

## TRANSGENOMIC, INC. (OTCBB: TBIO)

We are updating coverage on Transgenomic, Inc. (OTCBB: TBIO) with a BUY rating and a 12-month price target of \$4.50 for TBIO shares for the following reasons:

- ❑ The Company is advancing the analysis of DNA and RNA at the molecular level, making it possible to detect disease more accurately at earlier stages, bringing improvements in the quality of patient care and lowering the costs of disease management;
- ❑ On December 29, 2010, Transgenomic announced the closing of an acquisition of Clinical Data, Inc.'s (NasdaqGM: CLDA) diagnostic business. This is a transformative acquisition for Transgenomic that:
  - Brings a well-established and growing molecular diagnostic business, substantial revenue, and pipeline opportunities in oncology and cardiology; and
  - Improves TBIO's competitive position, expanding TBIO's commercialized portfolio with 11 proprietary genetic tests for inherited heart diseases and provides established contracts with private and government health insurers for test reimbursement with coverage policies that offer access to genetic testing for an estimated 280 million patients.
- ❑ Strategic investment by leading life-sciences investment firm – Third Security and one of the world's leading investors, R J Kirk, is beneficial to expansion and growth plans;
- ❑ Ultra high-sensitivity COLD-PCR technology assays and kits in development for companion diagnostics have the potential to be transformative for the diagnostics industry by finding cancer much earlier than currently possible; and
- ❑ Our valuation approaches estimate the value of TBIO's shares to be in the \$4.08 to \$5.32 range, approximately 4.5 to 6.2x higher than the current market value, after adjusting for potential dilution from the recent convertible preferred financing. Accordingly, we are establishing a new 12-month price target of \$4.50 for TBIO shares.

Transgenomic, Inc. (OTCBB: TBIO) develops and markets molecular diagnostic technologies, tests, and services for oncology, cardiology, hematology, inherited disorders, and diseases of aging.

### Menu of Diagnostic Tests, Technologies, and Services:

#### **Commercialized**

- Genetic Testing & Molecular Laboratory Services
- Genetic Analysis Technologies and Systems
- Pharmacogenomics Service Business

#### **In Development**

- Cold-PCR Technologies for Companion Diagnostics
- New Scan Kits in Key Cancer Pathway Gene Mutations
- Mitochondrial DNA Damage Assays
- Fc Gamma Receptor (FCGR) Oncology Tests
- Clopidogrel (Plavix®) Response Test

Share Price (1/7/11)	\$0.74
52-Week Price Low / High	\$0.33 – \$0.90
Mkt. Capitalization (issued)	\$36.5 M
Shares Outstanding (issued)	49.29 M
12-month Target Price	\$4.50
Cash & Equiv. (9/30/10)	\$4.6 M
Estimated Mos. of Cash	N/A
Fiscal Year Ends	Dec. 31 <sup>st</sup>
Website	Transgenomic.com

#### 12-Month Price Chart



Source: BigCharts.com

**CHRYSTYNA BEDRIJ**

212-509-9500  
 CBEDRIJ@GRIFFINSECURITIES.COM

**MARK MERRILL**

646-442-1441  
 MMERRILL@GRIFFINSECURITIES.COM

**KEITH MARKEY, PH.D.**

212-514-7914  
 KMARKEY@GRIFFINSECURITIES.COM

## ACQUISITION HIGHLIGHTS

- ❑ **TBIO ACQUIRES DIAGNOSTICS BUSINESS FROM CLINICAL DATA, INC.** On December 29, 2010, TBIO announced that it closed the acquisition of Clinical Data's genetic testing and biomarker development business at a purchase price of approximately \$15.4 million. The acquired assets include: the *FAMILION*® family of 11 commercialized proprietary tests; contracts with private and government health insurers, as well as commercial payors, for test reimbursement with coverage policies that offer access to genetic testing for an estimated 280 million patients; established ACC/AHA/ESC guidelines, as well as the Heart Failure Society of America guidelines, that include genetic testing that can be identified by *FAMILION*® tests that detect genetic mutations that cause cardiac channelopathies or cardiomyopathies; pipeline opportunities that include the Fc gamma receptor (FCGR) family of oncology tests and a clopidogrel response test; marketing resources; testing and customer service capabilities; intellectual property and rights; a fully integrated commercial CLIA-Certified Laboratory located in New Haven, Connecticut; and equipment. The purchase price of \$15.4 million consists of \$6 million in cash, \$8.5 million in a three-year note bearing an interest of 10% per annum with a principal repayment schedule beginning in May 2012 and \$932,000 in a one-year note bearing interest at 6.5%. Additionally, Clinical Data will receive milestone and royalty payments on the successful development and commercialization of multiple new products. Concurrent with the acquisition, TBIO raised \$6 million through a Series A convertible preferred equity investment from Third Security, LLC. The financing supports the acquisition and brings a well-respected investor to TBIO.
- ❑ **THE *FAMILION*® FRANCHISE PROVIDES AN ESTABLISHED REVENUE BASE AND SIGNIFICANT OPPORTUNITY FOR GROWTH.** The key motivation is to acquire the commercialized *FAMILION*® franchise of 11 cardiology tests that are already on the market as the established brand leader for tests detecting inherited cardiac conditions. The *FAMILION*® franchise has established a revenue base with reported gross revenue of \$15.3 million for the 12-months ended September 30, 2010.
- ❑ **SIGNIFICANT REIMBURSEMENT EXPERIENCE – POSITIVE COVERAGE POLICIES OFFER ACCESS TO GENETIC TESTING FOR NEARLY 280 MILLION PATIENTS.** Securing reimbursement approval and third-party payor coverage is key to the success of a diagnostic test, especially in the U.S. Importantly, significant contracts with private and government health insurers for test coverage and reimbursement are in place, which can be leveraged for TBIO's current and future test offerings. CLDA has successfully established select commercial payors with supportive coverage policies. Furthermore, ACC/AHA/ESC guidelines, as well as the Heart Failure Society of America guidelines, include genetic testing that can be identified by *FAMILION*® tests.
- ❑ **SIGNIFICANT PIPELINE OPPORTUNITIES IN ONCOLOGY AND CARDIOLOGY.** Oncology: Fc gamma receptor (FCGR) assays and cardiology: clopidogrel (Plavix®) response test in development.
- ❑ **PERSONNEL WITH EXPERIENCE AND EXPERTISE.** The acquisition provides TBIO with the advantage of experienced lab, sales, customer service, billing and marketing personnel, as well as focused biomarker R&D and genetics analysis and counseling teams.
- ❑ **ESTABLISHED STATE-OF-THE ART FACILITY AND EAST COAST OPERATIONS.** The New Haven CLIA Laboratory provides operational expertise and state-of the art lab facilities, equipment, and adds customer service capabilities. Significant synergies and cost reductions. Given the minimal product overlap, we would expect the combination to provide significant synergistic opportunities by combining sales, marketing, research, and billing & laboratory operations groups. Removing redundancies across both organizations should contribute positively to overall margins.
- ❑ **ATTRACTIVE ACQUISITION VALUATION.** Based on a discounted cash flow analysis, we arrive at a projected net present value range of \$18.4 million to \$22.7 million, using a range of discount rates of 5% to 15%, for Clinical Data's diagnostics business. Similarly, based on a genetic molecular diagnostics peer group enterprise value-to-net revenue multiple of 1.6x, we arrive at a valuation of approximately \$19.4 million using FY2011 (ended March 31, 2010) reported actual net revenue of \$12.4 million for the acquired diagnostics business.

