reduce its tax basis (but not below zero) in our Common Stock by the non-taxed portion of any "extraordinary dividend" if the stock was not held for more than two years before the earliest of the date such dividend is declared, announced, or agreed. Generally, the non-taxed portion of an extraordinary dividend is the amount excluded from income by operation of the dividends-received deduction. An extraordinary dividend generally would be a dividend that:

- equals or exceeds 5% of the corporate U.S. Holder's adjusted tax basis in the stock to which the dividend relates, treating all dividends having ex-dividend dates within an 85 day period as one dividend; or
- exceeds 20% of the corporate U.S. Holder's adjusted tax basis in the stock, treating all dividends having ex-dividend dates within a 365 day period as one dividend.

In determining whether a dividend paid on stock is an extraordinary dividend, a corporate U.S. Holder may elect to substitute the fair market value of the stock for its tax basis for purposes of applying these tests if the fair market value as of the day before the ex-dividend date is established to the satisfaction of the Secretary of the Treasury. An extraordinary dividend also includes any amount treated as a dividend in the case of a redemption that is either non-pro rata as to all stockholders or in partial liquidation of the corporation, regardless of the stockholder's holding period and regardless of the size of the dividend. Any part of the non-taxed portion of an extraordinary dividend that is not applied to reduce the corporate U.S. Holder's tax basis as a result of the limitation on reducing its basis below zero would be treated as capital gain and would be recognized in the taxable year in which the extraordinary dividend is received.

Corporate U.S. Holders should consult with their own tax advisors with respect to the possible application of the extraordinary dividend provisions of the Code to the ownership or disposition of the Warrants or the Common Stock in their particular circumstances.

Sale, Exchange, or other Taxable Disposition of Common Stock. Upon the sale, exchange, or other taxable disposition of Common Stock, a U.S. Holder generally will recognize gain or loss equal to the difference between the amount realized upon the sale, exchange, or other taxable disposition and the U.S. Holder's adjusted tax basis in such shares. The amount realized by the U.S. Holder will include the amount of any cash and the fair market value of any other property received upon the sale, exchange, or other taxable disposition of such shares. A U.S. Holder's tax basis in a share generally will be equal to the cost of the share to such U.S. Holder, which may be adjusted for certain subsequent events (for example, if the U.S. Holder receives a non-dividend distribution, as described above). Gain or loss realized on the sale, exchange, or other taxable disposition of Common Stock generally will be capital gain or loss and will be long-term capital gain or loss if the shares have been held for more than one year. Net long-term capital gain recognized by an individual U.S. Holder before January 1, 2013 generally is subject to tax at a maximum rate

of 15%, which such maximum rate is scheduled to increase to 20% after December 31, 2012. For corporate U.S. Holders, capital gain is generally subject to the same tax rate as ordinary income, that is, currently at a maximum rate of 35%. The ability of U.S. Holders to deduct capital losses is subject to limitations under the Code.

Taxation of the Warrants. A warrant is an option granted by an issuer of stock to acquire stock at a set price within a specified period. Warrants are generally taxed in the same manner as options. If you exercise a warrant, you will not recognize any gain or loss for U.S. federal income tax purposes (except that gain or loss will be recognized to the extent you receive cash in lieu of a fractional common share as if you had actually received the fractional share and the fractional share was immediately redeemed for cash). Your initial tax basis in the security received upon exercise will be the sum of the exercise price paid and your adjusted tax basis in the warrant (excluding any portion of such sum allocable to a fractional share), and your holding period for the security received will begin on the day you exercise the warrant. If you sell or exchange a warrant, you will generally recognize gain or loss equal to the difference between the amount realized in the sale or exchange and your adjusted tax basis in the warrant sold or exchanged. If the warrant expires unexercised, you will recognize a loss in an amount equal to your adjusted tax basis in the warrant. Any such gain or loss from the sale, exchange or expiration of the Warrants will be capital gain or loss and will be long-term capital gain or loss if your holding period for the Warrants exceeds one year at the time of the sale, exchange or expiration.

U.S. Holders should consult with their own tax advisors regarding the U.S. federal income tax consequences and the tax consequences of any other taxing jurisdiction relating to the ownership and exercise, disposition or lapsing of the Warrants in light of their investment or tax circumstances.

