Precipio, Inc.
Form 424B5
August 01, 2017
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The information in this preliminary prospectus supplement is not complete and may be changed. Neither this preliminary prospectus supplement nor the accompanying prospectus is an offer to sell the securities described herein and neither is soliciting any offer to buy these securities in any jurisdiction where the solicitation, offer or sale is not permitted.

Filed Pursuant to Rule 424(b)(5)

Registration No. 333-201907

PRELIMINARY PROSPECTUS SUPPLEMENT SUBJECT TO COMPLETION DATED AUGUST 1, 2017

(To the Prospectus dated February 13, 2015)

Shares of Common Stock

Warrants to Purchase Shares of Common Stock

We are offering shares of our common stock, par value $0.01 per share, and warrants to purchase shares of common stock pursuant to this prospectus supplement and the accompanying prospectus.

Our common stock is listed on the NASDAQ Capital Market under the symbol PRPO. On July 28, 2017, the last reported sale price of our common stock on the NASDAQ Capital Market was $9.83 per share. Our warrants are not traded on any market.

Investing in our securities involves a high degree of risk. Please read the information contained in and incorporated by reference under the heading Risk Factors beginning on page S-9 of this prospectus supplement, and under similar heading in the other documents that are filed after the date hereof and incorporated by reference into this prospectus supplement.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

	Per Share and Warrant	Total
Public offering price	$	$
Underwriting discount[(1)]	$	$
Proceeds, before expenses	$	$

(1) See Underwriting on page S-37 of this prospectus supplement for additional information regarding underwriter compensation.

We have granted the underwriters an option exercisable for up to 45 days from the date of this prospectus supplement to purchase up to additional shares of common stock and/or warrants. If this option were exercised in full, we would receive $ of additional proceeds, before expenses.

The underwriters expect to deliver the shares of common stock and warrants to the purchasers on or about , 2017.

Aegis Capital Corp.

, 2017.

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You should rely only on the information contained in or incorporated by reference into this prospectus supplement and the accompanying base prospectus and any free writing prospectuses prepared by us or on our behalf. We have not authorized any person to provide any information or make any statement that differs from what is contained in this prospectus supplement, the accompanying base prospectus and any free writing prospectuses prepared by us or on our behalf. If any person does make a statement that differs from what is in

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this prospectus supplement, the accompanying base prospectus or any free writing prospectuses, you should not rely on it. This prospectus supplement is not an offer to sell, nor is it a solicitation of an offer to buy, these securities in any jurisdiction in which the offer or sale is not permitted. You should assume that the information contained in this prospectus supplement, the accompanying base prospectus, any free writing prospectus and the documents incorporated by reference is accurate only as of their respective dates, regardless of the time of delivery of this prospectus supplement, the accompanying base prospectus, any free writing prospectus or of any sale of our securities in this offering. Our business, financial condition, results of operations and prospects may have subsequently changed.

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ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement and the accompanying base prospectus are part of a registration statement on Form S-3 that the Company (then known as Transgenomic, Inc.), filed with the Securities and Exchange Commission, or SEC, in February 2015 using a shelf registration statement. Under the shelf registration statement, we may offer and sell any combination of securities described in the accompanying base prospectus in one or more offerings. The accompanying base prospectus provides you with a general description of the securities we may offer. Each time we use the accompanying base prospectus to offer securities, we will provide a prospectus supplement that will contain specific information about the terms of that offering. The prospectus supplement may also add, update or change information contained in the accompanying base prospectus. References in this prospectus supplement to the Company, we, us, or our, refer to Precipio, Inc. and its wholly-owned subsidiaries unless otherwise indicated.

This prospectus supplement, the accompanying base prospectus and the documents incorporated by reference herein include important information about us, our common stock and other information you should know before investing. This prospectus supplement describes the specific details regarding this offering, including the price, the amount of common stock and warrants being offered and the risks of investing in our securities. The accompanying base prospectus provides general information about us, some of which may not apply to this offering.

To the extent that any statement that we make in this prospectus supplement is inconsistent with statements made in the accompanying base prospectus, the statements made in this prospectus supplement will be deemed to modify or supersede those made in the accompanying base prospectus. You should read both this prospectus supplement and the accompanying base prospectus together with additional information described under the heading, Where You Can Find More Information.

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CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement and the documents incorporated by reference herein include forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. All statements other than statements of historical facts contained in this prospectus supplement and in the documents incorporated by reference herein, including statements regarding the future financial position, business strategy and plans and objectives of management for future operations, are forward-looking statements. The words believe, may, will, estimate, continue, anticip intend, should, plan, expect, and similar expressions, as they relate to us, are intended to identify forward-looking statements. We have based these forward-looking statements largely on current expectations and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy and financial needs. These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including, without limitation, those described in Risk Factors in this prospectus supplement, in our Annual Report on Form 10-K for the year ended December 31, 2016, and our subsequent filings with the SEC incorporated by reference herein, including, among other things:

- our expectations related to the use of proceeds from this offering;
- the progress, timing and amount of expenses associated with our development and commercialization activities;
- our plans and ability to develop and commercialize new products and services, and make improvements to our existing products and services;
- our ability to protect our intellectual property and operate our business without infringing upon the intellectual property rights of others;
- our ability or the amount of time it will take to achieve successful reimbursement of our existing and future products and services from third-party payors, such as commercial insurance companies and health maintenance organizations, and government insurance programs, such as Medicare and Medicaid;
- the accuracy of our estimates of the size and characteristics of the markets that may be addressed by our products;
- the success of our study to demonstrate the impact of academic pathology expertise on diagnostic accuracy, and any other studies or trials we may conduct;
- our intention to seek, and our ability to establish, strategic collaborations or partnerships for the development or sale of our products and the effectiveness of such collaborations or partnerships;

our expectations as to future financial performance, expense levels and liquidity sources;

our anticipated cash needs and our estimates regarding our capital requirements and our needs for additional financing, as well as our ability to obtain such additional financing on reasonable terms;

our ability to compete with other companies that are or may be developing or selling products that are competitive with our products;

our ability to build a sales force to market our products and services, and anticipated increases in our sales and marketing costs due to an expansion in our sales force and marketing activities;

federal and state regulatory requirements, including potential United States Food and Drug Administration regulation of our products or future products;

anticipated trends and challenges in our potential markets;

our ability to attract and retain key personnel; and

other factors discussed elsewhere in this prospectus supplement.

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These risks are not exhaustive. Other sections of this prospectus supplement and the documents incorporated by reference herein include additional factors which could adversely impact our business and financial performance. Moreover, we operate in a very competitive and rapidly changing environment.

New risk factors emerge from time to time and it is not possible for us to predict all risk factors, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements.

You should not rely upon forward-looking statements as predictions of future events. We cannot assure you that the events and circumstances reflected in the forward-looking statements will be achieved or occur. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements.

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SUMMARY

This summary highlights selected information appearing elsewhere or incorporated by reference in this prospectus supplement and accompanying prospectus and may not contain all of the information that is important to you. This prospectus supplement and the accompanying prospectus include or incorporate by reference information about the securities we are offering as well as information regarding our business and detailed financial data. You should read this prospectus supplement and the accompanying prospectus in their entirety, including the information incorporated by reference.

The Company

Overview

We are a cancer diagnostics company providing diagnostic products and services to the oncology market. We have built and continue to develop a platform designed to eradicate the problem of misdiagnosis by harnessing the intellect, expertise and technology developed within academic institutions and delivering quality diagnostic information to physicians and their patients worldwide. We operate a cancer diagnostic laboratory located in New Haven, Connecticut and have partnered with the Yale School of Medicine to capture the expertise, experience and technologies developed within academia so that we can provide a better standard of cancer diagnostics and solve the growing problem of cancer misdiagnosis. We also operate a research and development facility in Omaha, Nebraska which will focus on further development of ICE-COLD-PCR, or ICP, the patented technology described further below, which was exclusively licensed by us from Dana-Farber Cancer Institute, Inc., or Dana-Farber, at Harvard University. The research and development center will focus on the development of this technology, which we believe will enable us to commercialize other technologies developed by our current and future academic partners. Our platform connects patients, physicians and diagnostic experts residing within academic institutions. Launched in 2017, the platform facilitates the following relationships:

Patients: patients may search for physicians in their area and consult directly with academic experts that are on the platform. Patients may also have access to new academic discoveries as they become commercially available.

Physicians: physicians can connect with academic experts to seek consultations on behalf of their patients and may also provide consultations for patients in their area seeking medical expertise in that physician s relevant specialty. Physicians will also have access to new diagnostic solutions to help improve diagnostic accuracy.

Academic Experts: academic experts on the platform can make themselves available for patients or physicians seeking access to their expertise. Additionally, these experts have a platform available to commercialize their research discoveries.

We intend to continue updating our platform to allow for patient-to-patient communications and allow individuals to share stories and provide support for one another, to allow physicians to consult with their peers to discuss and share challenges and solutions, and to allow academic experts to interact with others in academia on the platform to discuss their research and cross-collaborate.

ICP was developed at Harvard and is licensed exclusively by us from Dana-Farber. The technology enables the detection of genetic mutations in liquid biopsies, such as blood samples. The field of liquid biopsies is a rapidly growing market, aimed at solving the challenge of obtaining genetic information on disease progression and changes from sources other than a tumor biopsy.

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Gene sequencing is performed on tissue biopsies taken surgically from the tumor site in order to identify potential therapies that will be more effective in treating the patient. There are several limitations to this process. First, surgical procedures have several limitations, including:

- Cost: surgical procedures are usually performed in a costly hospital environment. For example, according to a recent study the mean cost of lung biopsies is greater than $14,000; surgery also involves hospitalization and recovery time.

- Surgical access: various tumor sites are not always accessible (e.g. brain tumors), in which cases no biopsy is available for diagnosis.

- Risk: patient health may not permit undergoing an invasive surgery; therefore a biopsy cannot be obtained at all.

- Time: the process of scheduling and coordinating a surgical procedure often takes time, delaying the start of patient treatment.

Second, there are several tumor-related limitations that provide a challenge to obtaining such genetic information from a tumor:

- Tumors are heterogeneous by nature: a tissue sample from one area of the tumor may not properly represent the tumor s entire genetic composition; thus, the diagnostic results from a tumor may be incomplete and non-representative.

- Metastases: in order to accurately test a patient with metastatic disease, ideally an individual biopsy sample should be taken from each site (if those sites are even known). These biopsies are very difficult to obtain; therefore physicians often rely on biopsies taken from the primary tumor site.

The advent of technologies enabling liquid biopsies as an alternative to tumor biopsy and analysis is based on the fact that tumors (both primary and metastatic) shed cells and fragments of DNA into the blood stream. These blood samples are called liquid biopsies that contain circulating tumor DNA, or ctDNA, which hold the same genetic information found in the tumor(s). That tumor DNA is the target of genetic analysis. However, since the quantity of tumor DNA is very small in proportion to the normal (or healthy) DNA within the blood stream, there is a need to identify and separate the tumor DNA from the normal DNA.

ICP is an enrichment technology that enables the laboratory to focus its analysis on the tumor DNA by enriching, and thereby multiplying the presence of, tumor DNA, while maintaining the normal DNA at its same level. Once the enrichment process has been completed, the laboratory genetic testing equipment is able to identify genetic abnormalities presented in the ctDNA, and an analysis can be conducted at a higher level of sensitivity, to enable the detection of such genetic abnormalities. The technology is encapsulated into a chemical that is provided in the form of a kit and sold to other laboratories who wish to conduct these tests in-house. The chemical within the kit is added to the specimen preparation process, enriching the sample for the tumor DNA so that the analysis will detect those

genetic abnormalities.

Industry Problem

There is currently a significant problem with rates of misdiagnosis across numerous disease states (particularly in cancer) due to an inefficient industry. We believe that the diagnostic industry has been commoditized, focusing primarily on price and test turnaround times as competing factors, at the expense of quality and accuracy. Increasingly complex disease states are met with eroding specialization rather than increased expertise. According to a study conducted by the National Coalition of Health, this results in an industry with up to 28% cancer misdiagnosis rates which is failing to meet the needs of physicians, patients and the healthcare system as a whole. New technologies offer improved accuracy; however, many are either

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inaccessible, or are not economically practical for clinical use. Despite much publicity of the industry transitioning from fee-per-service to value-based payments, that transition has not yet occurred in diagnostics. When a patient is misdiagnosed, physicians end up administrating incorrect treatments, often creating adverse effects rather than improving outcomes, payers waste valuable treatment dollars applied incorrectly and can incur substantial downstream costs and, most importantly, patients pay the ultimate price with increased morbidity and mortality. According to a report by Pinnacle Health, the estimated cost of misdiagnosis to the healthcare system is $750 billion annually. We believe that the academic path of specialization produces the critical expertise necessary to correctly diagnose disease; and that academic institutions have an unlocked potential to address this problem. Our solution is to create an exclusive platform that harnesses academic expertise and proprietary technologies to deliver the highest standard of diagnostic accuracy and patient care. Physicians, hospitals, payers and, most importantly, patients all benefit from more accurate diagnostics.