## OTHER INVESTMENT HIGHLIGHTS

- ❑ **EXCITING BREAKTHROUGH FOR TBIO'S COLD-PCR PROGRAM WITH DANA FARBER CANCER INSTITUTE & A MAJOR ONCOLOGY PHARMACEUTICAL PARTNER FOR THE EARLIER DETECTION OF CANCER – COLD-PCR INCREASES LEVEL OF SENSITIVITY OF DETECTION 20-200 FOLD.** Using the technology to develop ultra high-sensitivity assays for the detection of low-level DNA mutation in body fluids (20-200 times more sensitive), COLD-PCR provides the ability to screen patient serum, plasma, or urine samples for the earlier detection of cancer. The impact on cancer diagnosis and improved outcomes in cancer treatment has the potential to be significant. Cold-PCR amplifies mutant DNA with minimal amplification of the normal DNA. TBIO's expectation is that COLD-PCR can be developed as a companion diagnostic for selecting the appropriate drug for patients based on testing mutations in their blood or other body fluids, rather than in the tumors directly. Along with its partners, Dana Farber Cancer Institute and a major oncology pharmaceutical, TBIO has successfully completed a development study of several new assays to detect genetic mutations in the epidermal growth factor receptor (EGFR) gene. EGFR mutations are found in a number of cancers, including lung and colorectal cancers. Several new targeted cancer therapeutics called tyrosine kinase inhibitors (TKIs) have been approved or are in clinical trials to be used as front line or secondary therapies against these cancers. The presence of mutations in certain regions of the EGFR gene is important to determining whether or not a patient should receive TKI inhibitor therapy.
- ❑ **SURVEYOR® NUCLEASE K-RAS MUTATION DETECTION KIT DECREASES SEQUENCING BURDEN IN COLORECTAL CANCERS.** The Company's KRAS mutation detection kit has shown strong performance vs. competing technologies for detecting resistance conferring mutations. Follow-on kits for several other key cancer genes are in development, including BRAF, p53, and PIK3CA. The extension of the SURVEYOR® Scan to mutation analysis in tumor suppressor genes, such as p53, in which inactivating mutations may be present in multiple exons in numerous locations, is anticipated to be of significant utility, since mutation-specific methods are not practical and sequencing requirements are onerous.
- ❑ **NEW FIRST-IN-CLASS AUTISM TEST (ARISK™ FAMILIAL AUTISM PANEL) ROLLOUT CONTINUES.** The Company's ARISK™ Familial Autism Panel determines if there is an increased risk of autism in a newborn with an autistic older biological sibling. Risk assessment via a genetic test for autism can contribute to earlier detection and intervention (up to 2 to 3 years earlier). TBIO earns revenue from performing this assay in its CLIA-certified laboratory and on future kits sales.
- ❑ **PHARMACOGENOMIC BACKLOG GROWING – WELL POSITIONED TO BENEFIT FROM PHARMACEUTICAL BIOMARKER AND PROPRIETARY COMPANION DIAGNOSTICS DEVELOPMENT.** The Company's pharmacogenomics services business continues to grow with sales up 28% versus the third quarter of last year. The pipeline of proposals submitted to pharmaceutical companies stood at \$7.0 million as of September 30, 2010, up from \$2.0 million as of March 31, 2010. We believe that TBIO is very well positioned to benefit from the growing use of biomarker discovery in the treatment of patients.

## TBIO VALUATION SUMMARY

Applying a peer group P/E multiple in the 20 to 25x range to TBIO's 2013 estimated earnings of \$0.28/share and a discount rate of 15% to 17.5%, we estimate the fully-diluted value of TBIO's shares to be in the \$4.08 to \$5.32 range, approximately 4.5 to 6.2x higher than its current market value of \$0.74/share. We forecast positive fully-diluted earnings and free cash flow (\$0.03/share and \$0.05/share, respectively) in 2011, the first full year following the acquisition, increasing to \$0.28/share and \$0.25/share, respectively, by 2013. **Based on our valuation range of \$4.08 to \$5.32/share, we are establishing a new 12-month price target of \$4.50 for TBIO shares.**

**TABLE OF CONTENTS**

**TRANSGENOMIC OVERVIEW ..... 5**

**BUSINESS MODEL ..... 5**

**KEY PRODUCTS AND PIPELINE ..... 5**

**DIAGNOSTICS BUSINESS ACQUISITION OVERVIEW ..... 6**

**FAMILION® FAMILY OF GENETIC TESTS ..... 6**

**ACQUIRED R&D PIPELINE ..... 7**

**CLOPIDOGREL (PLAVIX®) RESPONSE TEST ..... 8**

**FCGR (FC GAMMA RECEPTOR) TECHNOLOGY – ONCOLOGY DRUG RESPONSE TESTS ..... 8**

**INVESTMENT CONCERNS AND RISKS ..... 11**

**FINANCIAL ANALYSIS & VALUATION ..... 12**

**BALANCE SHEET ..... 12**

**REVENUE MODEL ..... 13**

**ANNUAL INCOME STATEMENT ..... 14**

**QUARTERLY INCOME STATEMENT ..... 15**

**CASH FLOW STATEMENT ..... 16**

**COMPARATIVE VALUATION ..... 17**

**VALUATION SUMMARY ..... 18**

**APPENDIX A: FC GAMMA RECEPTOR TECHNOLOGY EXAMPLE – RITUXIMAB TEST ..... 19**

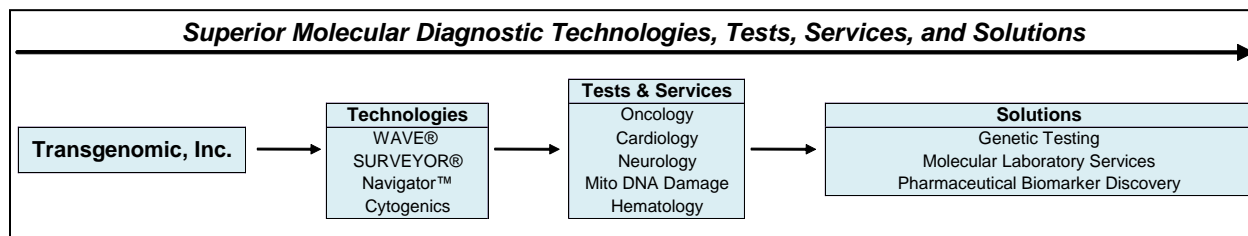
**DISCLOSURES ..... 20**

*(Intentionally left blank)*

## TRANSGENOMIC OVERVIEW

**Transgenomic, Inc. (OTCBB: TBIO)** develops and markets molecular diagnostic technologies, tests, and services for oncology, cardiology, hematology, inherited disorders, and diseases of aging. The Company is advancing the analysis of DNA and RNA at the molecular level, making it possible to detect disease more accurately at earlier stages, bringing improvements in the quality of patient care and lowering the costs of disease management.

### BUSINESS MODEL



Source: Griffin Securities, Inc.

### KEY PRODUCTS AND PIPELINE

#### Commercialized

- Genetic Testing & Molecular Laboratory Services
  - *Oncology* – Leukemia, Lung, Colon Cancer, GIST, Resistance Monitoring
  - *Cardiology* – *FAMILION®* family of genetic tests for inherited heart diseases that can cause potentially lethal heart conditions
  - *Mitochondrial Genome-Related Diseases*,
  - *Developmental Disorders* – ARISK™ Familial Autism Panel, CDKL5, MECP2, and PTEN (Autism)
  - *Epilepsy and Seizure Related Disorders*
- Technologies and systems
  - WAVE® Systems (provides highly-sensitive automated approach to genetic variant analysis)
    - WAVE® Systems Bioconsumables
  - SURVEYOR® Mutation Detection Products
  - Cytogenetics Automated Systems
- Pharmacogenomics service business
  - Pharmaceutical biomarker discovery to aid in the treatment of patients – TBIO offers services related to frequent biomarkers used in cancer trials, such as: AKT1; NRAS; PIK3CA (p110a); BRAF; PTEN; KDR (VEGFR2); KRAS: VGFR; SKT11; TP53BP1-PDGFRB; FLT1 (VEGFR1); FLT4 (VEGFR3); etc. TBIO also offers cancer diagnostic tests for blood, bone marrow, solid tumor tissue, lymph node biopsy, UroVysion, and Her2/neu.
- Mutation Detection Test Kits
  - Surveyor Scan high sensitivity mutation detection kits: KRAS

#### In Development

- Cold-PCR ultra-sensitive enrichment technologies for companion diagnostics. The technology specifically enhances amplification of mutated DNA, increasing level of sensitivity by 20 to 200 fold.
- New Mutation Detecting Test Kits – including kits targeting key cancer pathway gene mutations (such as p53, BRAF, PIK3CA). Can be combined with Cold-PCR for highly-sensitive assays for circulating DNA mutations in blood or other sample sources.
- Mitochondrial DNA damage assays – risk of cardiac events
- Fc gamma receptor oncology tests
- Clopidogrel (Plavix®) response test

## DIAGNOSTICS BUSINESS ACQUISITION OVERVIEW

Transgenomic announced on December 29, 2010, that the Company closed the acquisition of Clinical Data's diagnostic business at a purchase price of approximately \$15.4 million. Under the terms of the agreement, Transgenomic purchased the diagnostic business in its entirety, which reported gross revenue of \$15.3 million and net revenue of \$12.3 million for the four quarters ended September 30, 2010. The diagnostic business includes: the *FAMILION*® family of 11 commercialized proprietary tests; contracts with private and government health insurers, as well as commercial payors, for test reimbursement with coverage policies that offer access to genetic testing for an estimated 280 million patients; established ACC/AHA/ESC guidelines, as well as the Heart Failure Society of America guidelines, that include genetic testing that can be identified by *FAMILION*® tests that detect genetic mutations that cause cardiac channelopathies or cardiomyopathies; pipeline opportunities that include the Fc gamma receptor (FCGR) family of oncology tests and a clopidogrel response test; marketing resources; testing and customer service capabilities; intellectual property and rights; a state-of-the-art facility; and equipment.

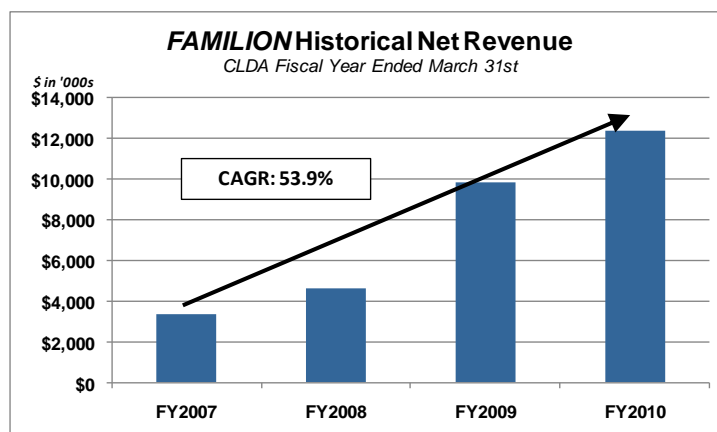
The purchase price of \$15.4 million consists of \$6 million in cash, \$8.5 million in a 3-year note bearing an interest of 10% per annum with a principal repayment schedule beginning in May 2012 and \$932,000 in a 1-year note bearing interest at 6.5%. Additionally, Clinical Data will receive milestone and royalty payments on the successful development and commercialization of multiple new products.