Information Reporting and Backup Withholding. In general, information reporting will apply to distributions in respect of stock and the proceeds from the sale, exchange or other disposition of stock that are paid to a U.S. holder within the United States (and in certain cases, outside the United States), unless the holder is an exempt recipient.

In general, backup withholding (currently at the rate of 28%, but scheduled to increase to 31% for payments made after December 31, 2012) will apply to payments received by a U.S. Holder with respect to shares of our Common Stock unless the U.S. Holder is (i) a corporation or other exempt recipient and, when required, establishes this exemption or (ii) provides its correct taxpayer identification number, certifies that it is not currently subject to backup withholding tax and otherwise complies with applicable requirements of the backup withholding tax rules. A U.S. Holder that does not provide us with its correct taxpayer identification number might be subject to penalties imposed by the IRS.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules from a payment to a U.S. Holder may be refunded or credited against the U.S. Holder's U.S. federal income tax liability, if any, provided that the required information is furnished to the IRS in a timely manner.

Medicare Tax on Investment Income. On March 30, 2010, President Obama signed into law the Health Care and Education Reconciliation Act of 2010. This legislation requires certain individuals, estates and trusts to pay a 3.8% Medicare surtax on "net investment income" including, among other things, dividends and gain on sale in respect of securities like the Warrants or shares of our Common Stock, subject to certain exceptions, for taxable years beginning after December 31, 2012. Prospective purchasers of the Warrants or shares of our Common Stock should consult their own tax advisors regarding the effect, if any, of the legislation on their ownership and disposition of the Warrants or shares of our Common Stock.

Consequences to Non-U.S. Holders

Distributions on Common Stock. Any distribution we make to a Non-U.S. Holder of shares of our Common Stock, other than certain pro rata distributions of Common Stock, to the extent paid out of our current or accumulated earnings and profits (as determined under U.S. federal income tax principles), will constitute a dividend for U.S. federal income tax purposes. Any distribution not constituting a dividend will be treated for U.S. federal income tax purposes as a tax-free return of capital to the extent of the Non-U.S. Holder's adjusted tax basis in its shares of our Common Stock (with a corresponding reduction to such basis), and, to the extent such distribution exceeds the Non-U.S. Holder's adjusted tax basis, as gain from the sale or other disposition of the Common Stock, which will be treated as described under "Sale, Exchange, or other Taxable Disposition" below.

Generally, any distribution to a Non-U.S. Holder that is a dividend for U.S. federal income tax purposes and that is not effectively connected with the Non-U.S. Holder's conduct of a trade or business within the Unites States, as described below, will be subject to U.S. federal withholding tax at a rate of 30% percent of the gross amount of the dividend, unless such Non-U.S. Holder is eligible for a reduced rate of withholding tax under an applicable income tax treaty and provides proper certification of its eligibility for such reduced rate (usually on an IRS Form W-8BEN). If the Non-U.S. Holder holds the stock through a financial institution or other agent acting on the Non-U.S. Holder's behalf, the Non-U.S. Holder will be required to provide appropriate documentation to the agent, who then will be required to provide certification to us or our paying agent, either directly or through other intermediaries. If U.S. federal income tax is withheld on the amount of a distribution in excess of the amount constituting a dividend, the Non-U.S. Holder may obtain a refund of all or a portion of the excess amount withheld by timely filing a claim for refund with the IRS. If a Non-U.S. Holder holds shares of our Common Stock in connection with a trade or business in the United States, dividends we pay to a Non-U.S. Holder that are effectively connected with such Non-U.S. Holder's conduct of a trade or business within the United States (or, if certain income tax treaties apply, are attributable to a U.S. permanent establishment or fixed base maintained by the Non-U.S. Holder) generally will not be subject to U.S. withholding tax, provided such Non-U.S. Holder complies with certain certification and disclosure requirements (usually by providing an IRS Form W-8ECI). Instead, such dividends generally will be subject to U.S. federal income tax, net of certain deductions, at the same graduated individual or corporate tax rates applicable to U.S. persons. If the Non-U.S. Holder is a foreign corporation, dividends that are effectively connected income may also be subject to a "branch profits tax" at a rate of 30% (or such lower rate as may be specified by an applicable income tax treaty) of its effectively connected earnings and profits for the taxable year, as adjusted for certain items. Non-U.S. Holders should consult any applicable income tax treaties that may provide for different rules.