Market

As a services and technology commercialization company, we currently participate in two segments within the U.S. domestic oncology diagnostics market. The first is the anatomic pathology services market, which is estimated to reach $22 billion by the end of 2022, growing at an average 8% compound annual growth rate from 2017 to 2021. The second segment is the liquid biopsy reagents/kits market. According to the Piper Jaffray report from September 2015 on the liquid biopsy market, the domestic market opportunity for the oncology liquid biopsy market is over $28 billion per year, and encompasses screening, therapy selection, treatment monitoring and recurrence. The current market size for new cancer diagnoses is 1.6 million new cases per year and over 15.5 million people living with cancer, and the cancer diagnostics market size in North America was estimated to be $50 billion in 2016. We believe additional opportunities exist in clinical trials searching for low cost and high quality solutions for patient selection and treatment monitoring.

Our Solution

Our Platform

Our platform is designed to provide physicians and their patients access to the necessary academic expertise and technology to properly diagnose disease. To our knowledge we are the only company focused on addressing the issue of diagnostic accuracy with an innovative, robust and scalable business model by:

- Providing physicians and their patients access to world-class academic experts and technologies.
- Allowing payers to benefit from quality-based outcomes to their patients and recognize cost savings.
- Enabling cross-collaboration between physicians and academic institutions to advance research and discovery.

Our exclusive agreement with the Department of Pathology at Yale University, or the Pathology Services Agreement, is part of a unique platform that to our knowledge is not offered by other commercial laboratories. Our customers are oncologists who biopsy their patients in order to confirm or rule out the presence of cancer. After our customers send the samples to us, we conduct all the technical tests at our New Haven facility. We then transmit the test results to the pathologists at Yale who have access to our laboratory information system from their respective offices, enabling

them to review and render their diagnostic interpretation of the test results, for reporting. In partnership with Yale faculty, we have developed a proprietary algorithm that is applied to each sample submitted to us for testing, resulting in our ability to render a more concise and accurate diagnosis. The final diagnostic results are prepared by Yale pathologists and integrated into the final report by us, and are then delivered electronically through our web portal to the referring clinician. The patient s insurance is billed for the services; we are paid for the technical work done at our laboratory; and Yale pathologists are paid by us for their diagnostic interpretation.

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We recently renewed the Pathology Services Agreement for an additional five-year term, effective as of June 2016, through June 2021. Under the Pathology Services Agreement, the Yale Department of Pathology may not provide the hematopathology services that it provides to us to any other commercial entity that is one of our competitors. The Pathology Services Agreement allows for termination by either party (i) for uncured breach by the other party, (ii) if either party has its respective license suspended or revoked, (iii) if the insurance coverage of either party is canceled or modified, (iv) if we fail to maintain or meet the requirements of Medicare conditions of participation, or (v) if we declare bankruptcy. The Pathology Services Agreement also provides that if the performance by either party (i) jeopardizes the licensure or accreditation of Yale or any Yale physician, (ii) jeopardizes either party s participation in Medicare, Medicaid or other federal, state or commercial reimbursement programs, (iii) violates any statute, ordinance or otherwise is deemed illegal, (iv) is deemed unethical by any recognized body, agency or association in the medical or laboratory fields, or (v) causes a substantial threat to Yale s tax-exempt status, then either party may initiate negotiations to amend the Pathology Services Agreement and the Pathology Services Agreement will terminate if a mutually agreed amendment is not executed by the parties within 30 days.

ICE-COLD-PCR

ICP technology was developed at Dana-Farber and is licensed by us. ICP is a unique, proprietary patented specimen enrichment technology that increases the sensitivity of molecular based tests from approximately 90-95% to 99-99.99%. Traditional molecular testing is done on tumor biopsies. These tests are typically conducted at disease onset, when the patient undergoes a biopsy. In the typical course of treatment, a patient is rarely re-biopsied, and therefore the only genetic information is based on the initial biopsy. Tumors are known to shed cells into the patient s blood stream, where they circulate alongside normal cells; however, existing testing methodologies are not sufficiently sensitive to differentiate between the tumor and normal cells. The increased sensitivity provided by ICP allows for testing of genetic mutations that occur within tumors to be conducted on peripheral blood samples, termed liquid biopsies. This technical capability enables physicians to test for genetic mutations without conducting a biopsy, through a simple blood test rather than a biopsy extracted from the actual tumor. The results of such tests can be used for diagnosis, prognosis and therapeutic decisions. The technology is encapsulated within a chemical (reagent) used during the specimen preparation process, which enriches (amplifies) the tumor DNA detected within the blood sample, while suppressing the normal DNA. In addition to offering this technology as a clinical service, we are developing panels that will be sold as reagent kits to other laboratories to set up this testing in their facilities. This enables other labs to improve their test sensitivity and render results on liquid biopsies. The business model of selling reagents to other laboratories both expands the reach and impact of the technology, while eliminating the reimbursement risks that we would face in running the tests in-house.

We license the ICP technology from Dana-Farber through a license agreement, or the License Agreement. The License Agreement grants us an exclusive license to the ICP technology, subject to a non-exclusive license granted to the U.S. government, in the areas of mutation detection using Sanger (di-deoxy) sequencing and mitochondrial DNA analysis for all research, diagnostic, prognostic and therapeutic uses in humans, animals, viruses, bacteria, fungi, plants or fossilized material. The License Agreement also grants us a non-exclusive license in the areas of mutation detection using DHPLC, surveyor-endonuclease-based mutation detection and second generation sequencing techniques. We paid Dana-Farber an initial license fee and are required to make milestone payments with respect to the first five licensed products or services we develop using the licensed technology as well as royalties ranging from high single to low double digits on net sales of licensed products and services for sales made by us and sales made to any distributors. The License Agreement remains in effect until we cease to sell licensed products or services under the agreement. Dana-Farber has the right to immediately terminate the License Agreement if (i) we cease to carry on our business with respect to licensed products and services, (ii) we fail to make any payments under the License Agreement (subject to a cure period), (iii) we fail to comply with due diligence obligations under the License Agreement (subject to a cure period),

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(iv) we default in our obligations to procure and maintain insurance as required by the License Agreement, (v) any of our officers is convicted of a felony relating to the manufacture, use, sale or importation of licensed products under the License Agreement, (vi) we materially breach any provision of the License Agreement (subject to a cure period), or (vii) we or Dana-Farber become insolvent. We may terminate the License Agreement for convenience upon 180 days prior written notice.

Reimbursement

Since cancer is typically a disease with an onset at a later age, the largest insurance provider which constitutes close to 32% of our patient cases is Medicare. The remaining patients are insured by private insurance companies who provide patient coverage and pay for patients health-related costs. The Center for Medicare and Medicaid Services, or CMS, typically publishes its rates annually, and providers such as us bill according to the codes relevant to the tests we conduct. Other private insurance companies will often follow suit and adjust their rates according to the published CMS rates.

Our Products

Our initial product offering consists of clinical diagnostic services harnessing the expertise of the Yale School of Medicine and the commercialization and application of ICP, a cutting-edge technology developed at Dana-Farber, part of Harvard University. Our clinical diagnostic services focus on the diagnosis of blood cancers and the delivery of an accurate diagnosis to oncologists, with demonstrated superior results through an exclusive partnership with Yale. We intend to enter into additional partnerships during 2017 and 2018. Our cutting-edge liquid biopsy technology, ICP, enables detection of abnormalities in blood samples (cfDNA) down to as low as .01%. This low-cost technology enables customers to conduct the tests in-house using existing mutation detection platforms and creates what we believe to be the only current economically viable option for liquid biopsy applications. Our customers are oncologists, hospitals, reference laboratories, and pharma and biotech companies, to whom we plan to cross-market other technologies (such as ICP) and services on our platform.

We built and obtained CLIA certification to operate our New Haven laboratory. The laboratory is approximately 3,000 square feet and has several sub-departments such as flow cytometry, immune-histochemistry, cytogenetics, and molecular testing. The laboratory is currently operated by five lab technicians and is supervised by a laboratory manager and a medical director. Our laboratory is inspected every two years by a Connecticut state-appointed inspection, and once approved by the state inspector, we are issued a CLIA-certificate. Furthermore, the laboratory supervisor and medical director must conduct a self-inspection every two years (rotating with the state inspection) and must submit those results to the state department of health.

The laboratory operations are governed by Standard Operating Procedure manuals, or SOPs, which detail each aspect of the laboratory environment including the work flow, quality control, maintenance, and safety. These SOPs are reviewed annually, approved and signed off by the laboratory manager and medical director.

Our Strategy

Our objective is to eradicate the problem of misdiagnosis by harnessing the intellect, expertise and technology developed within academic institutions and delivering quality diagnostic information to physicians and their patients worldwide. To achieve this objective our strategy is to focus our efforts on the following areas:

Clinical pathology services we intend to continue building our platform by increasing the number of academic experts available on our platform and partnering with other academic institutions, allowing us to expand our portfolio of services to cover additional types of cancer.

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Ice-Cold PCR we believe we can commercialize and develop new applications for our ICP technology, including:

- Developing specific application panels for patient monitoring for treatment resistance and disease recurrence;
- Building focused diagnostic and screening panels for initial disease identification;
- Leveraging our platform customers to generate demand for repeat, localized, in-house liquid biopsy testing; and
- Applying ICP technology to other markets, such as pre-natal and companion diagnostics.

New product pipeline through outsourced research and development we plan on utilizing our partnerships with academic institutions to gain access to newly-developed technologies. We also believe there is an opportunity to partner with biotechnology companies to introduce their products to the U.S. market through our platform.

Academic partnerships we intend to leverage the intellectual expertise and technologies developed within academic institutions. We believe we have validated this model through our partnership with the Yale School of Medicine and are currently in the process of adding new academic partners.

Competition

Our principal competition in clinical pathology services comes largely from two groups. The first group consists of companies that specialize in oncology and offer directly competing services to our diagnostic services. These companies often provide a high level of service focused on oncology and offer their services to oncologists and pathology departments within hospitals. Our competitors in this group include Genoptix, GenPath Diagnostics and Miraca Life Sciences. The second group consists of large commercial companies that offer a wide variety of laboratory tests ranging from simple chemistry tests to complex genetic testing. Our competitors in this group include LabCorp and Quest Diagnostics. We believe that companies in this industry primarily compete on price and speed results delivery. We have chosen to focus on the quality and accuracy of results. Within the liquid biopsy market, our competitors include Guardant Health and Trovagene, Inc.

Competitive Advantage

We capitalize on the intellectual expertise and technologies developed within academic institutions by academic experts. While several industry papers report a misdiagnosis rate as high as 28% of cases diagnosed, we believe that leveraging academic expertise in diagnosis can significantly reduce the number of patients being misdiagnosed. In an initial data set of over 100 clinical cases received and processed by us with a diagnosis rendered by Yale pathologists, we believe less than 1% have resulted in misdiagnosis. The diagnostic report provided by us was then requested by a patient or the patient s physician for a second opinion to be conducted by another laboratory. In those cases, less than 1% reported back a disagreement with the original primary diagnosis. While a minority of patients are treated in

academic centers and can benefit from that specialized expertise, the majority of patients are diagnosed by commercial reference laboratories. Comparatively, these commercial laboratories and diagnostic companies have broad access to and serve a majority of patients; however, we believe their lack of specialized expertise results in significantly higher misdiagnosis rates. Academic institutions also invest heavily in the development of new technologies, many of which are often used only within the academic institution and do not benefit outside patients. Our platform offers patients anywhere access to these innovative technologies developed within Yale and any other academic institutions we engage in the future.

In July 2017, after receiving approval from the Yale Human Investigation Committee, we commenced a study to demonstrate the impact of academic pathology expertise on diagnostic accuracy. The purpose of this

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study is to use data from a large set of patients to determine whether academic pathologists provide a higher level of accuracy of the diagnosis, improving patient care, as well as reducing the subsequent costs involved in treating the patient, compared to diagnosis conducted outside of an academic institution. The study is being conducted at the Department of Pathology at Yale School of Medicine.

The retrospective study will gather data on approximately 500 to 1,000 patients who have received an initial diagnosis, followed by a second opinion, and stratify them into two cohorts. The first cohort will consist of patients diagnosed initially outside of an academic institution, and then referred to Yale for treatment where they received a second opinion diagnosis by an academic pathologist at Yale. The second cohort will consist of patients initially diagnosed at Yale, who then proceeded to obtain a second opinion from an outside institution. The study will identify those patients where the second opinion differs from the initial diagnosis, suggesting a possible misdiagnosis. In those situations, the case will be referred to another academic institution to conduct a blinded, third evaluation in order to determine which diagnosis was correct. The study will then further evaluate the subsequent patient response due to the change in diagnosis, to determine the impact that the change in diagnosis had on the patient.