Concurrently with this transaction, Transgenomic announced that funds and other entities advised by Third Security, LLC, a leading private equity firm, had invested in the Company by purchasing approximately \$6 million of the Company's newly created Series A Redeemable Convertible Preferred Stock.

We believe this acquisition will create a stronger company (both operationally and financially) and a company better positioned to succeed in the dynamic and highly competitive molecular diagnostics space. We believe the acquired portfolio of commercialized tests and tests in development is synergistic with TBIO's existing molecular diagnostics business, and significant opportunities exist for TBIO to leverage the new technologies with new and existing pharmaceutical customers to drive growth in its pharmacogenomics business.

### *FAMILION*® FAMILY OF GENETIC TESTS

TBIO's key motivation for completing the acquisition is the commercialized *FAMILION*® test franchise, the established brand leader of tests to detect potentially life-threatening inherited cardiac conditions. The test franchise generated gross revenue of \$15.3 million and net revenue of \$12.4 million in CLDA's 2010 fiscal year (ended March 31, 2010) with an estimated gross profit margin of 55%. Since CLDA's 2007 fiscal year (ended March 31, 2007), net revenue has grown at a compound annual growth rate of 53.9%, from \$3.4 million to \$12.4 million (illustrated in the graph below). We expect robust revenue growth to continue as TBIO adds new tests to the franchise and maximizes operational and sales force efficiency and the gross profit margin to increase to the 65-70% range as the ratio of variable to fixed costs improves with increasing test volumes, driving TBIO's overall profitability in CY 2011.



The current *FAMILION*® portfolio includes the following 11 tests:

<b><i>FAMILION</i> LQTS</b>	The <i>FAMILION</i> ® LQTS test is comprised of five genes ( <i>KCNQ1</i> , <i>KCNH2</i> , <i>SCN5A</i> , <i>KCNE1</i> and <i>KCNE2</i> ). The <i>FAMILION</i> LQTS test will identify a mutation in approximately 75% of patients with a high index of suspicion for LQTS.
<b><i>FAMILION</i> CPVT</b>	The <i>FAMILION</i> ® CPVT test is comprised of a single gene ( <i>RYR2</i> ). The <i>FAMILION</i> CPVT Test will identify a mutation in approximately 55% of patients with a high index of suspicion for CPVT.
<b><i>FAMILION</i> BrS</b>	The <i>FAMILION</i> ® BrS test is comprised of a single gene ( <i>SCN5A</i> ). The <i>FAMILION</i> Brugada Syndrome Test will identify a mutation in approximately 25% of patients with a high index of suspicion for Brugada Syndrome.
<b><i>FAMILION</i> HCM</b>	The <i>FAMILION</i> ® HCM test is comprised of nine sarcomeric genes and three HCM mimicker genes). The <i>FAMILION</i> HCM Test will identify a mutation in approximately 50%-60% of patients with a high index of suspicion for HCM.
<b><i>FAMILION</i> ARVC</b>	The <i>FAMILION</i> ® ARVC test is comprised of five genes ( <i>PKP2</i> , <i>DSP</i> , <i>DSG2</i> , <i>DSC2</i> , and <i>TMEM43</i> ). The <i>FAMILION</i> ARVC Test will identify a mutation in approximately 40%-50% of patients with a high index of suspicion for ARVC.
<b><i>FAMILION</i> DCM</b>	The <i>FAMILION</i> ® DCM test is comprised of 12 genes most commonly associated with DCM. <i>FAMILION</i> DCM Test will also identify mutations in <i>SCN5A</i> and <i>ANKRD1</i> , two genes known to account for 5% of gene mutations in familial DCM patients.
<b><i>FAMILION</i> CD-DCM</b>	The <i>FAMILION</i> ® CD-DCM test is comprised of 2 genes most commonly associated with CD-DCM ( <i>LMNA</i> and <i>SCN5A</i> ). The <i>FAMILION</i> CD-DCM Test will identify a mutation in approximately 40%-50% of patients with conduction disease.
<b><i>FAMILION</i> SQTS</b>	The <i>FAMILION</i> ® SQTS test is comprised of 3 genes most commonly associated with SQTS. <i>FAMILION</i> SQTS Test will identify mutations in <i>KCNH2</i> , <i>KCNQ1</i> , and <i>KCNJ2</i> .
<b><i>FAMILION</i> Postmortem Channelopathies</b>	The <i>FAMILION</i> ® Postmortem Channelopathies test is comprised of 6 genes associated with inherited cardiac channelopathies believed to be the major cause of death in Sudden Unexplained Deaths (SUDS) and Sudden Infant Death Syndrome (SIDS). <i>FAMILION</i> Postmortem Channelopathies test will identify mutations in <i>KCNQ1</i> , <i>KCNH2</i> , <i>SCN5A</i> , <i>KCNE1</i> , <i>KCNE2</i> , and <i>RYR2</i> .
<b><i>FAMILION</i> LVNC</b>	The <i>FAMILION</i> ® LVNC test is designed to detect a mutation associated with approximately 30% of patients with suspicion for LVNC.
<b><i>FAMILION</i> LQTS Deletion/Duplication</b>	The <i>FAMILION</i> ® LQTS Deletion/Duplication test is designed to detect deletion or duplication mutations in <i>KCNQ1</i> or <i>KCNH2</i> .

(Intentionally left blank)

## ACQUIRED R&D PIPELINE

### CLOPIDOGREL (PLAVIX®) RESPONSE TEST

The clopidogrel (Plavix®) response test is designed to screen patients to determine if they are candidates for treatment. Clopidogrel is an antiplatelet agent prescribed to reduce the risk of heart attack and stroke in patients with cardiovascular disease. It is the third leading drug in the U.S. with sales of \$4.2 billion in 2009; however, up to 30% of patients taking clopidogrel do not achieve the desired antiplatelet response. Additionally, the FDA assigned a black-box warning to clopidogrel advising that it can be less effective in the subset of patients that do not properly respond, making it even more important to properly screen and identify the correct patient population.

We believe TBIO will be able to leverage the existing cardiology sales force and relationships developed around the *FAMILION*® tests to sell the clopidogrel response test, if the Company chooses to pursue a commercial launch.

#### Market Assumptions: Clopidogrel (Plavix®) Response Test

Clopidogrel Antiplatelet NRx Model						
\$ in '000s						
	2010	2011	2012	2013	2014	2015
New Antiplatelet Rxs	8,326,731	8,418,325	8,510,927	8,604,547	8,699,197	8,794,888
Growth Rate	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%
Target Population Available		50%	65%	70%	70%	70%
<b>Total Eligible Clopidogrel Patients</b>		<b>4,209,163</b>	<b>5,532,102</b>	<b>6,023,183</b>	<b>6,089,438</b>	<b>6,156,422</b>

- Response test would be valuable to determine patients who may not respond adequately to clopidogrel therapy, especially since clopidogrel has a black-box warning, making it even more important to only use when the patient will benefit.<sup>1,2,3,4</sup>
- Addressable patient pool includes approximately 8.3 million new prescriptions written annually for clopidogrel anti-platelet therapy.<sup>5,6</sup>

### FCGR (Fc GAMMA RECEPTOR) TECHNOLOGY – ONCOLOGY DRUG RESPONSE TESTS

The Fc gamma receptor technology allows for the application of genetic variants in FCGR (Fc gamma receptor) genes, including FCGR3A, to predict response to monoclonal antibodies (mAbs) of the IgG1 subclass, such as rituximab (Rituxan®), trastuzumab (Herceptin®), and cetuximab (Erbix®), three therapies that are currently the subject of collaboration studies with the newly-acquired FCGR technology.

The importance of genetic variation in the FCGR3A pathway continues to gain attention among researchers and clinicians. FCGR3A is a gene that encodes an Fc gamma receptor and binds both natural and therapeutic IgG1 antibodies. The FCGR3A receptor transmits signals from the membrane into the cell via tyrosine kinase activity. This signaling pathway is important in regulating antibody-dependent cellular cytotoxicity (ADCC), a mechanism that is important to the efficacy of many mAb therapies. Please see “Appendix A: Fc Gamma Receptor Technology Example – Rituximab Response Test” for a more detailed overview of one potential application of the science.

To move these programs forward, we expect TBIO to continue collaborative efforts in various treatment settings initiated by CLDA to validate and ultimately commercialize tests, and eventually marker panels, based on these powerful polymorphisms that are useful for providing improved predictors of drug response to these agents and will likely influence therapeutic outcomes of patients treated for these debilitating diseases.