A Non-U.S. Holder who claims the benefit of an applicable income tax treaty generally will be required to satisfy applicable certification and other requirements prior to the distribution date. Non-U.S. Holders should consult their tax advisors regarding their entitlement to benefits under a relevant income tax treaty.

Sale, Exchange, or other Taxable Disposition of Common Stock. A Non-U.S. Holder generally will not be subject to U.S. federal income or withholding tax on any capital gain realized on the sale, exchange, or other taxable disposition of the Warrants or our Common Stock provided that:

(a) the gain is not effectively connected with the conduct of a trade or business within the United States, or a permanent establishment maintained in the United States if certain tax treaties apply,

(b) in the case of a Non-U.S. Holder that is an individual, the Non-U.S. Holder is not present in the United States for 183 days or more in the taxable year of the sale, exchange, or other disposition of the shares,

(c) the Non-U.S. Holder is not subject to tax pursuant to certain provisions of U.S. federal income tax law applicable to certain expatriates, and

(d) we are not nor have we been a "United States real property holding corporation" ("USRPHC") for U.S. federal income tax purposes.

Unless an applicable tax treaty provides otherwise, gain described in the (a) or (d) above generally will be subject to U.S. federal income tax, net of certain deductions, at the same tax rates applicable to U.S. persons. Any gains described in (a) above of a Non-U.S. Holder that is a foreign corporation may also be subject to an additional "branch profits tax" at a rate of 30% (or such lower rate as may be specified by an applicable income tax treaty) of its effectively connected earnings and profits for the taxable year, as adjusted for certain items. Any U.S. source capital gain of a Non-U.S. Holder described in (b) above (which may be offset by U.S. source capital losses during the taxable year of the disposition provided that the Non-U.S. Holder has timely filed U.S. federal income tax returns with respect to such losses) generally will be subject to a flat 30% U.S. federal income tax (or such lower rate as may be specified by an applicable income tax treaty).

With respect to (d) above, we would not be treated as a USRPHC if less than 50% of our assets throughout a prescribed testing period consist of interests in real property located within the United States, excluding, for this purpose, interests in real property solely in a capacity as a creditor. We believe that we are not currently, and do not anticipate becoming, a "United States real property holding corporation" for U.S. federal income tax purposes **.** However, even if we are or have been a USRPHC, so long as our Common Stock is regularly traded on an established securities market, a Non-U.S. Holder will not recognize taxable gain, if any, on a sale, exchange, redemption, conversion or other taxable disposition of the Common Stock or Warrants under (d) above unless:

- the Non-U.S. Holder recognizes gain on the sale, exchange, redemption, conversion or other taxable disposition of our Common Stock which is regularly traded, and actually or constructively owns more than 5% of our Common Stock at any time during the five-year period ending on the date of disposition or, if shorter, the Non-U.S. Holder's holding period for the Common Stock;

- the Non-U.S. Holder recognizes gain on the sale, exchange, redemption, conversion or other taxable disposition of the Warrants, the Warrants are considered to be regularly traded on an established securities market, and the Non-U.S. Holder actually or constructively owns more than 5% of such Warrants at any time during the five-year period ending on the date of disposition or, if shorter, the Non-U.S. Holder's holding period for the Warrants; or
- the Non-U.S. Holder recognizes gain on the sale, exchange, redemption, conversion or other taxable disposition of the Warrants, the Warrants are not considered to be regularly traded on an established securities market, and, as of the latest date that the Non-U.S. Holder acquired any of the Warrants, the fair market value of all Warrants held by the Non-U.S. Holder, directly or indirectly, had a fair market value greater than 5% of the fair market value of our Common Stock.

If any of the three bullet points immediately described above applies to a Non-U.S. Holder of our Warrants or Common Stock, then the gain recognized by a Non-U.S. Holder on the sale, exchange, redemption, conversion, if applicable, or other disposition of such would be treated as effectively connected with a U.S. trade or business if we are a USRPHC. In such situations, the Non-U.S. Holder would be subject to U.S. federal income tax at applicable graduated U.S. federal income tax rates in much the same manner as applicable to U.S. persons and may be subject to withholding tax at a 10% rate with respect to the gross proceeds realized with respect to the sale, exchange, redemption, conversion or other disposition of the Warrants or our Common Stock. Non-U.S. Holders are urged to consult their own tax advisors in determining the U.S. tax consequences of their investment in the Warrants or our Common Stock.