As part of the study, we have also partnered with the Department of Medicine at Thomas Jefferson University in Philadelphia, which routinely conducts research to evaluate the economic impact of various healthcare decisions, to quantify the cost of misdiagnosis within cancer treatment. In those situations where discordance is identified between the primary and secondary diagnosis, an evaluation will be made of pre-and-post diagnosis change in the course of treatment, to correlate both the healthcare dollars spent, and the clinical outcome.

Recent Events

Following the closing of the offering contemplated by this prospectus supplement, our Board of Directors intends to elect Jeffrey Cossman, M.D. and Doug Fisher to serve as directors of our company.

Merger Transaction

On June 29, 2017, the Company (then known as Transgenomic, Inc., or Transgenomic), completed its merger, or the Merger, with Precipio Diagnostics, LLC, a privately held Delaware limited liability company, or Precipio, in accordance with the terms of the Agreement and Plan of Merger, or the Merger Agreement, dated October 12, 2016, as amended on February 2, 2017 and June 29, 2017, by and among Transgenomic, Precipio and New Haven Labs Inc., or Merger Sub, a wholly-owned subsidiary of Transgenomic. Pursuant to the Merger Agreement, Merger Sub merged with and into Precipio, with Precipio surviving the Merger as a wholly-owned subsidiary of the combined company. In connection with the Merger, the Company changed its name from Transgenomic, Inc. to Precipio, Inc. and effected a 1-for-30 reverse stock split of its common stock.

Company Information

We were incorporated under the laws of the State of Delaware in March 1997. Our principal executive office is located at 4 Science Park, New Haven, Connecticut, 06511, and our telephone number is (203) 787-7888. Our website address is www.precipiodx.com. We do not incorporate the information on or accessible through our website into this prospectus, and you should not consider any information on, or that can be accessed through, our website as part of this prospectus. Our current and future annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and other filings with the SEC are available, free of charge, through our website as soon as reasonably practicable after we electronically file such materials with, or furnish them to, the SEC. Our SEC filings can be accessed through the investors section of our website. The information contained on, or accessible through, our website is not intended to be part of this prospectus or any report we file with, or furnish to, the SEC and incorporated

by reference herein. Our common stock trades on the NASDAQ Capital Market, or NASDAQ, under the symbol PRPO.

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THE OFFERING

Securities offered by us	Shares of common stock and warrants to purchase shares of common stock. The warrants will have a term of years and an exercise price of $ per share
Common stock outstanding after the offering	shares
Option to purchase additional shares	We have granted the underwriters an option to purchase up to additional shares of our common stock and/or additional warrants. This option is exercisable, in whole or in part, for a period of 45 days from the date of this prospectus supplement.
Use of proceeds	We expect the net proceeds from this offering will be approximately $ million (or $ million if the underwriters exercise their option to purchase additional shares and/or warrants in full), after deducting the underwriting discount and estimated offering expenses payable by us. We currently intend to use approximately $1.5 million of the net proceeds from this offering to repay the principal amount, together with interest, on our outstanding promissory notes. We intend to use the balance of the net proceeds from this offering for the growth of our sales force, progression of our product development and for working capital and other general corporate purposes. See Use of Proceeds on page S-30 of this prospectus supplement.
NASDAQ Capital Market symbol	PRPO
Risk factors	This investment involves a high degree of risk. See Risk Factors beginning on page S-9 of this prospectus supplement.

The number of shares of common stock outstanding after this offering is based on 6,607,966 shares outstanding as of June 30, 2017, and excludes as of such date:

- 24,925 shares of our common stock subject to outstanding options and stock appreciation rights, with a weighted average exercise price of $113.34 per share;
- 268,379 shares of our common stock subject to outstanding warrants, with a weighted average exercise price of $48.34 per share;

1,712,901 shares of our common stock issuable upon conversion of our outstanding Series A Convertible Preferrd Stock. The holders of our outstanding Series A Convertible Preferred Stock have orally agreed to convert all of their shares of Series A Convertible Preferred Stock into an aggregate of 1,712,901 shares of common stock, at the existing conversion rate of one share of common stock for one share of Series A Convertible Preferred Stock, upon the closing of this offering; and

666,666 shares of our common stock available for awards under our 2006 Equity Incentive Plan and 2017 Stock Option and Incentive Plan.

Except as otherwise noted, all information in this prospectus supplement assumes:

the issuance of 535,285 shares of common stock upon the automatic conversion of our outstanding convertible notes upon the closing of this offering.

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RISK FACTORS

Any investment in our securities involves a high degree of risk. In addition to the other information included or incorporated by reference in this prospectus supplement and the accompanying prospectus, you should carefully consider the important factors set forth under the heading Risk Factors starting on page 16 of our Annual Report on Form 10-K for the year ended December 31, 2016 and incorporated herein by reference before investing in our securities. For further details, see the sections titled Where You Can Find Additional Information and Incorporation of Certain Documents by Reference in this prospectus supplement.

Any of the risk factors set forth below or referred to above could significantly and negatively affect our business, results of operations or financial condition, which may lower the trading price of our common stock.

Risks Related to our Business and Strategy

We have incurred losses since our inception and expect to incur losses for the foreseeable future. We cannot be certain that we will achieve or sustain profitability.

We have incurred losses since our inception and expect to incur losses in the future. As of March 31, 2017 and December 31, 2016, we have an accumulated total deficit of approximately $11.6 million and $10.8 million, respectively. For the three months ended March 31, 2017 and the fiscal year ended December 31, 2016, we had a net loss and comprehensive loss attributable to common stockholders of approximately $0.8 million and $4.1 million, respectively. To date, we have experienced negative cash flow from development of our diagnostic technology, as well as from the costs associated with establishing a laboratory and building a sales force to market our products and services. We expect to incur substantial net losses for the foreseeable future to further develop and commercialize our diagnostic technology. We also expect that our selling, general and administrative expenses will continue to increase due to the additional costs associated with market development activities and expanding our staff to sell and support our products. Our ability to achieve or, if achieved, sustain profitability is based on numerous factors, many of which are beyond our control, including the market acceptance of our products, competitive product development and our market penetration and margins. We may never be able to generate sufficient revenue to achieve or, if achieved, sustain profitability.

Because of the numerous risks and uncertainties associated with further development and commercialization of our diagnostic technology and any future tests, we are unable to predict the extent of any future losses or when we will become profitable, if ever. We may never become profitable and you may never receive a return on an investment in our common stock. An investor in our common stock must carefully consider the substantial challenges, risks and uncertainties inherent in the development and commercialization of tests in the medical diagnostic industry. We may never successfully commercialize our diagnostic technology or any future tests, and our business may fail.

We will need to raise substantial additional capital to commercialize our diagnostic technology, and our failure to obtain funding when needed may force us to delay, reduce or eliminate our product development programs or collaboration efforts.

As of March 31, 2017, our cash balance was less than $0.1 million and our working capital was approximately negative $2.9 million. Due to our recurring losses from operations and the expectation that we will continue to incur losses in the future, we will be required to raise additional capital to complete the development and commercialization of our current product candidates. To date, to fund our operations and develop and commercialize our products, we have relied primarily on equity and debt financings. When we seek additional capital, we may seek to sell additional equity and/or debt securities or to obtain a credit facility, which we may not be able to do on favorable terms, or at

all. Our ability to obtain additional financing will be subject to a number of factors, including market conditions, our operating performance and investor sentiment. If we are

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unable to raise additional capital when required or on acceptable terms, we may have to significantly delay, scale back or discontinue the development and/or commercialization of one or more of our product candidates, restrict our operations or obtain funds by entering into agreements on unattractive terms.

The commercial success of our product candidates will depend upon the degree of market acceptance of these products among physicians, patients, health care payors and the medical community and on our ability to successfully market our product candidates.

Our products may never gain significant acceptance in the marketplace and, therefore, may never generate substantial revenue or profits for us. Our ability to achieve commercial market acceptance for our existing and future products will depend on several factors, including:

- our ability to convince the medical community of the clinical utility of our products and their potential advantages over existing diagnostics technology;
- the willingness of physicians and patients to utilize our products; and
- the agreement by commercial third-party payors and government payors to reimburse our products, the scope and amount of which will affect patients willingness or ability to pay for our products and will likely heavily influence physicians decisions to recommend our products.

In addition, physicians may rely on guidelines issued by industry groups, such as the National Comprehensive Cancer Network, medical societies, such as the College of American Pathologists, or CAP, or other key oncology-related organizations before utilizing any diagnostic test. Although we have a study underway to demonstrate the clinical utility of our existing products, none of our products are, and may never be, listed in any such guidelines.

We believe that publications of scientific and medical results in peer-reviewed journals and presentations at leading conferences are critical to the broad adoption of our products. Publication in leading medical journals is subject to a peer-review process, and peer reviewers may not consider the results of studies involving our products sufficiently novel or worthy of publication. The failure to be listed in physician guidelines or to be published in peer-reviewed journals could limit the adoption of our products. Failure to achieve widespread market acceptance of our products would materially harm our business, financial condition, and results of operations.

If we cannot compete successfully with our competitors, including new entrants in the market, we may be unable to increase or sustain our revenue or achieve and sustain profitability.

The medical diagnostic industry is intensely competitive and characterized by rapid technological progress. In each of our potential product areas, we face significant competition from large biotechnology, medical diagnostic and other companies. Our closest competitors fall largely into two groups, consisting of companies that specialize in oncology and offer directly competing services to our diagnostic services, offering their services to oncologists and pathology departments within hospitals, as well as large commercial companies that offer a wide variety of laboratory tests that range from simple chemistry tests to complex genetic testing. The technologies associated with the molecular diagnostics industry are evolving rapidly and there is intense competition within such industry. Certain molecular diagnostics companies have established technologies that may be competitive to our product candidates and any future tests that we develop. Some of these tests may use different approaches or means to obtain diagnostic results, which

could be more effective or less expensive than our tests for similar indications. Moreover, these and other future competitors have or may have considerably greater resources than we do in terms of technology, sales, marketing, commercialization and capital resources. These competitors may have substantial advantages over us in terms of research and development expertise, experience in clinical studies, experience in regulatory issues, brand name exposure and expertise in sales and marketing as well as in operating central laboratory services. Many of these organizations have financial, marketing and human

resources greater than ours; therefore, there can be no assurance that we can successfully compete with present or potential competitors or that such competition will not have a materially adverse effect on our business, financial position or results of operations.

Since our diagnostic technology is under development, we cannot predict the relative competitive position of any product based upon our diagnostic technology. However, we expect that the following factors will determine our ability to compete effectively: safety and efficacy; product price; turnaround time; ease of administration; performance; reimbursement; and marketing and sales capability.

In July 2017, we commenced a study to demonstrate the impact of academic pathology expertise on diagnostic accuracy. The is no assurance that this study, or other studies or trials we may conduct, will demonstrate favorable results. If the results of this study, or other studies or trials we may conduct, demonstrate unfavorable or inconclusive results, customers may choose our competitors products over our products and our commercial opportunities may be reduced or eliminated.

We believe that many of our competitors spend significantly more on research and development-related activities than we do. Our competitors may discover new diagnostic tools or develop existing technologies to compete with our diagnostic technology. Our commercial opportunities will be reduced or eliminated if these competing products are more effective, are more convenient or are less expensive than our product candidates.

We may not be able to develop new products or enhance the capabilities of our systems to keep pace with rapidly changing technology and customer requirements, which could have a material adverse effect on our business and operating results.

Our success depends on our ability to develop new products and applications for our diagnostic technology in existing and new markets, while improving the performance and cost-effectiveness of our systems. New technologies, techniques or products could emerge that might offer better combinations of price and performance than our current or future products and systems. Existing or future markets for our products, as well as potential markets for our diagnostic product candidates, are characterized by rapid technological change and innovation. It is critical to our success that we anticipate changes in technology and customer requirements and successfully introduce new, enhanced and competitive technologies to meet our customers and prospective customers needs on a timely and cost-effective basis. At the same time, however, we must carefully manage the introduction of new products. If customers believe that such products will offer enhanced features or be sold for a more attractive price, they may delay purchases until such products are available. We may also have excess or obsolete inventory of older products as we transition to new products and our experience in managing product transitions is very limited. If we do not successfully innovate and introduce new technology into our product lines or effectively manage the transitions to new product offerings, our revenues and results of operations will be adversely impacted.

Competitors may respond more quickly and effectively than we do to new or changing opportunities, technologies, standards or customer requirements. We anticipate that we will face increased competition in the future as existing companies and competitors develop new or improved products and as new companies enter the market with new technologies

We currently depend on the services of pathologists at a single academic partner and the loss of the services of these pathologists would adversely impact our ability to develop, commercialize and deliver our products.

We currently depend on the services of pathologists at a single academic partner to review and render their diagnostic interpretation of our test results and to prepare the final diagnostic results that we integrate into our final report for our

customers. Although we are in the process of adding new academic partners, it would be difficult to replace the services provided by the pathologists at our current partner if their services became unavailable to us for any reason prior to adding other academic partners. If this academic partner does not

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successfully carry out its contractual duties or obligations and meet expected deadlines; if this partner needs to be replaced, or if the quality or accuracy of the services provided by the pathologists at this partner were compromised for any reason, we would likely not be able to provide our services in a manner expected by our customers, and our financial results and the commercial prospects for our products could be harmed. The loss of the services of these pathologists would severely harm our ability to develop, commercialize and deliver our products, and our business, financial condition and operating results would be materially adversely affected.