<sup>1</sup> Shuldiner et al. Association of cytochrome P450 2C19 genotype with the antiplatelet effect and clinical efficacy of clopidogrel therapy. *JAMA* Aug 26;302(8):849-57.

<sup>2</sup> Ellis et al. Clopidogrel pharmacogenomics and risk of inadequate platelet inhibition: US FDA recommendations. *Pharmacogenomics* Nov;10(11):1799-817.

<sup>3</sup> Momary K.M. and Dorsch M.P. Factors associated with clopidogrel nonresponsiveness. *Future Cardiol* 2010 Mar;6(2):195-210.

<sup>4</sup> U.S. FDA press released dated March 12, 2010. “FDA Announces New Boxed Warning on Plavix.”

<sup>5</sup> According to Bloomberg & Wolters Kluwer Health, 8,326,731 new prescriptions were written for Plavix in 2009.

<sup>6</sup> According to IMS Health, global sales for Plavix were \$9.1 billion in 2009.

**Market Assumptions: Rituximab (Rituxan®) - Follicular Lymphoma (FL)****FCGR Rituximab Follicular Lymphoma (FL) Market**

\$ in '000s

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>
FL Treated Prevalence	47,000					
FL Patients - Prevalence Pool Candidates		29,643	28,160	25,344	21,543	17,665
<i>Pool Rate of Decline</i>		5%	10%	15%	18%	20%
FL Annual Incidence	19,001	19,286	19,575	19,869	20,167	20,469
<i>Growth Rate</i>	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
FL Share Treated Immediately	90%	90%	90%	90%	90%	90%
FL Patients - Newly Diagnosed	17,101	17,357	17,618	17,882	18,150	18,423
<b>Total Eligible FL Patients</b>	<b>64,101</b>	<b>47,000</b>	<b>45,778</b>	<b>43,226</b>	<b>39,693</b>	<b>36,088</b>

- FCGR test would be used to identify patients for induction with rituximab or for rituximab maintenance therapy.<sup>7,8</sup>
- Addressable patient pool includes:
  - i. Annual incidence of 19,001 FL patients who may be candidates for chemotherapy growing at 1.5% annually;<sup>9</sup> and
  - ii. Existing prevalence pool of 47,000 patients who may be candidates for maintenance therapy. Prevalence pool declines over time as patients are tested.

**Market Assumptions: Rituximab (Rituxan®) - Diffuse Large B-cell Lymphoma (DLBCL)****FCGR Rituximab Diffuse Large B Cell Lymphoma (DLBCL) Market**

\$ in '000s

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>
DLBCL Treated Prevalence	59,000	59,885	60,783	61,695	62,620	63,560
<i>Growth Rate</i>	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
DLBCL Annual Incidence	35,259	35,788	36,325	36,870	37,423	37,984
<i>Growth Rate</i>	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Stem Cell Transplant % in 2nd line+ DLBCL	15%					
<b>Total Eligible DLBCL Patients</b>	<b>20,180</b>	<b>20,483</b>	<b>20,790</b>	<b>21,102</b>	<b>21,418</b>	<b>21,739</b>

- FCGR test would be used to identify patients for second-line rituximab treatment that are not stem cell transplant patients.<sup>10</sup>
- Addressable patient pool includes:
  - i. Annual incidence of 35,259 DLBCL patients who are candidates for first-line treatment less approximately 15% of patients that undergo stem cell transplantation,<sup>11,12</sup> and
  - ii. Existing prevalence pool of 59,000 patients who may be candidates for second-line treatment.

<sup>7</sup> Rituxan promotional materials filed with the FDA, Genentech USA, Inc. and Biogen Idec Inc., 2009.

<sup>8</sup> Pierz, K. et al. Predictive Value of FCGR3A Genotype on Response to Rituximab Induction and Maintenance Therapy in Follicular Non-Hodgkin's Lymphoma. *ASCO 2010*.

<sup>9</sup> According to the National Cancer Institute's Surveillance Epidemiology and End Results (SEER) Cancer Statistics Review, 1975-2007, the annual incidence of follicular lymphoma in the U.S. is 19,001.

<sup>10</sup> Rituxan promotional materials filed with the FDA, Genentech USA, Inc. and Biogen Idec Inc., 2009.

<sup>11</sup> According to the National Cancer Institute's Surveillance Epidemiology and End Results (SEER) Cancer Statistics Review, 1975-2007, the annual incidence of diffuse large B-cell lymphoma in the U.S. is 35,259.

<sup>12</sup> Smith SD et al. Comparison of outcomes after auto-SCT for patients with relapsed diffuse large B-cell lymphoma according to previous therapy with rituximab. *Bone Marrow Transplant* May 17, 2010.

**Market Assumptions: Trastuzumab (Herceptin®) - Metastatic Breast Cancer (MBC)****FCGR Trastuzumab Metastatic Breast Cancer (MBC) Market**

\$ in '000s

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>
MBC Treated Prevalence	120,000					
HER2+ %	25%					
MBC HER2+ Patients - Prev. Pool Candidates		14,775	14,480	13,611	11,977	9,822
<i>Pool Rate of Decline</i>		2%	6%	12%	18%	22%
MBC Annual Incidence	60,000	60,900	61,814	62,741	63,682	64,637
<i>Growth Rate</i>	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
MBC HER2+ Patients - Newly Diagnosed	15,000	15,225	15,453	15,685	15,920	16,159
<b>Total Eligible Trastuzumab Patients</b>		<b>30,000</b>	<b>29,933</b>	<b>29,296</b>	<b>27,898</b>	<b>25,981</b>

- FCGR test would be valuable in HER2+ patients who are candidates for single agent trastuzumab or combination therapy with trastuzumab.<sup>13</sup>
- Addressable patient pool includes:
  - i. Annual incidence of 15,000 HER2+ MBC patients starting chemotherapy;<sup>14,15</sup> and
  - ii. Existing prevalence pool of 30,000 HER2+ MBC patients who may be candidates for trastuzumab.

**Market Assumptions: Cetuximab (Erbix®) - Metastatic Colorectal Cancer (CRC)****FCGR Cetuximab in Metastatic Colorectal Cancer (CRC) Market**

\$ in '000s

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>
Metastatic CRC Treated Prevalence	65,000					
KRAS Mutation %	40%					
Metastatic CRC KRAS Wt Patients - Prev. Pool		14,640	13,908	12,517	10,640	8,724
<i>Pool Rate of Decline</i>		5%	10%	15%	18%	20%
Metastatic CRC Annual Incidence	40,000	40,600	41,209	41,827	42,455	43,091
<i>Growth Rate</i>	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Metastatic CRC KRAS Wt Patients - Newly Diagnosed		24,360	24,725	25,096	25,473	25,855
<b>Total Eligible Cetuximab Patients</b>		<b>39,000</b>	<b>38,633</b>	<b>37,613</b>	<b>36,112</b>	<b>34,579</b>

- FCGR test would be valuable in CRC patients at any point during treatment.<sup>16</sup>
- Addressable patient pool includes:
  - i. Annual incidence of 24,360 KRAS Wt CRC patients starting chemotherapy;<sup>17,18</sup> and
  - ii. Existing prevalence pool of 26,000 KRAS Wt patients who are currently being treated for CRC.

<sup>13</sup> Musolino, A. et al. Immunoglobulin G Fragment C Receptor Polymorphisms and Clinical Efficacy of Trastuzumab-Based Therapy in Patients with HER-2/*neu*-Positive Metastatic Breast Cancer. *Journal of Clinical Oncology* 2008;28 (11): 1789-96.

<sup>14</sup> According to the American Cancer Society, the annual incidence of breast cancer in the U.S. is approximately 254,650 (192,370 invasive cases and 62,280 carcinoma in situ cases).

<sup>15</sup> According to the American Association for Cancer Research, approximately 20% to 25% of breast cancers are HER2+.

<sup>16</sup> Lurje, G. et al. Polymorphisms in *Cyclooxygenase-2* and *Epidermal Growth Factor Receptor* are Associated with Progression-Free Survival Independent of K-ras in Metastatic Colorectal Cancer Patients Treated with Single-Agent Cetuximab. *Clin Cancer Res* 2008;14(23): 7884-95.

<sup>17</sup> According to the American Cancer Society, the annual incidence of breast cancer in the U.S. is approximately 146,970 (106,100 cases of colon cancer and 40,870 cases of rectal cancer).

<sup>18</sup> Karapetis et al. K-ras Mutations and Benefit from Cetuximab in Advanced Colorectal Cancer. 2008. *New England Journal of Medicine*, approximately 42.3% of colorectal tumors have KRAS mutations.