Taxation of the Warrants. If you exercise a Warrant, you will not recognize any gain or loss for U.S. federal income tax purposes (except that gain or loss will be recognized to the extent you receive cash in lieu of a fractional common share as if you had actually received the fractional share and the fractional share was immediately redeemed for cash). Your initial tax basis in the security received upon exercise will be the sum of the exercise price paid and your adjusted tax basis in the warrant (excluding any portion of such sum allocable to a fractional share), and your holding period for the security received will begin on the day you exercise the warrant or subscription right. If you sell or exchange a warrant, you will generally recognize gain or loss equal to the difference between the amount realized in the sale or exchange and your adjusted tax basis in the warrant sold or exchanged. If the warrant expires unexercised, you will recognize a loss in an amount equal to your adjusted tax basis in the warrant at such time. Any such gain or loss from the sale, exchange or expiration of the Warrants will be capital gain or loss and will be long-term capital gain or loss if your holding period for the Warrants exceeds one year at the time of the sale, exchange or expiration. Non-U.S. Holders of Warrants should see the discussion above under “Distributions on Common Stock” and “Sale, Exchange, or other Taxable Disposition of Common Stock” and should consult their own tax advisers with respect to the United States federal income tax and withholding tax, and state, local and foreign tax consequences of ownership and exercise, disposition or lapsing, of the Warrants.

Information Reporting and Backup Withholding. We generally must report annually to the IRS and to each Non-U.S. Holder the amount of dividends and certain other distributions we pay to such holder on our Common Stock and the amount of tax, if any, withheld with respect to those distributions. Copies of the information returns reporting those distributions and withholding may also be made available to the tax authorities in the country in which the Non-U.S. Holder is a resident under the provisions of an applicable income tax treaty or agreement. Information reporting is also generally required with respect to proceeds from the sales and other dispositions of our Common Stock to or through the United States office (and in certain cases, the foreign office) of a broker.

In addition, backup withholding of U.S. federal income tax, currently at a rate of 28%, generally will apply to distributions made on our Common Stock to, and the proceeds from sales and other dispositions of our Common Stock by, a non-corporate U.S. holder who:

- fails to provide an accurate taxpayer identification number;
- is notified by the IRS that backup withholding is required; or
- in certain circumstances, fails to comply with applicable certification requirements.

A Non-U.S. Holder generally may eliminate the requirement for information reporting and backup withholding with respect to payments of dividends by providing certification of its foreign status, under penalties of perjury, on a duly executed applicable IRS Form W-8 or by otherwise establishing an exemption. Notwithstanding the foregoing, backup withholding may apply if either we or our paying agent has actual knowledge or reason to know that the holder is a United States person that is not an exempt recipient.

Backup withholding is not an additional tax. Rather, the amount of any backup withholding will be allowed as a credit against a U.S. holder's or a Non-U.S. Holder's U.S. federal income tax liability and may entitle such holder to a refund, provided that certain required information is timely furnished to the IRS. Holders are urged to consult their own tax advisors regarding the application of backup withholding and the availability of and procedure for obtaining an exemption from backup withholding in their particular circumstances.

Foreign Financial Institutions. On March 18, 2010, President Obama signed into law the Hiring Incentives to Restore Employment Act (the "Act"). The Act imposes withholding taxes on certain types of payments made to "foreign financial institutions" (as specifically defined in the Act) and certain other non-United States entities (including financial intermediaries) after December 31, 2012. The Act imposes a 30% withholding tax on "withholdable payments" to a foreign financial institution or to a foreign non-financial entity, unless (i) the foreign financial institution undertakes certain diligence and reporting obligations or (ii) the foreign non-financial entity either certifies it does not have any substantial United States owners or furnishes identifying information regarding each substantial United States owner. For these purposes, a "withholdable payment" includes any United States source payments of interest (including original issue discount), dividends, rents, compensation and other fixed or determinable annual or periodical gains, profits and income. If the payee is a foreign financial institution, it must enter into an agreement with the United States Department of the Treasury requiring, among other things, that it undertake to identify accounts held by certain United States persons or United States-owned foreign entities, annually report certain information about such accounts, and withhold 30% on payments to account holders whose actions prevent it from complying with these reporting and other requirements. Although this legislation currently applies to applicable payments made after December 31, 2012, recently issued Proposed Treasury Regulations provide that the withholding provisions described above will generally apply to payments of dividends on our Common Stock made on or after January 1, 2014 and to payments of gross proceeds from a sale or other disposition of such stock on or after January 1, 2015. Prospective purchasers of shares of the Warrants or shares of our Common Stock should consult their tax advisors regarding this legislation and the potential implications of this legislation on their particular circumstances.