We depend upon our officers, and if we are not able to retain them or recruit additional qualified personnel, the commercialization of our product candidates and any future tests that we develop could be delayed or negatively impacted.

Our success is largely dependent upon the continued contributions of our officers. Our success also depends in part on our ability to attract and retain highly qualified scientific, commercial and administrative personnel. In order to pursue our test development and commercialization strategies, we will need to attract and hire additional personnel with specialized experience in a number of disciplines, including assay development, laboratory and clinical operations, sales and marketing, billing and reimbursement. There is intense competition for personnel in the fields in which we operate. If we are unable to attract new employees and retain existing employees, the development and commercialization of our product candidates and any future tests could be delayed or negatively impacted.

We will need to increase the size of our organization, and we may experience difficulties in managing growth.

We are a small company with 30 full-time employees as of July 31, 2017. Future growth will impose significant added responsibilities on members of management, including the need to identify, attract, retain, motivate and integrate highly skilled personnel. We may increase the number of employees in the future depending on the progress of our development of diagnostic technology. Our future financial performance and our ability to commercialize our product candidates and to compete effectively will depend, in part, on our ability to manage any future growth effectively. To that end, we must be able to:

manage our clinical studies effectively;

integrate additional management, administrative, manufacturing and regulatory personnel;

maintain sufficient administrative, accounting and management information systems and controls; and

hire and train additional qualified personnel.

We may not be able to accomplish these tasks, and our failure to accomplish any of them could harm our financial results.

We currently have limited experience in marketing products. If we are unable to establish marketing and sales capabilities and retain the proper talent to execute on our sales and marketing strategy, we may not be able to generate product revenue.

We have developed limited experience in marketing our products and services. We intend to continue to develop our in-house marketing organization and sales force, which will require significant capital expenditures, management resources and time. We will have to compete with other diagnostic companies to recruit, hire, train and retain marketing and sales personnel.

If we are unable to further grow our internal sales, marketing and distribution capabilities, we will pursue collaborative arrangements regarding the sales and marketing of our product candidates or future products, however, we may not be able to establish or maintain such collaborative arrangements, or if we are able to do so, they may not have effective sales forces. Any revenue we receive will depend upon the efforts of such third parties, which may not be successful. We may have little or no control over the marketing and sales efforts of

such third parties and our revenue from product sales may be lower than if we had commercialized our product candidates ourselves. We also face competition in our search for third parties to assist us with the sales and marketing efforts of our product candidates.

We may not realize the anticipated benefits of our merger with Precipio Diagnostics.

In June 2017, we completed our merger with Precipio Diagnostics, LLC, or Precipio. Integrating the operations of the businesses of Precipio successfully or otherwise realizing any of the anticipated benefits of the merger with Precipio, including anticipated cost savings and additional revenue opportunities, involves a number of potential challenges. The failure to meet these integration challenges could seriously harm our results of operations and the market price of our common stock may decline as a result.

Realizing the benefits of the merger will depend in part on the integration of information technology, operations and personnel. These integration activities are complex and time-consuming and we may encounter unexpected difficulties or incur unexpected costs, including:

- our inability to achieve the cost savings and operating synergies anticipated in the merger, including synergies relating to increased purchasing efficiencies and a reduction in costs associated with the merger;
- diversion of management attention from ongoing business concerns to integration matters;
- difficulties in consolidating and rationalizing information technology platforms and administrative infrastructures;
- complexities associated with managing the geographic separation of the combined businesses and consolidating multiple physical locations where management may determine consolidation is desirable;
- difficulties in integrating personnel from different corporate cultures while maintaining focus on providing consistent, high quality customer service;
- challenges in demonstrating to our customers that the merger will not result in adverse changes in customer service standards or business focus; and
- possible cash flow interruption or loss of revenue as a result of change of ownership transitional matters.

We may not successfully integrate the operations of the businesses in a timely manner and may not realize the anticipated net reductions in costs and expenses and other benefits and synergies of the merger with Precipio to the extent, or in the timeframe, anticipated. In addition to the integration risks discussed above, our ability to realize these net reductions in costs and expenses and other benefits and synergies could be adversely impacted by practical or legal constraints on our ability to combine operations.

Reimbursement and Regulatory Risks Relating to Our Business

If commercial third-party payors or government payors fail to provide coverage or adequate reimbursement, or if there is a decrease in the amount of reimbursement for our existing products or any future products we develop, our ability to successfully commercialize our technology, and our revenue and prospects for profitability, would be harmed.

Sales of our existing and any future products we develop will depend, in large part, upon the availability of reimbursement from third-party payors. These third-party payors include government healthcare programs such as Medicare and Medicaid, managed care providers, accountable care organizations, private health insurers, and other organizations. In particular, we believe that obtaining a positive local coverage determination or national coverage determination, and a favorable reimbursement rate from the Centers for Medicare & Medicaid Services,

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or CMS, or the applicable Medicare Administrative Contractor, or MAC, for each of our existing products, and any future products we develop, across substantially all medically indicated cancers will be a necessary element in achieving material commercial success. Physicians and patients may not order our products unless commercial third-party payors and government payors authorize such ordering and pay for all, or a substantial portion, of the list price, and certain commercial third-party payors may not agree to reimburse our existing products or future products if CMS or the MACs assigned to the jurisdictions in which our operational laboratory facilities are located do not issue positive coverage decisions for such products.

Commercial third-party payors and government payors are increasingly attempting to contain healthcare costs by demanding price discounts, by limiting coverage on which diagnostic products they will pay for and the amounts that they will pay for new molecular diagnostic products, and by creating conditions to reimbursement, such as coverage eligibility requirements based upon clinical evidence development involving research studies and the collection of physician decision impact and patient outcomes data. Because of these cost-containment trends, commercial third-party payors and government payors that currently provide or in the future may provide reimbursement for one or more of our products may reduce, suspend, revoke, or discontinue payments or coverage at any time, including those payors that designate one or more of our existing products and/or clinically indicated tumor types as experimental and investigational. Payors may also create conditions to coverage or contract with third-party vendors to manage laboratory benefit coverage, in both cases creating burdens for ordering physicians and patients that may make our products more difficult to sell. The percentage of submitted claims that are ultimately paid, the length of time to receive payment on claims, and the average reimbursement of those paid claims, is likely to vary from period to period.

As a result, there is significant uncertainty surrounding whether the use of products that incorporate new technology, such as our products, will be eligible for coverage by commercial third-party payors and government payors or, if eligible for coverage, what the reimbursement rates will be for these products. The fact that a diagnostic product has been approved for reimbursement in the past, or has received U.S. Food and Drug Administration, or FDA, approval, for any particular indication or in any particular jurisdiction, does not guarantee that such diagnostic product will remain approved for reimbursement or that similar or additional diagnostic products and/or clinically indicated tumor types will be approved in the future. Reimbursement of our existing and future products by commercial third-party payors and government payors may depend on a number of factors, including a payor s determination that our existing and future products are:

- not experimental or investigational;
- medically reasonable and necessary;
- appropriate for the specific patient;
- cost effective;
- supported by peer-reviewed publications;

included in clinical practice guidelines and pathways; and

supported by clinical utility and health economic studies demonstrating improved outcomes and cost effectiveness.

Market acceptance, sales of products based upon our diagnostic technology, and our profitability may depend on reimbursement policies and health care reform measures. Several entities conduct technology assessments of medical tests and devices and provide the results of their assessments for informational purposes to other parties. These assessments may be used by third-party payors and health care providers as grounds to deny coverage for a test or procedure. The levels at which government authorities and third-party payors, such as private health insurers and health maintenance organizations, may reimburse the price patients pay for such products could affect whether we are able to commercialize our products. Our product candidates may receive negative assessments that may impact our ability to receive reimbursement of the test. Since each payor makes its

own decision as to whether to establish a policy to reimburse our test, seeking these approvals may be a time-consuming and costly process. We cannot be sure that reimbursement in the United States or elsewhere will be available for any of our products in the future. If reimbursement is not available or is limited, we may not be able to commercialize our products.

The United States and foreign governments continue to propose and pass legislation designed to reduce the cost of healthcare. We expect that there will continue to be federal and state proposals to implement governmental controls or impose healthcare requirements. In addition, the Medicare program and increasing emphasis on managed or accountable care in the United States will continue to put pressure on product utilization and pricing. Utilization and cost control initiatives could decrease the volume of orders and payment that we would receive for any products in the future, which would limit our revenue and profitability. If we are unable to obtain reimbursement approval from commercial third-party payors and Medicare and Medicaid programs for our product candidates, or if the amount reimbursed is inadequate, our ability to generate revenues could be limited.

Changes in the way that the FDA regulates laboratory tests developed, manufactured, validated, and performed by laboratories like ours could result in additional expense in offering our current and any future products or even possibly delay or suspend development, manufacture, or commercialization of such products.

The FDA does not currently regulate most laboratory developed tests, or LDTs. The FDA historically took the position that, although such LDTs are medical devices, it would exercise enforcement discretion by not requiring compliance with the Federal Food, Drug, and Cosmetic Act, or the FDCA, or its regulations. However, in June 2010, the FDA announced that it intended to no longer exercise enforcement discretion for LDTs and in October 2014, the FDA published two draft guidance documents that, if finalized, would implement a regulatory approach for most LDTs. In the draft guidance documents, the FDA stated that it had serious concerns regarding the lack of independent review of the evidence of clinical validity of LDTs and asserted that the requirements under Clinical Laboratory Improvement Amendments, or CLIA, do not address the clinical validity of any LDT. The draft guidance documents proposed to impose a risk-based, phased-in approach for LDTs similar to the existing framework for *in vitro* diagnostic devices. In November 2016, the FDA announced that it would not finalize the draft guidance documents for LDTs prior to the end of the Obama administration.

In January 2017, the FDA released a discussion paper synthesizing public comments on the 2014 draft guidance documents and outlining a possible approach to regulation of LDTs. The discussion paper has no legal status and does not represent a final version of the LDT draft guidance documents. In the discussion paper, the FDA states that there is a growing consensus that additional oversight of LDTs is necessary. Similar to the FDA s 2014 draft guidance, the FDA s discussion paper proposes a risk-based framework that would require most LDTs to comply with most of the FDA s regulatory requirements for medical devices. Unlike the draft guidance, however, the discussion paper proposes to exempt currently marketed LDTs from premarket review, requiring only new or modified tests to be approved or cleared by the agency. In addition, the FDA proposed requiring LDTs to comply with only a subset of the medical device quality system regulations, or QSRs, and proposed other changes from the 2014 draft guidance. We cannot predict whether the FDA will take action to regulate LDTs under the new administration or what approach the FDA will seek to take.

Legislative proposals have been introduced in Congress or publicly circulated, each of which would implement differing approaches to the regulation of LDTs. We cannot predict whether any of these legislative proposals will be enacted into law or the impact such new legal requirements would have on our business.

In addition, in November 2013, the FDA finalized guidance regarding the sale and use of products labeled for research or investigational use only. Among other things, the guidance states that the FDA continues to be concerned about

distribution of research- or investigational-use only products intended for clinical diagnostic use. The guidance states that the FDA will assess whether a manufacturer of such research- or investigational-use only products intends its products be used for clinical diagnostic purposes by examining the totality of circumstances, including advertising, instructions for clinical interpretation, presentations that describe clinical

use, and specialized technical support such as assistance performing clinical validation, surrounding the distribution of the product in question. The FDA has advised that if evidence demonstrates that a product is inappropriately labeled for research- or investigational-use only, the device could be deemed misbranded and adulterated within the meaning of the FDCA. If the FDA were to undertake enforcement actions, some of our suppliers may cease selling research-use only products to us, and any failure to obtain an acceptable substitute could significantly and adversely affect our business, financial condition and results of operations.

For tests that are subject to FDA regulation, we may not be able to obtain timely approvals for our tests or otherwise comply with FDA regulatory requirements, which could delay or prevent us from commercializing our tests or subject us to enforcement action and harm our business.

If the FDA takes action to finalize and implement a regulatory system for LDTs, or if legislation is enacted that subjects LDTs to FDA regulation, we would need to comply with FDA regulatory requirements for our LDTs or any future LDTs intended for clinical use. For products that are subject to FDA requirements, including requirements for premarket clearance or approval, we may not be able to obtain such clearance or approvals on a timely basis, or at all. Our business could be negatively impacted if we are required to stop selling molecular information products pending their clearance or approval, or the launch of any new products that we develop could be delayed. The cost of conducting clinical trials and otherwise developing data and information to support premarket applications may be significant. In order to conduct a clinical investigation involving human subjects for the purpose of demonstrating the safety and effectiveness of a device, a sponsor of an investigation must, among other things, apply for and obtain institutional review board, or IRB, approval of the proposed investigation. In addition, if the clinical study involves a significant risk (as defined by the FDA) to human health, the sponsor of the investigation must also submit and obtain FDA approval of an investigational device exemption, or IDE, application. We or the applicable study sponsor, as applicable, may not be able to obtain FDA and/or IRB approval to undertake clinical trials in the United States for any new devices we intend to market in the United States.