## INVESTMENT CONCERNS AND RISKS

For a complete description of risks and uncertainties related to Transgenomic, Inc.'s business, see the "Risk Factors" section in Transgenomic's SEC filings, which can be accessed directly from the SEC Edgar filings at [www.sec.gov](http://www.sec.gov). Potential risks include:

- ❑ **Stock risk and market risk:** There is a limited trading market for the Company's common stock. There can be no assurance that an active and liquid trading market will develop or, if developed, that it will be sustained, which could limit one's ability to buy or sell the Company's common stock at a desired price. Investors should also consider technical risks common to many small-cap or micro-cap stock investments, such as small float, risk of dilution, dependence upon key personnel, and the strength of competitors that may be larger and better capitalized.
- ❑ **New and rapidly changing field:** The pharmaceutical and biotechnological markets are rapidly evolving, and research and development are expected to continue at an accelerated pace with increased frequency. Other companies are also actively engaged in the development of therapies to directly or indirectly treat those disorders being pursued by Transgenomic. These companies may have substantially greater research and development capabilities, as well as significantly greater marketing, financial, and human resources abilities than Transgenomic.
- ❑ **Products still in development phases:** Although the Company intends to continue with clinical development of pipeline tests in various indications, the successful development of the Company's product candidates is uncertain. Product development costs and timelines can vary significantly for each product candidate and are difficult to accurately predict. In addition, products in development that appear to be promising may not reach commercialization for various reasons, including failure to achieve regulatory approvals, safety concerns, and/or the inability to be manufactured at a reasonable cost.
- ❑ **Funding requirements:** It is difficult to predict the Company's future capital requirements. The Company may need additional financing to continue funding the research and development of its products and to expand its business. There is no guarantee that it can secure the desired future capital or, if sufficient capital is secured, that current shareholders will not suffer significant dilution.
- ❑ **Regulatory risk:** Various statutes and regulations also govern or influence the manufacturing, safety, labeling, storage, record keeping and marketing of each product. The lengthy process of seeking approval and the subsequent compliance with applicable statutes and regulations require the expenditure of substantial resources. Any failure by us to obtain, or any delay in obtaining, regulatory approvals could materially adversely affect Transgenomic's business. There is no guarantee that Transgenomic's products will be approved by the U.S. Food and Drug Administration (FDA) or international regulatory bodies for marketing in the U.S. or abroad.
- ❑ **The Company may need to raise additional capital, which may not be available on terms acceptable to them, if at all:** As the Company continues to expand their research and development and sales and marketing activities, they may need to raise additional capital, which may not be available on terms acceptable to them, if at all. If the Company cannot raise necessary additional capital on acceptable terms, they may not be able to increase sales, develop or enhance their products and services, take advantage of future opportunities, or respond to competitive pressures or unanticipated requirements, any of which could cause their business to suffer.

## FINANCIAL ANALYSIS & VALUATION

### BALANCE SHEET

Fiscal Yr Ending December 31

*(in thousands)*

<b>Assets</b>	<b>9/30/2010</b>	<b>12/31/2009</b>
<b>Current Assets:</b>		
Cash & cash equivalents	4,589	5,642
Accounts receivable	3,536	4,522
Inventories	3,658	3,552
Other current assets & prepaid expenses	646	738
Total current assets	<u>12,429</u>	<u>14,454</u>
Property and equipment	1,047	967
Intangibles	-	-
Other assets, net	461	583
Total assets	<u>13,937</u>	<u>16,004</u>
<b>Liabilities and Stockholder's Equity</b>		
<b>Current liabilities:</b>		
Accounts payable	889	1,013
Accrued liabilities	3,390	3,090
Total current liabilities	<u>4,279</u>	<u>4,103</u>
Long term debt	-	-
Other long term liabilities	351	239
Total liabilities	<u>4,630</u>	<u>4,342</u>
<b>Stockholder's equity:</b>		
Preferred stock	-	-
Common stock	498	497
Additional paid-in capital	139,715	139,703
Retained earnings	(132,550)	(130,183)
Accumulated other comprehensive loss	1,644	1,645
Total stockholder's equity	<u>9,307</u>	<u>11,662</u>
Total liabilities and stockholder's equity	<u>13,937</u>	<u>16,004</u>

## REVENUE MODEL

For modeling purposes, we divided the revenue assumptions into three segments – Instruments & Consumables, Laboratory Services, and Molecular Diagnostics. The Instruments & Consumables segment consists of revenue generated from instrument sales (including WAVE® Systems and HANABI instruments) and instrument-related consumables and services revenue. The Laboratory Services segment includes revenue from pharmacogenomic services, as well as TBIO's molecular reference laboratory. The Molecular Diagnostics segment includes revenue from the sale of diagnostic tests, including the *FAMILION*® family of cardiology tests, the ARisk™ Familial Autism Panel, the anticipated clopidogrel response test and Fc gamma oncology tests, and TBIO's existing diagnostic test portfolio.

### REVENUE PROJECTIONS BY BUSINESS SEGMENT

Fiscal Yr Ending December 31 (in thousands)	2010E	2011E	2012E	2013E
Instruments & Consumables	\$ 15,500	\$ 15,500	\$ 14,000	\$ 13,000
Laboratory Services	\$ 1,500	\$ 2,750	\$ 5,750	\$ 13,500
Molecular Diagnostics	\$ 3,500	\$ 20,500	\$ 30,250	\$ 43,500
<b>Total Net Revenue</b>	<b>\$ 20,500</b>	<b>\$ 38,750</b>	<b>\$ 50,000</b>	<b>\$ 70,000</b>

#### Instrument & Consumables Segment Assumptions:

- The global markets for WAVE® Systems and HANABI instruments are mature and are becoming saturated. As a result, we assume that annual sales for each system have reached a plateau and will begin to decline after 2011.
- As global instrument sales slow, instrument-related services, including regular maintenance and repair, will also begin to decline.
- Sales of bioconsumables, the supplementary products used for instrument operation, will decline, but not as quickly as instrument sales as the existing global base of instruments will still be in use.

#### Laboratory Services Segment Assumptions:

- Pharmacogenomics revenue drives growth in this segment as TBIO leverages newly-acquired tests to build new pharmaceutical services relationships.

#### Molecular Diagnostics Segment Assumptions:

- *FAMILION*® cardiology test revenue continues to grow as new tests are added to the franchise and additional sales reps are hired.
- Launch of the clopidogrel (Plavix®) response test in 2011 contributes to growth.
- Launch of the Fc Gamma receptor (FCGR) oncology tests through 2011 also contributes to growth in this segment.

## ANNUAL INCOME STATEMENT

Fiscal Yr Ending December 31 (in thousands)	2005A	2006A	2007A	2008A	2009A	2010E	2011E	2012E	2013E
Net revenue	\$ 25,828	\$ 23,415	\$ 23,176	\$ 23,993	\$ 22,023	\$ 20,500	\$ 38,750	\$ 50,000	\$ 70,000
Cost of revenue	13,497	12,046	10,483	10,345	10,418	10,400	16,500	19,500	25,000
Gross profit	12,331	11,369	12,693	13,648	11,605	10,100	22,250	30,500	45,000
Gross Margin	47.7%	48.6%	54.8%	56.9%	52.7%	49.3%	57.4%	61.0%	64.3%
Operating expenses:									
Selling, general, and administrative	12,218	12,138	11,466	10,795	10,319	10,000	15,500	20,000	22,500
Research and development	2,199	2,362	3,033	2,465	3,182	2,400	3,000	3,000	3,000
Restructuring charges	-	-	1,516	118	-	-	-	-	-
Impairment charges	425	-	-	638	-	-	-	-	-
Total operating expense	14,842	14,500	16,015	14,016	13,501	12,400	18,500	23,000	25,500
% of Revenue	57.5%	61.9%	69.1%	58.4%	61.3%	60.5%	47.7%	46.0%	36.4%
Income (loss) from operations	(2,511)	(3,131)	(3,322)	(368)	(1,896)	(2,300)	3,750	7,500	19,500
Interest and other income (expense)	(2,447)	198	1,391	86	18	-	(1,500)	(1,500)	(1,000)
Pretax income (loss)	(4,958)	(2,933)	(1,931)	(282)	(1,878)	(2,300)	2,250	6,000	18,500
% of Revenue	-19.2%	-12.5%	-8.3%	-1.2%	-8.5%	-11.2%	5.8%	12.0%	26.4%
Provision (benefit) for income taxes	\$ 26	\$ 30	\$ 243	\$ 213	\$ 42	\$ -	\$ -	\$ -	\$ -
Net income (loss) before discontinued operations	\$ (4,984)	\$ (2,963)	\$ (2,174)	\$ (495)	\$ (1,920)	\$ (2,300)	\$ 2,250	\$ 6,000	\$ 18,500
Income (loss) from discontinued operations	\$ (10,009)	\$ (468)	\$ 67	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net income (loss)	\$ (14,993)	\$ (3,431)	\$ (2,107)	\$ (495)	\$ (1,920)	\$ (2,300)	\$ 2,250	\$ 6,000	\$ 18,500
Basic and diluted net income (loss) per share									
From continuing operations	\$ (0.14)	\$ (0.06)	\$ (0.04)	\$ (0.01)	\$ (0.04)	\$ (0.05)	\$ 0.03	\$ 0.09	\$ 0.28
From discontinued operations	\$ (0.28)	\$ (0.01)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ (0.42)	\$ (0.07)	\$ (0.04)	\$ (0.01)	\$ (0.04)	\$ (0.05)	\$ 0.03	\$ 0.09	\$ 0.28
Weighted-average number of shares used in per share calculations:									
Basic	35,688	49,188	49,190	49,190	49,190	49,190	64,700	65,200	65,700
Diluted	35,688	49,188	49,190	49,190	49,190	49,190	64,700	65,200	65,700

## Assumptions Regarding the Income Statement:

- The gross profit margin increases to almost 65% by the end of 2013 as economies of scale are realized in the Molecular Diagnostics business segment. We assume laboratory capacity utilization is currently less than 50%; thus, fixed costs will remain relatively stable as test sales increase.
- Operating margins improve as TBIO leverages its general overhead and sales force as the Molecular Diagnostics revenue increases. The addition of new products, including new *FAMILION*® tests, the clopidogrel response test, Fc gamma tests, COLD-PCR-based tests, and other tests, will drive increased sales productivity.
- Non-operating expenses remain high through 2013 as TBIO services the 10% note and 10% convertible preferred equity issued during the acquisition.
- The Company utilizes tax-loss carryforwards to reduce tax liabilities through 2013.
- The number of diluted shares outstanding increases gradually as TBIO issue stock options for employee compensation.