Legal Matters

The validity of our Common Stock offering hereby will be passed upon by Husch Blackwell LLP.

Experts

The audited consolidated financial statements of Transgenomic, Inc. and its subsidiaries as of December 31, 2011 and 2010, and for the three-year period ended December 31, 2011, included in our Annual Report on Form 10-K for the year ended December 31, 2011, and the effectiveness of our internal control over financial reporting as of December 31, 2011, incorporated by reference in this prospectus have been audited by McGladrey & Pullen, LLP, independent registered public accounting firm, as stated in their report dated March 20, 2012, which is incorporated by reference herein, and has been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

Where You Can Find Additional Information

We file annual, quarterly and current reports, proxy statements and other documents with the SEC. These filings contain important information which does not appear in this prospectus. You may read and copy, at prescribed rates, any documents we have filed with the SEC at its Public Reference Room located at 100 F Street, N.E., Washington, DC 20549. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. We also file these documents with the SEC electronically. You can access the electronic versions of these filings on the SEC's website found at http://www.sec.gov .

We have filed with the SEC a registration statement on Form S-1 relating to the securities covered by this prospectus. This prospectus is a part of the registration statement and does not contain all the information in the registration statement. Whenever a reference is made in this prospectus to a contract, agreement or other document, the reference is only a summary and you should refer to the exhibits that are filed with, or incorporated by reference into, the registration statement for a copy of the contract, agreement or other document. You may review a copy of the registration statement at the SEC's Public Reference Room in Washington, D.C., as well as on the SEC's website.

Incorporation of Certain Information by Reference

The SEC's rules allow us to "incorporate by reference" into this prospectus certain information that we file with the SEC. This means that we can include in this prospectus information by referring you to another document already on file with the SEC that contains that information. Any information incorporated by reference into this prospectus is considered to be part of this prospectus.

We incorporate by reference the following documents filed with the SEC:

- Our Annual Report on Form 10-K for the year ended December 31, 2011, as filed by us with the SEC on March 14, 2012;
- Our Current Report on Form 8-K as filed by us with the SEC on January 6, 2012;
- Our Current Report on Form 8-K as filed by us with the SEC on February 3, 2012; and
- Our Current Report on Form 8-K as filed by us with the SEC on February 7, 2012.

Notwithstanding the foregoing, we are not incorporating by reference any information furnished and not filed with the SEC, unless, and to the extent, expressly specified otherwise. Any statement contained in a document incorporated in this prospectus shall be deemed to be modified or superseded to the extent that a statement contained in this prospectus modifies or supersedes such statement. Any such statement so modified or superseded shall only be deemed to be a part of this prospectus as so modified or superseded.

We will provide without charge to each person, including any beneficial owner, to whom this prospectus is delivered, upon his or her written or oral request, a copy of any or all of the reports or documents referred to above that have been incorporated by reference into this prospectus, excluding exhibits to those documents unless they are specifically incorporated by reference into those documents. You may request a copy of these filings, at no cost, by contacting:

Transgenomic, Inc.
Attn: Investor Relations
12325 Emmet Street
Omaha, NE 68164
Phone: (402) 452-5416
Fax: (402) 452-5461
E-mail: investorrelations@transgenomic.com

You also may access these filings on our website at www.transgenomic.com under Investor Relations Real Time Filings. We do not incorporate the information on our website into this prospectus or any supplement to this prospectus and you should not consider any information on, or that can be accessed through, our website as part of this prospectus or any supplement to this prospectus (other than those filings with the SEC that we specifically incorporate by reference into this prospectus or any supplement to this prospectus).

33,000,000 SHARES OF COMMON STOCK

TRANSGENOMIC, INC.

PROSPECTUS

April 6, 2012

Neither we nor the selling shareholders have authorized any dealer, salesperson or other person to give any information or to make any representations not contained in this prospectus or any prospectus supplement. You must not rely on any unauthorized information. This prospectus is not an offer to sell these securities in any jurisdiction where an offer or sale is not permitted. The information in this prospectus is current as of the date of this prospectus. You should not assume that this prospectus is accurate as of any other date.