If a product is classified as a Class III medical device, that product would likely be required to be approved by the FDA under a premarket approval, or PMA, which must be supported by valid scientific evidence to demonstrate a reasonable assurance of safety and effectiveness of the subject product, typically including the results of human clinical trials that demonstrate the clinical utility of that product. During the review of our PMAs, the FDA may indicate areas in which the FDA believes additional data or information is necessary to reach a decision on the application. We may need to expend significant time and resources in responding to such FDA requests, which could include performing additional testing or developing new data to support the PMA. Depending on the nature of the requests, we may not be able to provide the data or information that the FDA believes necessary to resolve the deficiencies.

For devices not subject to a PMA, we may be required to submit either a de novo reclassification request or, if classified as a Class II medical device, a premarket notification or 510(k). Under the 510(k) process, we must demonstrate that our products are substantially equivalent in technological characteristics and intended use to legally-marketed predicate devices. If we are unable to identify an appropriate predicate that is substantially equivalent to our device, we would be required to submit a PMA or a de novo reclassification request. The FDA s 510(k) clearance process usually takes from four to twelve months, but it can take longer. Under the de novo process, we may request that the FDA classify a low or moderate risk device that lacks an appropriate predicate as a Class I or Class II device. The de novo process typically requires the development of clinical data and usually takes between six to twelve months from the time of submission of the de novo application, but can take longer.

In addition, as part of its review of a PMA, the FDA may conduct preapproval inspections pursuant to the FDA s Bioresearch Monitoring (BIMO) program. During such inspections, FDA investigators may review the data and

information supporting our PMA applications or may review the procedures and systems used to design or manufacture the device that is under review. The FDA may indicate areas where additional data or information is

necessary, or areas where corrective or preventive actions should be implemented. We may need to expend significant time and resources in responding to such FDA requests, and depending on the nature of the requests, we may not be able to provide the data or information or implement the actions that the FDA believes are necessary.

After approval, products subject to FDA regulation are required to comply with post-market requirements. Among the requirements, we and our suppliers must comply with the FDA s QSR, which sets forth requirements for manufacturers of devices, including the methods and documentation for the design, control testing, quality assurance, labeling, packaging, storage, and shipping of our devices. Further, if there are any modifications made to our PMA-approved marketed products, a PMA supplement may be required to be submitted to, and approved by, the FDA before the modified device may be marketed. Other post-market requirements include facility registration, product listing, adverse event reporting, recalls, corrections and removals, and restrictions on advertising and promotion. These requirements could subject our business to further regulatory risks and costs. The FDA enforces the requirements of the FDCA through announced and unannounced inspections. Failure to comply with the FDA s view of our satisfaction of applicable regulatory requirements could require us to expend time and resources to respond to the FDA s observations and to implement corrective and preventive actions, as appropriate. If we cannot resolve such issues to the satisfaction of the FDA, we may be subject to enforcement actions, including untitled or warning letters, fines, injunctions, or civil or criminal penalties. In addition, we could be subject to a recall or seizure of current or future products, operating restrictions, a partial suspension, or a total shutdown of production. Any such enforcement action would have a material adverse effect on our business, financial condition, and operations.

We are subject to the data privacy, security and breach notification requirements of HIPAA, HITECH and other data privacy and security laws, and the failure to comply with these rules, or allegations that we have failed to do so, could result in civil or criminal sanctions.

Numerous federal and state laws and regulations, including the Health Insurance Portability and Accountability Act of 1996, or HIPAA, and the Health Information Technology for Economic and Clinical Health Act, as amended, or HITECH, govern the collection, dissemination, security, use and confidentiality of patient-identifiable health information. As required by HIPAA, the United States Department of Health and Human Services, or HHS, has adopted standards to protect the privacy and security of this health-related information. The HIPAA privacy regulations contain detailed requirements concerning the use and disclosure of individually identifiable health information and the grant of certain rights to patients with respect to such information by covered entities. Because of our CLIA laboratory we are a covered entity under HIPAA. We have taken actions to comply with the HIPAA privacy regulations including the creation and implementation of policies and procedures, staff training, execution of HIPAA-compliant contractual arrangements with certain service providers and various other measures. Although we believe we are in substantial compliance, ongoing implementation and oversight of these measures involves significant time, effort and expense.

In addition to the privacy requirements, HIPAA covered entities must implement certain administrative, physical, and technical security standards to protect the integrity, confidentiality and availability of certain electronic health-related information received, maintained, or transmitted by covered entities or their business associates. Although we have taken actions in an effort to be in compliance with these security regulations, a security incident that bypasses our information security systems causing an information security breach, loss of protected health information, or PHI, or other data subject to privacy laws or a material disruption of our operational systems could have a material adverse effect on our business, along with fines. Furthermore, ongoing implementation and oversight of these security measures involves significant time, effort and expense.

Further, HITECH, as implemented in part by an omnibus final rule published in the Federal Register on January 25, 2013, further requires that patients be notified of any impermissible acquisition, access, use, or disclosure of their

unsecured PHI that compromises the privacy or security of such information. HHS has established the presumption that all impermissible uses or disclosures of unsecured PHI constitute breaches

unless the covered entity or business associate establishes affirmatively through a risk analysis that there is a low probability the information has been compromised. HITECH and implementing regulations specify that such notifications must be made without unreasonable delay and in no case later than 60 calendar days after discovery of the breach. Breaches affecting 500 patients or more must be reported immediately to HHS, which will post the name of the breaching entity on its public website. Furthermore, breaches affecting 500 patients or more in the same state or jurisdiction must also be reported to the local media. If a breach involves fewer than 500 people, the covered entity must record it in a log and notify HHS of such breaches at least annually. These breach notification requirements apply not only to impermissible disclosures of unsecured PHI to outside third parties but also to impermissible internal access to or use of such PHI. All breaches also require written notice to be sent to affected individuals.

The scope of the privacy and security requirements under HIPAA was substantially expanded by HITECH, which also increased penalties for violations. Currently, violations of the HIPAA privacy, security and breach notification standards may result in civil penalties ranging from $100 to $50,000 per violation, subject to a cap of $1,500,000 in the aggregate for violations of the same standard in a single calendar year. The amount of penalty that may be assessed depends, in part, upon the culpability of the applicable covered entity or business associate in committing the violation. HITECH also authorized state attorneys general to file suit on behalf of residents of their states. Applicable courts may be able to award damages, costs and attorneys fees related to violations of HIPAA in such cases. HITECH also mandates that the Secretary of HHS conduct periodic compliance audits of a cross-section of HIPAA covered entities and business associates. Every covered entity and business associate is subject to being audited, regardless of the entity s compliance record.

State laws may impose more protective privacy restrictions related to health information and may afford individuals a private right of action with respect to the violation of such laws. Both state and federal laws are subject to modification or enhancement of privacy protection at any time. We are subject to any federal or state privacy-related laws that are more restrictive than the privacy regulations issued under HIPAA. These statutes vary and could impose additional requirements on us and more severe penalties for disclosures of health information. If we fail to comply with HIPAA, similar state laws or any new laws, including laws addressing data confidentiality, security or breach notification, we could incur substantial monetary penalties and substantial damage to our reputation.

States may also impose restrictions related to the confidentiality of personal information that is not considered PHI under HIPAA, including certain identifying information and financial information of our patients. These state laws may impose additional notification requirements in the event of a breach of such personal information. Failure to comply with such data confidentiality, security and breach notification laws may result in substantial monetary penalties.

HIPAA and HITECH also include standards for common healthcare electronic transactions and code sets, such as claims information, plan eligibility and payment information. Covered entities such as us (with our CLIA laboratory) are required to conform to such transaction set standards.

We may become subject to the Anti-Kickback Statute, Stark Law, False Claims Act, Civil Monetary Penalties Law and may be subject to analogous provisions of applicable state laws and could face substantial penalties if we fail to comply with such laws.

There are several federal laws addressing fraud and abuse that apply to businesses that receive reimbursement from a federal health care program. There are also a number of similar state laws covering fraud and abuse with respect to, for example, private payors, self-pay and insurance. Currently, we receive a substantial percentage of our revenue from private payors and from Medicare. Accordingly, our business is subject to federal fraud and abuse laws, such as the Anti-Kickback Statute, the Stark Law, the False Claims Act, the Civil Monetary Penalties Law and other similar

laws. Moreover, we are already subject to similar state laws. We have operated, and intend to continue to operate, our business in compliance with these laws. However, these laws are subject to

modification and changes in interpretation, and are enforced by authorities vested with broad discretion. Federal and state enforcement entities have significantly increased their scrutiny of healthcare companies and providers which has led to investigations, prosecutions, convictions and large settlements. We continually monitor developments in this area. If these laws are interpreted in a manner contrary to our interpretation or are reinterpreted or amended, or if new legislation is enacted with respect to healthcare fraud and abuse, illegal remuneration, or similar issues, we may be required to restructure our affected operations to maintain compliance with applicable law. There can be no assurances that any such restructuring will be possible or, if possible, would not have a material adverse effect on our results of operations, financial position, or cash flows.

Anti-Kickback Statute

A federal law commonly referred to as the Anti-Kickback Statute prohibits the knowing and willful offer, payment, solicitation or receipt of remuneration, directly or indirectly, in return for the referral of patients or arranging for the referral of patients, or in return for the recommendation, arrangement, purchase, lease or order of items or services that are covered, in whole or in part, by a federal healthcare program such as Medicare or Medicaid. The term remuneration has been broadly interpreted to include anything of value such as gifts, discounts, rebates, waiver of payments or providing anything at less than its fair market value. The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, or the PPACA, amended the intent requirement of the Anti-Kickback Statute such that a person or entity can be found guilty of violating the statute without actual knowledge of the statute or specific intent to violate the statute. Further, the PPACA now provides that claims submitted in violation of the Anti-Kickback Statute constitute false or fraudulent claims for purposes of the federal False Claims Act, or FCA, including the failure to timely return an overpayment. Many states have adopted similar prohibitions against kickbacks and other practices that are intended to influence the purchase, lease or ordering of healthcare items and services reimbursed by a governmental health program or state Medicaid program. Some of these state prohibitions apply to remuneration for referrals of healthcare items or services reimbursed by any third-party payor, including commercial payors and self-pay patients.

Stark Law

Section 1877 of the Social Security Act, or the Stark Law, prohibits a physician from referring a patient to an entity for certain designated health services reimbursable by Medicare if the physician (or close family members) has a financial relationship with that entity, including an ownership or investment interest, a loan or debt relationship or a compensation relationship, unless an exception to the Stark Law is fully satisfied. The designated health services covered by the law include, among others, laboratory and imaging services. Some states have self-referral laws similar to the Stark Law for Medicaid claims and commercial claims.

Violation of the Stark Law may result in prohibition of payment for services rendered, a refund of any Medicare payments for services that resulted from an unlawful referral, $15,000 civil monetary penalties for specified infractions, criminal penalties, and potential exclusion from participation in government healthcare programs, and potential false claims liability. The repayment provisions in the Stark Law are not dependent on the parties having an improper intent; rather, the Stark Law is a strict liability statute and any violation is subject to repayment of all amounts arising out of tainted referrals. If physician self-referral laws are interpreted differently or if other legislative restrictions are issued, we could incur significant sanctions and loss of revenues, or we could have to change our arrangements and operations in a way that could have a material adverse effect on our business, prospects, damage to our reputation, results of operations and financial condition.

False Claims Act

The FCA prohibits providers from, among other things, (1) knowingly presenting or causing to be presented, claims for payments from the Medicare, Medicaid or other federal healthcare programs that are false or fraudulent; (2) knowingly making, using or causing to be made or used, a false record or statement to get a false

or fraudulent claim paid or approved by the federal government; or (3) knowingly making, using or causing to be made or used, a false record or statement to avoid, decrease or conceal an obligation to pay money to the federal government. The qui tam or whistleblower provisions of the FCA allow private individuals to bring actions under the FCA on behalf of the government. These private parties are entitled to share in any amounts recovered by the government, and, as a result, the number of whistleblower lawsuits that have been filed against providers has increased significantly in recent years. Defendants found to be liable under the FCA may be required to pay three times the actual damages sustained by the government, plus civil penalties ranging between $5,500 and $11,000 for each separate false claim.

There are many potential bases for liability under the FCA. The government has used the FCA to prosecute Medicare and other government healthcare program fraud such as coding errors, billing for services not provided, and providing care that is not medically necessary or that is substandard in quality. The PPACA also provides that claims submitted in connection with patient referrals that result from violations of the Anti-Kickback Statute constitute false claims for the purpose of the FCA, and some courts have held that a violation of the Stark law can result in FCA liability, as well. In addition, a number of states have adopted their own false claims and whistleblower provisions whereby a private party may file a civil lawsuit in state court. We are required to provide information to our employees and certain contractors about state and federal false claims laws and whistleblower provisions and protections.