**QUARTERLY INCOME STATEMENT**

	2009A				2010E				2011E			
	Q1A	Q2A	Q3A	Q4A	Q1A	Q2A	Q3A	Q4E	Q1E	Q2E	Q3E	Q4E
Fiscal Yr Ending December 31 (in thousands)												
Net revenue	\$ 4,989	\$ 5,473	\$ 5,046	\$ 6,515	\$ 5,442	\$ 5,095	\$ 4,419	\$ 5,500	\$ 8,750	\$ 9,250	\$ 9,750	\$ 11,000
Cost of revenue	2,176	2,822	2,293	3,127	2,558	2,608	2,402	2,700	4,000	4,000	4,100	4,400
Gross profit	2,813	2,651	2,753	3,388	2,884	2,487	2,017	2,800	4,750	5,250	5,650	6,600
Gross margin	56.4%	48.4%	54.6%	52.0%	53.0%	48.8%	45.6%	50.9%	54.3%	56.8%	57.9%	60.0%
Operating expenses:												
Selling, general, and administrative	2,975	2,732	2,215	2,397	2,432	3,033	2,231	2,200	3,700	3,800	3,900	4,100
Research and development	844	686	938	714	827	512	613	575	750	750	750	750
Restructuring charges	-	-	-	-	-	-	-	-	-	-	-	-
Impairment charges	-	-	-	-	-	-	-	-	-	-	-	-
Total operating expense	3,819	3,418	3,153	3,111	3,259	3,545	2,844	2,775	4,450	4,550	4,650	4,850
% of Revenue	76.5%	62.5%	62.5%	47.8%	59.9%	69.6%	64.4%	50.5%	50.9%	49.2%	47.7%	44.1%
Income (loss) from operations	(1,006)	(767)	(400)	277	(375)	(1,058)	(827)	25	300	700	1,000	1,750
Interest and other income (expense)	12	(1)	-	17	-	1	(24)	-	(385)	(385)	(385)	(385)
Pretax income (loss)	(994)	(768)	(400)	294	(375)	(1,057)	(851)	25	(85)	315	615	1,365
% of Revenue	-19.9%	-14.0%	-7.9%	4.5%	-6.9%	-20.7%	-19.3%	0.5%	-1.0%	3.4%	6.3%	12.4%
Provision (benefit) for income taxes	(41)	(38)	(34)	155	(51)	89	(51)	-	-	-	-	-
Net income (loss) before discontinued operations	\$ (953)	\$ (730)	\$ (366)	\$ 139	\$ (324)	\$ (1,146)	\$ (800)	\$ 25	\$ (85)	\$ 315	\$ 615	\$ 1,365
Income (loss) from discontinued operations	-	-	-	-	-	-	-	-	-	-	-	-
Net income (loss)	\$ (953)	\$ (730)	\$ (366)	\$ 139	\$ (324)	\$ (1,146)	\$ (800)	\$ 25	\$ (85)	\$ 315	\$ 615	\$ 1,365
Basic and diluted net income (loss) per share												
From continuing operations	\$ (0.02)	\$ (0.01)	\$ (0.01)	\$ 0.00	\$ (0.01)	\$ (0.02)	\$ (0.02)	\$ 0.00	\$ (0.00)	\$ 0.00	\$ 0.01	\$ 0.02
From discontinued operations	-	-	-	-	-	-	-	-	-	-	-	-
From discontinued operations	\$ (0.02)	\$ (0.01)	\$ (0.01)	\$ 0.00	\$ (0.01)	\$ (0.02)	\$ (0.02)	\$ 0.00	\$ (0.00)	\$ 0.00	\$ 0.01	\$ 0.02
Weighted-average number of shares used in per share calculations:												
Basic	49,190	49,190	49,190	49,190	49,190	49,190	49,190	49,190	64,700	64,700	64,700	64,700
Diluted	49,190	49,190	49,190	49,190	49,190	49,190	49,190	49,190	64,700	64,700	64,700	64,700

**CASH FLOW STATEMENT**

Fiscal Yr Ending December 31 (in thousands)	2006A	2007A	2008A	2009A	2010E	2011E	2012E	2013E
Net Income	\$ (3,431)	\$ (2,107)	\$ (495)	\$ (1,920)	\$ (2,300)	\$ 2,250	\$ 6,000	\$ 18,500
Depreciation & Amortization	1,949	950	882	885	800	1,150	1,150	1,150
Stock based compensation, deferred tax allowance, etc.	616	(888)	873	221	220	300	300	300
Working Capital	(346)	(894)	(1,673)	2,111	1,500	(1,500)	(3,000)	(5,000)
Cash Provided (Used) by operating activities	\$ (1,212)	\$ (2,939)	\$ (413)	\$ 1,297	\$ 220	\$ 2,200	\$ 4,450	\$ 14,950
Capital expenditures	(250)	(702)	(325)	(351)	(2,000)	(1,100)	(1,100)	(1,500)
Discretionary free C/F	\$ (1,462)	\$ (3,641)	\$ (738)	\$ 946	\$ (1,780)	\$ 1,100	\$ 3,350	\$ 13,450
<b>Discretionary free C/F/share</b>	<b>\$ (0.03)</b>	<b>\$ (0.07)</b>	<b>\$ (0.02)</b>	<b>\$ 0.02</b>	<b>\$ (0.04)</b>	<b>\$ 0.02</b>	<b>\$ 0.05</b>	<b>\$ 0.20</b>
Cash flow from investing activities	(195)	3,083	(399)	(377)	(17,400)	(1,100)	(1,100)	(1,500)
Cash flow from financing activities	5	-	-	-	15,400	-	-	-
Shares O/S	49,188	49,190	49,190	49,190	49,190	64,700	65,200	65,700
EBITDA	(\$1,182)	(\$2,372)	\$514	(\$1,011)	(\$1,500)	\$4,900	\$8,650	\$20,650

**Assumptions Regarding the Income Statement:**

- Negative cash flow from working capital reflects an increasing accounts receivable balance as test volumes increase.
- Capital expenditures include the purchase of new laboratory equipment required to support increasing test volumes.
- Investing cash flow reflects the asset acquisition purchase price of \$15.4 million, as well as capital expenditures.
- Financing cash flow reflects the capital secured to support the acquisition, including \$6 million in Series A preferred equity, \$8.5 million in a 3-year note bearing an interest of 10% per annum with a principal repayment schedule beginning in May 2012, and \$932,000 in a 1-year note bearing interest at 6.5%.

(Intentionally left blank)

## COMPARATIVE VALUATION

We performed a comparative valuation analysis by comparing TBIO's current valuation to 13 companies with similar businesses. Three methods were employed, one using a market capitalizing-to-sales multiple, one using a market capitalization-to-EBITDA multiple, and one using a price-to-earnings (PE) multiple.

We constructed our peer group with public companies engaged in businesses similar to TBIO (specifically, genetics analysis instruments, laboratory services, and/or molecular diagnostics) with total revenue less than \$200 million. While none of the selected companies is directly comparable to the TBIO, we included the companies because they have operations that, for purposes of analysis, may be considered similar to operations of TBIO.

Peer Group - Public Healthcare Tools & Services (Diagnosotics, Instruments, & Lab Services)						
Revenue < \$200 Million						
Company Name	Market Capitalization (\$USDmm)	Total Revenue [LTM] (\$USDmm)	MC/Revenue	EBITDA [LTM] (\$USDmm)	MC/EBITDA	P/E
Albany Molecular Research Inc. (NasdaqGS:AMRI)	179.4	192.8	0.9	11.6	15.5	NM
Axis-Shield plc (LSE:ASD)	211.8	145.3	1.5	19.3	11.0	23.0
BioClinica, Inc. (NasdaqGM:BIOC)	68.6	75.9	0.9	8.1	8.5	22.6
Caliper Life Sciences, Inc. (NasdaqGM:CALP)	307.7	125.1	2.5	5.0	61.7	21.8
CombiMatrix Corporation (NasdaqGM:CBMX)	17.0	5.3	3.2	-13.9	NM	NM
Exiqon A/S (CPSE:EXQ)	53.3	15.1	3.5	-6.6	NM	NM
Luminex Corporation (NasdaqGM:LMNX)	772.0	138.5	5.6	20.3	38.0	35.3
MEDTOX Scientific Inc. (NasdaqGS:MTOX)	112.2	92.0	1.2	8.7	12.8	51.3
Neogenomics Inc. (OTCBB:NGNM)	45.6	33.4	1.4	-2.1	NM	NM
Response Genetics, Inc (NasdaqCM:RGDX)	43.7	18.3	2.4	-5.0	NM	NM
Sequenom Inc. (NasdaqGM:SQNM)	593.1	44.5	13.3	-62.1	NM	NM
SeraCare Life Sciences, Inc. (NasdaqCM:SRLS)	89.6	49.6	1.8	7.5	12.0	11.9
Vermillion, Inc. (NasdaqGM:VRML)	78.6	0.8	NM	-11.7	NM	NM
<b>Transgenomic Inc. (OTCBB:TBIO)</b>	<b>33.5</b>	<b>22.1</b>	<b>1.5</b>	<b>-0.7</b>	<b>N/A</b>	<b>NM</b>
Summary Statistics	Market Capitalization (\$USDmm)	Total Revenue [LTM] (\$USDmm)	MC/Revenue	EBITDA [LTM] (\$USDmm)	MC/EBITDA	P/E
Mean	194.4	73.7	3.1	-0.8	22.8	24.7
Median	79.1	47.1	1.7	2.5	12.4	22.6
Maximum	772.0	192.8	13.3	20.3	61.7	51.3
Minimum	17.0	5.3	0.9	-62.1	8.5	11.9

<i>(in thousands)</i>										
Revenue Multiple Method				Implied Equity Valuation			Implied Per Share Valuation			
2013 Revenue	Revenue Multiple (based on Peer Group)			Discount Rate	Revenue Multiple (based on Peer Group)			Revenue Multiple (based on Peer Group)		
	1.5	2.5	3.5		1.5	2.5	3.5	1.5	2.5	3.5
\$ 70,000	\$ 105,000	\$ 175,000	\$ 245,000	10.0%	\$ 86,777	\$ 144,628	\$ 202,479	\$ 1.32	\$ 2.20	\$ 3.08
\$ 70,000	\$ 105,000	\$ 175,000	\$ 245,000	12.5%	\$ 82,963	\$ 138,272	\$ 193,580	\$ 1.26	\$ 2.10	\$ 2.95
\$ 70,000	\$ 105,000	\$ 175,000	\$ 245,000	15.0%	\$ 79,395	\$ 132,325	\$ 185,255	\$ 1.21	\$ 2.01	\$ 2.82
\$ 70,000	\$ 105,000	\$ 175,000	\$ 245,000	17.5%	\$ 76,053	\$ 126,754	\$ 177,456	\$ 1.16	\$ 1.93	\$ 2.70
\$ 70,000	\$ 105,000	\$ 175,000	\$ 245,000	20.0%	\$ 72,917	\$ 121,528	\$ 170,139	\$ 1.11	\$ 1.85	\$ 2.59
2013 EBITDA	EBITDA Multiple (based on Peer Group)			Discount Rate	EBITDA Multiple (based on Peer Group)			EBITDA Multiple (based on Peer Group)		
	20	25	30		20	25	30	20	25	30
\$ 20,650	\$ 413,000	\$ 516,250	\$ 619,500	10.0%	\$ 341,322	\$ 426,653	\$ 511,983	\$ 5.20	\$ 6.49	\$ 7.79
\$ 20,650	\$ 413,000	\$ 516,250	\$ 619,500	12.5%	\$ 326,321	\$ 407,901	\$ 489,481	\$ 4.97	\$ 6.21	\$ 7.45
\$ 20,650	\$ 413,000	\$ 516,250	\$ 619,500	15.0%	\$ 312,287	\$ 390,359	\$ 468,431	\$ 4.75	\$ 5.94	\$ 7.13
\$ 20,650	\$ 413,000	\$ 516,250	\$ 619,500	17.5%	\$ 299,140	\$ 373,925	\$ 448,710	\$ 4.55	\$ 5.69	\$ 6.83
\$ 20,650	\$ 413,000	\$ 516,250	\$ 619,500	20.0%	\$ 286,806	\$ 358,507	\$ 430,208	\$ 4.37	\$ 5.46	\$ 6.55
2013 EPS	P/E Multiple (based on Peer Group)			Discount Rate	P/E Multiple (based on Peer Group)			P/E Multiple (based on Peer Group)		
	20	25	30		20	25	30	20	25	30
\$ 0.28	\$ 5.63	\$ 7.04	\$ 8.45	10.0%	\$ 4.65	\$ 5.82	\$ 6.98	\$ 4.65	\$ 5.82	\$ 6.98
\$ 0.28	\$ 5.63	\$ 7.04	\$ 8.45	12.5%	\$ 4.45	\$ 5.56	\$ 6.67	\$ 4.45	\$ 5.56	\$ 6.67
\$ 0.28	\$ 5.63	\$ 7.04	\$ 8.45	15.0%	\$ 4.26	\$ 5.32	\$ 6.39	\$ 4.26	\$ 5.32	\$ 6.39
\$ 0.28	\$ 5.63	\$ 7.04	\$ 8.45	17.5%	\$ 4.08	\$ 5.10	\$ 6.12	\$ 4.08	\$ 5.10	\$ 6.12
\$ 0.28	\$ 5.63	\$ 7.04	\$ 8.45	20.0%	\$ 3.91	\$ 4.89	\$ 5.87	\$ 3.91	\$ 4.89	\$ 5.87

**VALUATION SUMMARY**

Based on our analysis, TBIO is significantly undervalued relative to its peer group. On a historical basis, the peer group has an average market capitalization-to-revenue [last 12 months] multiple of 3.1x. TBIO's current market capitalization-to-revenue [last 12 months] multiple is 1.5x. Applying the average peer group multiple of 3.1x, TBIO would currently be trading at approximately \$1.40 per share, nearly 90% higher than its current market valuation of \$0.74/share.

On a post-acquisition pro forma basis, the combined businesses had last 12 months net revenue of \$34.4 million as of September 30, 2010. Applying the peer group revenue multiple of 3.1x, the combined business would trade at almost \$2.20 per share, approximately 190% higher than TBIO's current market valuation.

We also used the peer group to estimate TBIO's 12-month forward-looking valuation. We used the market capitalization-to-EBITDA and price-to-earnings (P/E) multiples of 22.8x and 24.7x, respectively, from the peer group and applied them to TBIO's projected 2013 EBITDA and earnings per share. We then discounted the valuations back to 2011 using a discount rate in the 15%-17.5% range. This model suggests a 12-month valuation range of \$4.08-\$5.94/share, or approximately 4.5 to 7.0x higher than today's market valuation. Based on this analysis, we are setting a 12-month price target of \$4.50 for TBIO shares.

*(Intentionally left blank)*

## APPENDIX A: FC GAMMA RECEPTOR TECHNOLOGY EXAMPLE – RITUXIMAB TEST

One example of a potential application for the Fc gamma receptor technology acquired from Clinical Data is a rituximab test designed to determine the FCGR3A F158V (rs396991) genotype by sequencing. One version of the rituximab test would be intended to be used along with other clinical information to determine the potential benefits from treatment with rituximab monotherapy for non-Hodgkin's Lymphoma (NHL). The Fc gamma receptor technology may also be used to develop similar response tests for other indications, such as follicular lymphoma, and other mAbs, such as trastuzumab and cetuximab. We have included this example to demonstrate one potential application of the FCGR technology.

Rituximab is an IgG1 immunotherapeutic agent indicated for the treatment of patients with relapsed or refractory, low-grade or follicular, CD20-positive, B-cell, non-Hodgkin's lymphoma, in combination with CVP chemotherapy, CHOP, or other anthracycline-based chemotherapy regimens.<sup>19</sup>

The Fc gamma receptor rituximab test would provide unique and valuable information for patients with follicular NHL and their doctors. By analyzing a person's DNA from a blood sample, the test would identify a single nucleotide polymorphism, referred to as V158F, in the FCGR3A gene. This gene encodes the Fc Gamma IIIa receptor on lymphocytes to which rituximab binds. (The association between response to rituximab monotherapy and the V158F SNP has been demonstrated in two independent studies. The finding is robust in that it is seen at both short (1 – 3 months) and longer-term endpoints (9 – 12 months).<sup>20 21 22 23</sup>) Based on two independent studies in 49 and 87 patients, respectively, patients with follicular, CD20-positive, B-cell NHL who carried the 158V/V version of the variant in the FCGR3A gene were more likely to respond to rituximab monotherapy than patients with other variants. This association held true when response was measured at both 2-month and 12-month end points.<sup>24 25</sup>

In addition, rituximab in combination with methotrexate is indicated to reduce signs and symptoms in adult patients with moderately-to-severely-active rheumatoid arthritis who have had an inadequate response to one or more TNF antagonist therapies.<sup>26</sup> Because FCGR3A is strongly associated with a better response to rituximab, it needs to be taken into account in the development of new drugs targeting the CD20 antigen. Taken together, those results will enable new therapeutic strategies against B lymphoproliferative disorders based upon prior determination of the patient's FCGR3A genotype. Because this polymorphism has the same distribution in various ethnic populations, such a strategy may be applied worldwide.<sup>27</sup>

The Fc gamma receptor rituximab test will assist physicians, patients, and payers in the decision to initiate treatment with rituximab. We believe there is clear clinical utility for this test, particularly if driven by payer requirements and incorporated into standards of care. We believe other opportunities exist to develop response tests for other mAb therapies of the IgG1 subtype, including trastuzumab and cetuximab.