Civil Monetary Penalties Law

The Civil Monetary Penalties Law prohibits, among other things, the offering or giving of remuneration to a Medicare or Medicaid beneficiary that the person or entity knows or should know is likely to influence the beneficiary s selection of a particular provider or supplier of items or services reimbursable by a federal or state healthcare program. This broad provision applies to many kinds of inducements or benefits provided to patients, including complimentary items, services or transportation that are of more than a nominal value. This law could affect how we have to structure our operations and activities.

Healthcare policy changes, including legislation reforming the U.S. healthcare system, may have a material adverse effect on our financial condition, results of operations, and cash flows.

In March 2010, legislation collectively referred to as the Affordable Care Act, or ACA, was enacted in the United States. The ACA, as subsequently amended, made a number of substantial changes in the way healthcare is financed by both governmental and private insurers. Among other things, the ACA:

- requires each medical device manufacturer and importer to pay an excise tax equal to 2.3% of the sale price for its taxable medical devices. In 2015, Congress imposed a 2-year moratorium on this medical device tax, so that medical device sales during the period between January 1, 2016 and December 31, 2017 are exempt from the tax. Absent further legislative action, the tax will be automatically reinstated for medical device sales starting on January 1, 2018. If the tax is reinstated and if our products become regulated as medical devices, we could be required to begin paying this tax on the sales of our products for which we submit a marketing application, such as a 510(k) or PMA, to the FDA; and

- mandates a reduction in payments for clinical laboratory services paid under the Medicare Clinical Laboratory Fee Schedule, or CLFS, of 1.75% for the years 2011 through 2015. In addition, a productivity adjustment is made to the fee schedule payment amount.

On April 1, 2013, cuts to the federal budget were implemented, known as sequestration, resulting in a 2% annual cut in Medicare payments for all services, including clinical laboratory testing. Congress has since extended this 2% Medicare sequester through fiscal year 2025. At this time, it remains uncertain how long the cuts will be continued.

Many CPT procedure codes for molecular pathology tests that we use to bill our products were revised by the American Medical Association, or AMA, effective January 1, 2013. These new CPT codes were developed and

implemented for individual genes, or the components of a multi-gene panel. In a final rule for calendar year 2013, CMS announced that it decided to keep the new molecular codes on the CLFS rather than move them to the Physician Fee Schedule. CMS then announced that for 2013, it would price the new codes using a gap filling process. Under this approach, CMS referred the CPT codes to the MACs to allow them to determine an appropriate price. CMS then calculated the median of the pricing provided by the MACs to establish and publish a National Limitation Amount, or NLA, by CPT code for 2014.

In 2014, the AMA approved and implemented new CPT codes for genomic sequencing-based panel tests in cancer, effective January 1, 2015. In 2015, CMS used a gap filling process to price some of these new codes, which involved referring the new codes to the MACs to allow them to determine and submit to CMS an appropriate price if they deemed a code to be a covered service. CMS then established and published for 2016 an NLA for some of these codes, including the code associated with testing for 5-50 genes as calculated by determining the median price as provided by the MACs for the applicable code. If CMS reduces reimbursement for the new CPT codes for individual genes or fails to price new multi-gene panel codes which cover our products, or if commercial payors who often base pricing on Medicare fee schedules reduce non-contracted payment rates below the new NLA amount for CPT codes corresponding to individual genes, mandate use of the new sequencing-based panel CPT codes, or decide to stop payment on specific CPT codes altogether, our revenue could be adversely affected.

Additionally, in April 2014 the Protecting Access to Medicare Act of 2014, or PAMA, was enacted into law. Section 216 of PAMA reforms the Medicare payment system for clinical laboratory tests paid through the CLFS. PAMA establishes a market-based payment system for Medicare payment for clinical diagnostic laboratory tests. Under this new methodology, CMS will establish Medicare payment for each test based on the weighted median of the payment rates for private payors for the test. PAMA also creates a new class of test called the Advanced Diagnostic Laboratory Test, or ADLT, defined as a test offered and furnished by a single laboratory that is not sold for use by a laboratory other than the original developing laboratory and is either a (1) multi-biomarker test of DNA, RNA or proteins with a unique algorithm yielding a single, patient-specific result, (2) test that is cleared or approved by the FDA, or (3) test meeting other similar criteria established by the Secretary of Health and Human Services.

PAMA requires certain clinical laboratories meeting a threshold of Medicare revenues to report private payor payment rates and corresponding test volumes. PAMA also directed CMS to establish parameters to implement PAMA by June 30, 2015 and requires the market-based payment system to start on January 1, 2017. In June 2016, CMS issued the Medicare Clinical Diagnostic Laboratory Tests Payment System Final Rule, or the Final Rule, to implement the laboratory test payment provisions of PAMA. Because the issuance of the Final Rule was delayed, CMS delayed the market-based payment rates until January 1, 2018. The agency has issued sub-regulatory guidance on data collection and reporting and on additional topics, including a list of specific billing codes for which laboratories must report data. CMS is expected to publish additional sub-regulatory guidance describing how PAMA will be implemented, including an application process for ADLTs. At this time, the full impact of the implementation of PAMA on new and existing tests is uncertain. Our average commercial payor reimbursement starting in 2018 could be adversely affected depending upon if and how commercial payors adopt this new Medicare pricing methodology and the payment rates.

The Center for Medicare and Medicaid Innovation announced in June 2016 the launch of the Oncology Care Model, or OCM, beginning on July 1, 2016. The OCM is a five-year voluntary program that includes 190 physician practices in 31 states, as well as 16 private payors. Under the OCM, participating practices receive performance based payments on the basis of how their prices for 6-month episodes of cancer care triggered by receipt of chemotherapy compare to benchmark prices for similar episodes. These benchmarks are based on the historical data for the period of January 2012 through June 2015. The model may impact the utilization of our tests among those practices participating in OCM.

Finally, the recent presidential and congressional elections in the U.S. could result in significant changes in, and uncertainty with respect to, legislation, regulation and government policy that could significantly impact our

business and the healthcare industry. While it is not possible to predict whether and when any such changes will occur, specific proposals discussed during and after the election that could have a material impact on us include, but are not limited to, the repeal of the ACA, modifications and elimination of programs and reductions in staffing at the FDA and CMS, and initiatives to contain or reduce governmental spending in the healthcare area, including Medicare and Medicaid reimbursement. We cannot predict what future healthcare initiatives will be introduced or implemented at the federal or state level, or how any future legislation or regulation may affect us. Any taxes imposed by federal legislation and the expansion of the government s role in the U.S. healthcare industry generally, as well as changes to the reimbursement amounts paid by payors for our existing and future products, may reduce our profits and have a material adverse effect on our business, financial condition, results of operations, and cash flows.

If we fail to comply with the complex federal, state, local and foreign laws and regulations that apply to our business, we could suffer severe consequences that could materially and adversely affect our operating results and financial condition.

We are subject to CLIA, a federal law that regulates clinical laboratories that perform testing on specimens derived from humans for the purpose of providing information for the diagnosis, prevention, or treatment of disease. CLIA regulations mandate specific standards in the areas of personnel qualifications, administration, participation in proficiency testing, patient test management, quality control, quality assurance, and inspections. Our laboratory facilities located in the United States each have a current certificate of accreditation under CLIA to conduct our analyses through our accreditation by CAP. To renew these certificates, we are subject to survey and inspection every two years. Moreover, CLIA inspectors may make unannounced inspections of our clinical reference laboratories at any time.

Any sanction imposed under CLIA, its implementing regulations, or state or foreign laws or regulations governing licensure, or our failure to renew a CLIA certificate, a state or foreign license, or accreditation, could have a material adverse effect on our business. Most CLIA deficiencies are not classified as condition-level deficiencies, and there are no adverse effects upon the laboratory operations as long as the deficiencies are corrected. Remediation of these deficiencies are routine matters, with corrections occurring within several hours or weeks. More serious CLIA deficiencies could rise to the level of condition-level deficiencies, and CMS has the authority to impose a wide range of sanctions, including revocation of the CLIA certification along with a bar on the ownership or operation of a CLIA certified laboratory by any owners or operators of the deficient laboratory. There is an administrative hearing procedure that can be pursued by the laboratory in the event of imposition of such sanctions, during which the sanctions are stayed, but the process can take a number of years to complete. If we were to lose our CLIA certification or CAP accreditation, we would not be able to operate our clinical laboratories and perform our molecular tests, which would result in material harm to our business and results of operations.

In addition to CLIA and HIPAA, our operations are subject to other extensive federal, state, local, and foreign laws and regulations, all of which are subject to change. These laws and regulations currently include, among others:

- HIPAA, under which the Department of Health and Human Services established comprehensive federal standards with respect to the privacy and security of protected health information and requirements for the use of certain standardized electronic transactions; certain of our services, are subject to these standards and requirements;

amendments to HIPAA under the Health Information Technology for Economic and Clinical Health Act, or the HITECH Act, and related regulatory amendments, which strengthen and expand HIPAA privacy and security standards, increase penalties for violators, extend enforcement authority to state attorneys general, and impose requirements for breach notification;

the federal Anti-Kickback Statute, which prohibits knowingly and willfully offering, paying, soliciting, or receiving remuneration, directly or indirectly, in exchange for or to induce either the referral of an

individual, or the furnishing, arranging for, or recommending of an item or service that is reimbursable, in whole or in part, by a federal healthcare program;

the federal Stark physician self-referral law, which prohibits a physician from making a referral for certain designated health services covered by a federal healthcare program, including laboratory and pathology services, if the physician or an immediate family member has a financial relationship with the entity providing the designated health services, unless the financial relationship falls within an applicable exception to the prohibition;

the federal False Claims Act, which imposes liability on any person or entity that, among other things, knowingly presents, or causes to be presented, a false or fraudulent claim for payment to the federal government;

the federal Civil Monetary Penalties Law, which prohibits, among other things, the offering or transfer of remuneration to a Medicare or other federal or state healthcare program beneficiary if the person knows or should know it is likely to influence the beneficiary s selection of a particular provider, practitioner, or supplier of services reimbursable by Medicare or other federal or state healthcare program, unless an exception applies;

other federal and state fraud and abuse laws, such as anti-kickback laws, prohibitions on self-referral, fee-splitting restrictions, prohibitions on the provision of products at no or discounted cost to induce physician or patient adoption, and false claims acts, which may extend to services reimbursable by any third-party payor, including private insurers;

the prohibition on reassignment of Medicare clinical laboratory claims, which, subject to certain exceptions, precludes the reassignment of such Medicare claims to any other party;

the rules regarding billing for diagnostic tests reimbursable by the Medicare program, which in certain circumstances prohibit laboratories from charging the Medicare program directly for services provided to hospital inpatients and outpatients, and also prohibit a physician or other supplier from marking up the price of the technical component or professional component of certain diagnostic tests ordered by the physician or other supplier and supervised or performed by a physician who does not share a practice with the billing physician or supplier;

state laws that prohibit other specified practices, such as billing physicians for testing that they order; waiving coinsurance, copayments, deductibles, and other amounts owed by patients; billing a state Medicaid program at a price that is higher than what is charged to one or more other payors;

federal and state laws regulating lobbying activities, including the disclosure of payments made in connection with such activities; and

similar foreign laws and regulations that apply to us in the countries in which we operate.

Our failure to comply could lead to civil or criminal penalties, exclusion from participation in government healthcare programs, or prohibitions or restrictions on our ability to conduct commercial activities. We believe that we are in material compliance with all statutory and regulatory requirements, but there is a risk that one or more government agencies could take a contrary position. These laws and regulations are complex and are subject to interpretation by the courts and by government agencies. If one or more such agencies allege that we may be in violation of any of these requirements, regardless of the outcome, it could damage our reputation and adversely affect important business relationships with third parties, including managed care organizations and other commercial third-party payors.

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Intellectual Property Risks Related to Our Business

If we are unable to protect our intellectual property effectively, we may be unable to prevent third parties from using our technologies, which would impair our competitive advantage.

We rely on patent protection as well as a combination of trademark, copyright and trade secret protection, and other contractual restrictions to protect our proprietary technologies, all of which provide limited protection and may not adequately protect our rights or permit us to gain or keep any competitive advantage. If we fail to protect our intellectual property, we will be unable to prevent third parties from using our technologies and they will be able to compete more effectively against us.

Our future patent applications may not result in issued patents and any patents issued to us may be challenged, invalidated or held unenforceable. We may not be successful in defending challenges made in connection with our patents and patent applications.

In addition to our patents, we rely on contractual restrictions to protect our proprietary technology. We require our employees and third parties to sign confidentiality agreements and employees to also sign agreements assigning to us all intellectual property arising from their work for us. Nevertheless, these measures may not be effective in protecting our intellectual property rights.

We depend on certain technologies that are licensed to us. We do not control these technologies and any loss of our rights to them could prevent us from selling some of our products.

We have entered into several license agreements with third parties for certain licensed technologies that are, or may become, relevant to the products we market, or plan to market, including our license agreement with Dana-Farber Cancer Institute, Inc., pursuant to which we license our ICE-COLD-PCR technology. In addition, we may in the future elect to license third party intellectual property to further our business objectives and/or as needed for freedom to operate for our products. We do not and will not own the patents, patent applications or other intellectual property rights that are a subject of these licenses. Our rights to use these technologies and employ the inventions claimed in the licensed patents, patent applications and other intellectual property rights are or will be subject to the continuation of and compliance with the terms of those licenses.

We might not be able to obtain licenses to technology or other intellectual property rights that we require. Even if such licenses are obtainable, they may not be available at a reasonable cost or multiple licenses may be needed for the same product (e.g., stacked royalties). We could therefore incur substantial costs related to royalty payments for licenses obtained from third parties, which could negatively affect our gross margins. Further, we could encounter delays in product introductions, or interruptions in product sales, as we develop alternative methods or products.

In some cases, we do not or may not control the prosecution, maintenance, or filing of the patents or patent applications to which we hold licenses, or the enforcement of these patents against third parties. As a result, we cannot be certain that drafting or prosecution of the licensed patents and patent applications by the licensors have been or will be conducted in compliance with applicable laws and regulations or will result in valid and enforceable patents and other intellectual property rights.

The patents issued to us may not be broad enough to provide any meaningful protection one or more of our competitors may develop more effective technologies, designs or methods without infringing our intellectual property rights and one or more of our competitors may design around our proprietary technologies.

If we are not able to protect our proprietary technology, trade secrets and know-how, our competitors may use our inventions to develop competing products. We own certain patents relating to our diagnostic technology. However, these patents may not protect us against our competitors, and patent litigation is very

expensive. We may not have sufficient cash available to pursue any patent litigation to its conclusion because other than revenue from licensing, milestone and royalty income we currently generate only minimal revenue from our diagnostic services.

We cannot rely solely on our current patents to be successful. The standards that the U.S. Patent and Trademark Office and foreign patent office s use to grant patents, and the standards that U.S. and foreign courts use to interpret patents, are not the same and are not always applied predictably or uniformly and can change, particularly as new technologies develop. As such, the degree of patent protection obtained in the U.S. may differ substantially from that obtained in various foreign countries. In some instances, patents have been issued in the U.S. while substantially less or no protection has been obtained in Europe or other countries.

We cannot be certain of the level of protection, if any, which will be provided by our patents if we attempt to enforce them and they are challenged in court where our competitors may raise defenses such as invalidity, unenforceability or possession of a valid license. In addition, the type and extent of any patent claims that may be issued to us in the future are uncertain. Any patents which are issued may not contain claims that will permit us to stop competitors from using similar technology.

We may incur substantial costs as a result of litigation or other proceedings relating to patent and other intellectual property rights and we may be unable to protect our rights to, or use, our diagnostic technology.

Third parties may challenge the validity of our patents and other intellectual property rights, resulting in costly litigation or other time-consuming and expensive proceedings, which could deprive us of valuable rights. If we become involved in any intellectual property litigation, interference or other judicial or administrative proceedings, we will incur substantial expenses and the diversion of financial resources and technical and management personnel. An adverse determination may subject us to significant liabilities or require us to seek licenses that may not be available from third parties on commercially favorable terms, if at all. Further, if such claims are proven valid, through litigation or otherwise, we may be required to pay substantial financial damages, which can be tripled if the infringement is deemed willful, or be required to discontinue or significantly delay development, marketing, selling and licensing of the affected products and intellectual property rights.

Our competitors may have filed, and may in the future file, patent applications covering technology similar to ours. Any such patent application may have priority over our patent applications and could further require us to obtain rights to issued patents covering such technologies. There may be third-party patents, patent applications and other intellectual property relevant to our potential products that may block or compete with our products or processes. If another party has filed a United States patent application on inventions similar to ours, we may have to participate in an interference proceeding declared by the United States Patent and Trademark Office to determine priority of invention in the United States. The costs of these proceedings could be substantial, and it is possible that such efforts would be unsuccessful, resulting in a loss of our United States patent position with respect to such inventions. In addition, we may not prevail in any of these suits or that the damages or other remedies if any, awarded against us could be substantial. Claims of intellectual property infringement may require us to enter into royalty or license agreements with third parties that may not be available on acceptable terms, if at all. We may also become subject to injunctions against the further development and use of our technology, which would have a material adverse effect on our business, financial condition and results of operations.

Some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. In addition, any uncertainties resulting from the initiation and continuation of any litigation could have a material adverse effect on our ability to raise the funds necessary to continue our operations.

Third parties may assert ownership or commercial rights to inventions we develop.

Third parties may in the future make claims challenging the inventorship or ownership of our intellectual property. For example, third parties that have been introduced to or have benefited from our inventions may

attempt to replicate or reverse engineer our products and circumvent ownership of our inventions. We have written agreements with collaborators that provide for the ownership of intellectual property arising from our collaborations. In some instances, there may not be adequate written provisions to address clearly the resolution of intellectual property rights that may arise from a collaboration. If we cannot successfully negotiate sufficient ownership and commercial rights to the inventions that result from our use of a third-party collaborator s materials where required, or if disputes otherwise arise with respect to the intellectual property developed with the use of a collaborator s samples, we may be limited in our ability to capitalize on the market potential of these inventions. In addition, we may face claims that our agreements with employees, contractors, or consultants obligating them to assign intellectual property to us are ineffective, or in conflict with prior or competing contractual obligations of assignment, which could result in ownership disputes regarding intellectual property we have developed or will develop and interfere with our ability to capture the commercial value of such inventions. Litigation may be necessary to resolve an ownership dispute, and if we are not successful, we may be precluded from using certain intellectual property, or may lose our exclusive rights in that intellectual property. Either outcome could have an adverse impact on our business.

Third parties may assert that our employees or consultants have wrongfully used or disclosed confidential information or misappropriated trade secrets.

We employ individuals who were previously employed at other diagnostic or biopharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees and consultants do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or our employees, consultants or independent contractors have inadvertently or otherwise used or disclosed intellectual property, including trade secrets or other proprietary information, of a former employer or other third parties. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

The testing, manufacturing and marketing of medical diagnostic devices entails an inherent risk of product liability and personal injury claims.

To date, we have experienced no product liability or personal injury claims, but any such claims arising in the future could have a material adverse effect on our business, financial condition and results of operations. Potential product liability or personal injury claims may exceed the amount of our insurance coverage or may be excluded from coverage under the terms of our policy or limited by other claims under our umbrella insurance policy. Additionally, our existing insurance may not be renewed by us at a cost and level of coverage comparable to that presently in effect, if at all. In the event that we are held liable for a claim against which we are not insured or for damages exceeding the limits of our insurance coverage, such claim could have a material adverse effect on our cash flow and thus potentially a materially adverse effect on our business, financial condition and results of operations.

All of our diagnostic technology development and our clinical services are performed at two laboratories, and in the event either or both of these facilities were to be affected by a termination of the lease or a man-made or natural disaster, our operations could be severely impaired.

We are performing all of our diagnostic services in our CLIA laboratory located in New Haven, Connecticut and our research and development operations are based in our facility in Omaha, Nebraska. Despite precautions taken by us, any future natural or man-made disaster at these laboratories, such as a fire, earthquake or terrorist activity, could cause substantial delays in our operations, damage or destroy our equipment and testing samples or cause us to incur additional expenses.

In addition, we are leasing the facilities where our laboratories operate. We are currently in compliance with all and any lease obligations, but should the leases terminate for any reason, or if at any time either of the

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laboratories is moved due to conditions outside our control, it could cause substantial delay in our diagnostics operations, damage or destroy our equipment and biological samples or cause us to incur additional expenses. In the event of an extended shutdown of either laboratory, we may be unable to perform our services in a timely manner or at all and therefore would be unable to operate in a commercially competitive manner. This could harm our operating results and financial condition.

Further, if we have to use a substitute laboratory while our facilities were shut down, we could only use another facility with established state licensure and accreditation under CLIA. We may not be able to find another CLIA-certified facility and comply with applicable procedures, or find any such laboratory that would be willing to perform the tests for us on commercially reasonable terms. Additionally, any new laboratory opened by us would be subject to certification under CLIA and licensure by various states, which would take a significant amount of time and result in delays in our ability to continue our operations.

Risks Related to Ownership of our Securities and This Offering

We expect that our stock price may fluctuate significantly.

There has been, and continues to be, a limited public market for our common stock, and an active trading market for our common stock has not and may never develop or, if developed, be sustained. The trading price of our common stock may be highly volatile and could be subject to wide fluctuations in response to various factors, some of which are beyond our control. These factors include:

- actual or anticipated fluctuations in our financial condition and operating results;
- actual or anticipated changes in our growth rate relative to our competitors;
- competition from existing products or new products that may emerge;
- announcements by us, our academic institution partners, or our competitors of significant acquisitions, strategic partnerships, joint ventures, collaborations, or capital commitments;
- failure to meet or exceed financial estimates and projections of the investment community or that we provide to the public and the revision of any financial estimates and projections that we provide to the public;
- issuance of new or updated research or reports by securities analysts;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- share price and volume fluctuations attributable to inconsistent trading volume levels of our shares;

additions, transitions or departures of key management or scientific personnel;

disputes or other developments related to proprietary rights, including patents, litigation matters, and our ability to obtain patent protection for our technologies;

changes to reimbursement levels by commercial third-party payors and government payors, including Medicare, and any announcements relating to reimbursement levels;

announcement or expectation of additional debt or equity financing efforts;

sales of our common stock by us, our insiders, or our other stockholders; and

general economic and market conditions.

These and other market and industry factors may cause the market price and demand for our common stock to fluctuate substantially, regardless of our actual operating performance, which may limit or prevent investors from readily selling their shares of our common stock and may otherwise negatively affect the liquidity of our

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common stock. In addition, the stock market in general, and biopharmaceutical companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies. In the past, when the market price of a stock has been volatile, holders of that stock have instituted securities class action litigation against the company that issued the stock. If any of our stockholders brought a lawsuit against us, we could incur substantial costs defending the lawsuit. Such a lawsuit could also divert the time and attention of our management.

If we discover material weaknesses and other deficiencies in our internal control and accounting procedures, our stock price could decline significantly and raising capital could be more difficult.

If we fail to comply with the rules under the Sarbanes-Oxley Act of 2002 related to disclosure controls and procedures, or, if we discover additional material weaknesses and other deficiencies in our internal control and accounting procedures, our stock price could decline significantly and raising capital could be more difficult. Moreover, effective internal controls are necessary for us to produce reliable financial reports and are important to helping prevent financial fraud. If we cannot provide reliable financial reports or prevent fraud, our business and operating results could be harmed, investors could lose confidence in our reported financial information, and the trading price of our common stock could drop significantly. In addition, we cannot be certain that additional material weaknesses or significant deficiencies in our internal controls will not be discovered in the future.

We have not paid dividends on our common stock in the past and do not expect to pay dividends on our common stock for the foreseeable future. Any return on investment may be limited to the value of our common stock.

No cash dividends have been paid on our common stock. We expect that any income received from operations will be devoted to our future operations and growth. We do not expect to pay cash dividends on our common stock in the near future. Payment of dividends would depend upon our profitability at the time, cash available for those dividends, and other factors as our board of directors may consider relevant. If we do not pay dividends, our common stock may be less valuable because a return on an investor s investment will only occur if our stock price appreciates. Investors in our common stock should not rely on an investment in our company if they require dividend income.

If securities or industry analysts do not publish research or reports about our business, or if they change their recommendations regarding our stock adversely, our stock price and trading volume could decline.

The trading market for our common stock relies in part on the research and reports that equity research analysts publish about us and our business. We do not control these analysts. The price of our common stock could decline if one or more equity research analysts downgrade our common stock or if they issue other unfavorable commentary or cease publishing reports about us or our business.

Future sales or other issuances of our common stock could depress the market for our common stock.

Sales of a substantial number of shares of our common stock, or the perception by the market that those sales could occur, could cause the market price of our common stock to decline or could make it more difficult for us to raise funds through the sale of equity in the future.

In connection with this offering, our directors and officers and certain of our stockholders have entered into lock-up agreements for a period of 90 days following this offering. All or a portion of these shares may be released from the lock-up prior to the expiration of the lock-up period at the sole discretion of Aegis, as representative of the underwriters. See Underwriting. Upon expiration or earlier release of this lock-up, our directors and officers and stockholders may sell shares into the market, which could adversely affect the market price of shares of our common

stock. In addition, in connection with our merger with Precipio, our directors and officers and

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certain of our stockholders have entered into lock-up agreements for a period of 180 days following the effective date of the merger. Upon expiration of this lock-up, our directors and officers and stockholders may sell shares into the market, which could adversely affect the market price of shares of our common stock.

Future issuances of common stock could further depress the market for our common stock.