---

<sup>19</sup> Rituxan package insert.

<sup>20</sup> Cartron G et al. Therapeutic activity of humanized anti-CD20 monoclonal antibody and polymorphism in IgG Fc receptor Fc(gamma) RIIIa gene. *Blood* 2002;99;No. 3:754-758

<sup>21</sup> Weng WK and Levy R. Two Immunoglobulin G Fragment C Receptor Polymorphisms Independently Predict Response to Rituximab in Patients With Follicular Lymphoma. *Journal of Clinical Oncology* 2003;21;No. 21:3940-3947

<sup>22</sup> Koene HR et al. FcγRIIIa-158V/F polymorphism influences the binding of IgG by natural killer cell FcγRIIIa, independently of the FcγRIIIa-48L/R/H phenotype. *Blood* 1997;90:1109-114

<sup>23</sup> Clinical Data Press release entitled, "Clinical Data Launches PGxPredict™: RITUXIMAB on schedule - Pharmacogenetic Test to Aid Physicians in Managing Therapy for Patients with Follicular non-Hodgkin's Lymphoma." January 30, 2007.

<sup>24</sup> Cartron G et al. Therapeutic activity of humanized anti-CD20 monoclonal antibody and polymorphism in IgG Fc receptor Fc(gamma) RIIIa gene. *Blood* 2002;99; No. 3:754-758

<sup>25</sup> Weng WK and Levy R. Two Immunoglobulin G fragment C receptor polymorphisms independently predict response to rituximab in patients with follicular lymphoma. *Journal of Clinical Oncology* 2003;21;No. 21:3940:3947

<sup>26</sup> Rituxan package insert

<sup>27</sup> Cartron G et al. Therapeutic activity of humanized anti-CD20 monoclonal antibody and polymorphism in IgG Fc receptor Fc(gamma) RIIIa gene. *Blood* 2002;99; No. 3:754-758

## DISCLOSURES

**ANALYST(S) CERTIFICATION:** The analyst(s) responsible for covering the securities in this report certify that the views expressed in this research report accurately reflect their personal views about Transgenomic, Inc. (the “Company”) and its securities. The analyst(s) responsible for covering the securities in this report certify that no part of their compensation was, is, or will be directly or indirectly related to the specific recommendation or view contained in this research report.

**RATINGS:** Griffin Securities, Inc. currently has BUY ratings on the shares of Transgenomic, Inc. (OTCBB: TBIO) and Clinical Data, Inc. (NasdaqGM: CLDA). Griffin Securities, Inc. has no investment ratings on any of the other companies mentioned in the report.

**MEANINGS OF RATINGS:** Our rating system is based upon 12 to 36 month price targets. **BUY** describes stocks that we expect to appreciate by more than 20%. **HOLD** describes stocks that we expect to change plus or minus 20%. **SELL** describes stocks that we expect to decline by more than 20%. **SC** describes stocks that Griffin Securities has **Suspended Coverage** of this Company and price target, if any, for this stock, because it does not currently have a sufficient basis for determining a rating or target and/or Griffin Securities is redirecting its research resources. The previous investment rating and price target, if any, are no longer in effect for this stock and should not be relied upon. **NR** describes stocks that are **Not Rated**, indicating that Griffin Securities does not cover or rate this Company.

**DISTRIBUTION OF RATINGS:** Currently Griffin Securities has assigned BUY ratings or NO RATINGS on all of the companies it covers. The Company has provided investment-banking services for 17% of companies in which it has had BUY ratings in the past 12 months, 0% for companies in which it has had NR or no coverage in the past 12 months or has suspended coverage (SC) in the past 12 months.

**MARKET MAKING:** Griffin Securities does not maintain a market in the shares of this Company or any other Company mentioned in the report.

**COMPENSATION OR SECURITIES OWNERSHIP:** The analyst(s) responsible for covering the securities in this report receive compensation based upon, among other factors, the overall profitability of Griffin Securities, including profits derived from investment banking revenue. The analyst(s) that prepared the research report did not receive any compensation from the Company or any other companies mentioned in this report in connection with the preparation of this report. The analysts responsible for covering the securities in this report currently do not own common stock in the Company, but in the future may from time to time engage in transactions with respect to the Company or other companies mentioned in the report. Griffin Securities from time to time in the future may request expenses to be paid for copying, printing, mailing and distribution of the report by the Company and other companies mentioned in this report. The Company is currently a client of Griffin Securities, Inc. Griffin Securities’ services for the Company consist of non-investment banking securities-related services and non-securities services. Griffin Securities has received compensation from the Company in the past 12 months for investment banking-related services. Griffin Securities has received compensation from Clinical Data, Inc. (NasdaqGM: CLDA) in the past 12 months for investment banking-related services. Griffin Securities expects to receive, or intends to seek, compensation for investment banking services from the Company in the next three months.

### TBIO PRICE CHART



**12/10/08** – Initiating Coverage: share price: \$0.54; rating: BUY; 12-month price target: \$4.00. **6/03/09** – Updating Coverage: share price: \$0.45; rating: BUY; 12-month price target: \$2.00. **1/10/11** – Updating Coverage: share price: \$0.72; rating: BUY; 12-month price target: \$4.50.

## CLDA PRICE CHART



**3/05/2007** – Initiating Coverage: share price: \$13.82; rating: BUY; 12-month price target: \$23.00 (adjusted for 3:2 stock split); **12/21/2007** – Research Update: share price: \$22.63; rating: BUY; 12-month price target: \$45.00; **7/23/2008** – Research Update: share price: \$16.13; rating: BUY; 12-month price target: \$45.00; **8/06/2008** – Research Update: share price: \$17.43; rating: BUY; 12-month price target: \$52.00; **6/22/2009** – Research Update: share price: \$12.30; rating: BUY; 12-month price target: \$38.00. **11/25/2009** – Research Update: share price: \$15.96; rating: BUY; 12-month price target: \$38.00. **10/1/2010** – Research Update: share price: \$16.87; rating: BUY; 12-month price target: \$33.00.

**FORWARD-LOOKING STATEMENTS:** This Report contains forward-looking statements, which involve risks and uncertainties. Actual results may differ significantly from such forward-looking statements. Factors that might cause such a difference include, but are not limited to, those discussed in the “Risk Factors” section in the SEC filings available in electronic format through SEC Edgar filings at [www.SEC.gov](http://www.SEC.gov) on the Internet.

**GENERAL:** Griffin Securities, Inc. (“Griffin Securities”) a FINRA member firm with its principal office in New York, New York, USA is an investment banking firm providing corporate finance, merger and acquisitions, brokerage, and investment opportunities for institutional, corporate, and private clients. The analyst(s) are employed by Griffin Securities. Our research professionals provide important input into our investment banking and other business selection processes. Our salespeople, traders, and other professionals may provide oral or written market commentary or trading strategies to our clients that reflect opinions that are contrary to the opinions expressed herein, and our proprietary trading and investing businesses may make investment decisions that are inconsistent with the recommendations expressed herein.

Griffin Securities may from time to time perform corporate finance or other services for some companies described herein and may occasionally possess material, nonpublic information regarding such companies. This information is not used in preparation of the opinions and estimates herein. While the information contained in this report and the opinions contained herein are based on sources believed to be reliable, Griffin Securities has not independently verified the facts, assumptions and estimates contained in this report. Accordingly, no representation or warranty, express or implied, is made as to, and no reliance should be placed on, the fairness, accuracy, completeness or correctness of the information and opinions contained in this report.

The information contained herein is not a complete analysis of every material fact in respect to any company, industry or security. This material should not be construed as an offer to sell or the solicitation of an offer to buy any security in any jurisdiction where such an offer or solicitation would be illegal. We are not soliciting any action based on this material. It is for the general information of clients of Griffin Securities. It does not take into account the particular investment objectives, financial situations, or needs of individual clients. Before acting on any advice or recommendation in this material, clients should consider whether it is suitable for their particular circumstances and, if necessary, seek professional advice. Certain transactions - including those involving futures, options, and other derivatives as well as non-investment-grade securities - give rise to substantial risk and are not suitable for all investors. The material is based on information that we consider reliable, but we do not represent that it is accurate or complete, and it should not be relied on as such. The information contained in this report is subject to change without notice and Griffin Securities assumes no responsibility to update the report. In addition, regulatory, compliance, or other reasons may prevent us from providing updates.

**DISCLOSURES FOR OTHER COMPANIES MENTIONED IN THIS REPORT:** To obtain applicable current disclosures in electronic format for the subject companies in this report, please refer to SEC Edgar filings at [www.SEC.gov](http://www.SEC.gov). In particular, for a description of risks and uncertainties related to subject companies’ businesses in this report, see the “Risk Factors” section in the SEC filings.