Investors in this offering will experience immediate and substantial dilution and may experience further dilution in the future.

The public offering price of the common stock offered pursuant to this prospectus supplement is substantially higher than the net tangible book value per share of our common stock. Our net tangible book value as of March 31, 2017 was a deficit of $7.2 million, or $(1.09) per share. After giving effect to the sale of shares of our common stock and warrants in this offering at the public offering price of $ per share and warrant and based on our net tangible book value as of March 31, 2017, if you purchase shares of common stock in this offering, you would suffer immediate and substantial dilution of $ per share in the net tangible book value of the common stock. See the section titled Dilution below for a more detailed discussion of the dilution you will incur if you purchase shares in this offering. Furthermore, we expect that we will seek to raise additional capital from time to time in the future. Such financings may involve the issuance of equity and/or securities convertible into or exercisable or exchangeable for our equity securities. We also expect to continue to utilize equity-based compensation. To the extent the warrants and options are exercised or we issue common stock, preferred stock, or securities such as warrants that are convertible into, exercisable or exchangeable for, our common stock or preferred stock in the future, you may experience further dilution.

We will have broad discretion over the use of the net proceeds from this offering.

We will have broad discretion to use the net proceeds from the sale of common stock in this offering, and investors in our stock will be relying on the judgment of our board of directors and management regarding the application of these proceeds. We expect to use a substantial portion of the net proceeds from this offering for the growth of our sales force, progression of our product development, repayment of the principal and interest under our outstanding promissory notes, and working capital and general corporate purposes. Our inability to apply the net proceeds from this offering effectively could have an adverse effect on our financial condition or results of operations.

The warrants are speculative in nature.

The warrants to be issued to investors in this offering do not confer any rights of common stock ownership on their holders, such as voting rights or the right to receive dividends, but rather merely represent the right to purchase shares of common stock at a fixed price for a limited period of time. Specifically, commencing on the date of issuance, holders of the warrants may exercise their right to acquire shares of common stock at an exercise price of $ per share, prior to years from the date of issuance, after which date any unexercised warrants will expire and have no further value. There can be no assurance that the market price of our common stock will ever equal or exceed the exercise price of the warrants, and consequently, whether it will ever be profitable for holders of the warrants to exercise the warrants.

There is no public market for our warrants, which could limit your ability to sell our warrants.

There currently is no public market for our warrants, and we do not plan to have our warrants quoted or traded on any market.

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USE OF PROCEEDS

We estimate that the net proceeds from our sale of shares of our common stock and warrants in this offering will be approximately $ million (or approximately $ million if the underwriters option to purchase additional shares and/or warrants is exercised in full), after deducting the underwriting discount and estimated offering expenses payable by us.

We intend to use approximately $1.5 million of the net proceeds from this offering, together with existing cash and cash equivalents, to repay the principal amount, together with interest, on our outstanding promissory notes. We intend to use the balance of the net proceeds from this offering for the growth of our sales force, progression of our product development and for working capital and other general corporate purposes.

The amounts actually expended for each purpose may vary significantly depending upon numerous factors, including the amount and timing of the proceeds from this offering and the progress of our product development activities. In addition, expenditures may also depend on the establishment of new collaborative arrangements with other partners, the availability of other financing and other factors.

Based upon our current operating plan, we believe that the net proceeds from this offering, together with existing cash and cash equivalents, will enable us to fund our operating expenses and capital expenditure requirements for at least 18 months from the date hereof. We anticipate that we will be required to raise substantial additional capital to continue to fund product development and the growth of our sales force. We expect to seek to raise additional capital through additional public or private financings, principally through equity issuances.

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DILUTION

If you invest in our common stock, your interest will be diluted immediately to the extent of the difference between the public offering price per share of our common stock and the as adjusted net tangible book value per share of our common stock after this offering.

Our net tangible book value as of March 31, 2017 was a deficit of $7,217,000, or $(1.09) per share of common stock. Net tangible book value per share is equal to our total tangible assets minus total liabilities as of March 31, 2017, divided by the number of shares of common stock outstanding as of June 30, 2017, which is the post-merger number of outstanding shares. After giving effect to the sale of shares of our common stock and warrants offered by this prospectus supplement at a public offering price of $ per share and warrant (without assigning any value to the warrants), and after deducting the underwriting discount and estimated offering expenses payable by us, our adjusted net tangible book value as of March 31, 2017 would have been $ million, or $ per share of common stock. This represents an immediate increase in net tangible book value of approximately $ per share to existing stockholders and an immediate dilution of $ per share to new investors purchasing our common stock in this offering. The following table illustrates this calculation on a per share basis:

Public offering price for one share of common stock		$
Net tangible book value per share as of March 31, 2017	$ (1.09)	
Increase per share attributable to new investors in this offering		
As adjusted net tangible book value per share as of March 31, 2017, after giving effect to this offering		
Dilution per share to new investors in this offering		$

The information above assumes that the underwriters do not exercise their option to purchase additional shares and/or warrants. If the underwriters exercise their option in full, our as adjusted net tangible book value per share at March 31, 2017 after giving effect to this offering would have been $ per share, and the dilution in as adjusted net tangible book value per share to investors in this offering would have been $ per share.

The number of shares of common stock outstanding after this offering is based on 6,607,966 shares outstanding as of June 30, 2017, and excludes as of such date:

- 24,925 shares of our common stock subject to outstanding options and stock appreciation rights, with a weighted average exercise price of $113.34 per share;
- 268,379 shares of our common stock subject to outstanding warrants, with a weighted average exercise price of $48.34 per share;

1,712,901 shares of our common stock issuable upon conversion of our outstanding Series A Convertible Preferred Stock. The holders of our outstanding Series A Convertible Preferred Stock have orally agreed to convert all of their shares of Series A Convertible Preferred Stock into an aggregate of 1,712,901 shares of common stock, at the existing conversion rate of one share of common stock for one share of Series A Convertible Preferred Stock, upon the closing of this offering; and

666,666 shares of our common stock available for awards under our 2006 Equity Incentive Plan and 2017 Stock Option and Incentive Plan.

Except as otherwise noted, all information in this prospectus supplement assumes:

the issuance of 535,285 shares of common stock upon the automatic conversion of our outstanding convertible notes upon the closing of this offering.

To the extent outstanding warrants or options are exercised, there will be further dilution to new investors. In addition, to the extent we issue additional equity securities in connection with future capital raising activities, our then-existing stockholders may experience dilution.

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DESCRIPTION OF SECURITIES

General

Our authorized capital stock consists of 150,000,000 shares of common stock, $0.01 par value per share, and 15,000,000 shares of preferred stock, $0.01 par value per share. As of June 30, 2017 there were 6,607,966 shares of our common stock outstanding, 1,712,901 shares of our preferred stock outstanding and warrants to purchase 268,379 shares of our common stock outstanding.

The following summary description of our capital stock is based on the provisions of our amended and restated certificate of incorporation, amended and restated bylaws, certificate of designation, outstanding warrants, warrants offered in this offering, and the applicable provisions of the Delaware General Corporation Law. This summary does not purport to be complete and is qualified entirely by reference to the applicable provisions of our amended and restated certificate of incorporation, amended and restated bylaws, certificate of designation, outstanding warrants and the Delaware General Corporation Law. For information on how to obtain copies of our amended and restated certificate of incorporation, amended and restated bylaws, certificate of designation and outstanding warrants, see Where You Can Find Additional Information and Incorporation of Certain Information by Reference.

Common Stock

We may issue shares of our common stock from time to time. Holders of our common stock are entitled to one vote per share on all matters to be voted upon by the stockholders. Holders of our common stock do not have cumulative voting rights in the election of directors. Subject to the preferences that may be applicable to any then outstanding preferred stock, holders of common stock are entitled to receive ratably such dividends, if any, as may be declared by our Board of Directors out of funds legally available therefor. Upon the liquidation, dissolution, or winding up of our company, holders of common stock are entitled to share ratably in all of our assets which are legally available for distribution after payment of all debts and other liabilities and liquidation preference of any outstanding preferred stock. There are no sinking fund provisions applicable to our common stock. Holders of common stock have no preemptive, subscription, redemption or conversion rights. The rights, preferences and privileges of holders 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 that we have designated and issued and may designate and issue in the future.

Preferred Stock

We may issue shares of our preferred stock from time to time, in one or more series. The 15,000,000 shares of preferred stock authorized are undesignated as to preferences, privileges and restrictions, other than as set forth below. Our Board of Directors will determine the rights, preferences and privileges of the shares of each wholly unissued series, and any qualifications, limitations or restrictions thereon, including dividend rights, conversion rights, terms of redemption or repurchase, liquidation preferences, sinking fund terms and the number of shares constituting any series or the designation of any series.

On June 29, 2017, we filed a Certificate of Designation with the State of Delaware which designates 4,100,000 shares of our preferred stock as Series A Senior Convertible Preferred Stock, or the Series A Preferred Stock. The Series A Preferred Stock has a stated value of $3.736329 per share and a par value of $0.01 per share.

Each share of Series A Preferred Stock has voting rights equal to the number of shares of our common stock issuable upon conversion of such shares of Series A Preferred Stock on the record date of such vote. The holders of shares of Series A Preferred Stock are entitled to receive a payment, in lieu of interest or dividends, equal to 8% of the stated

value of the Series A Preferred Stock, which accrues from the date of issuance of the Series A Preferred Stock and is cumulative. Such payments are due on March 15, June 15, September 15 and

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December 15 of each year, beginning September 15, 2017. The first eight such payments will be made by the issuance of additional shares of Series A Preferred Stock. Thereafter, we may elect to make such payments either in cash or by issuing additional shares of Series A Preferred Stock.

The Series A Preferred Stock is not redeemable. In the event of our liquidation, dissolution, winding up or change of control, the holders of Series A Preferred Stock are entitled to receive a liquidation preference before the holders of our common stock.

Each holder of shares of Series A Preferred Stock has the right to convert any or all of such holder s shares of Series A Preferred Stock into shares of our common stock at the conversion rate then in effect in our amended and restated certificate of incorporation. Each holder of shares of Series A Preferred Stock also has the right to convert all of such holder s shares of Series A Preferred Stock into securities issued by us in any private offering at a 15% discount to the purchase price per security paid in such offering. A holder of shares of Series A Preferred Stock does not have the right to convert such holder s shares of Series A Preferred Stock into shares of our common stock if the holder, together with its affiliates, would beneficially own in excess of 19.99% of the number of shares of our common stock outstanding immediately after giving effect to such conversion. In addition, a holder of shares of Series A Preferred Stock does not have the right to convert such holder s shares of Series A Preferred Stock into shares of our common stock to the extent that such conversion would result in the holder beneficially owning in excess of 19.99% of the number of shares of our common stock outstanding immediately prior to the issuance of such shares of Series A Preferred Stock to the holder, unless approved by our stockholders in accordance with the requirements of NASDAQ.

The holders of our outstanding Series A Convertible Preferred Stock have orally agreed to convert all of their shares of Series A Convertible Preferred Stock into an aggregate of 1,712,901 shares of common stock, at the existing conversion rate of one share of common stock for one share of Series A Convertible Preferred Stock, upon the closing of this offering.

The General Corporation Law of the State of Delaware, the state of our incorporation, provides that the holders of preferred stock will have the right to vote separately as a class (or, in some cases, as a series) on an amendment to our amended and restated certificate of incorporation if the amendment would change the par value, the number of authorized shares of the class or the powers, preferences or special rights of the class or series so as to adversely affect the class or series, as the case may be. This right is in addition to any voting rights that may be provided for in the applicable certificate of designation.

Our Board of Directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of our common stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions, financings and other corporate purposes, could, among other things, have the effect of delaying, deferring or preventing a change in our control and may adversely affect the market price of our common stock and the voting and other rights of the holders of our common stock.

Warrants

As of June 30, 2017, we had warrants outstanding and exercisable for 268,379 shares of our common stock. Below is a summary of our outstanding warrants.

Bridge Warrants

In connection with the Merger, on June 29, 2017, we issued warrants, or the Bridge Warrants, to purchase 45,600 shares of our common stock at an exercise price of $7.50 per share (subject to adjustment as described below).

Term. The Bridge Warrants are exercisable for five years.

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Exercise Price. The exercise price of the Bridge Warrants is $7.50 per share. The exercise price and number of shares of our common stock issuable upon the exercise of the Bridge Warrants is subject to adjustment in the event of any stock dividends and splits, reverse stock split, recapitalization, reorganization or similar transaction. In addition, if we complete a financing resulting in at least $5,500,000 of gross proceeds, the exercise price will become the lower of (i) $7.50 or (ii) 110% of the per share offering price in such financing, but in no event lower than $1.50 per share.

Exercisability. The Bridge Warrants became exercisable on the date of issuance and are exercisable at any time for five years thereafter. The Bridge Warrants are exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our common stock purchased upon such exercise. If there is no effective registration statement registering the issuance of the shares underlying the Bridge Warrants, then the Bridge Warrants may be exercised by means of a cashless exercise.

Beneficial Ownership Limitation. A holder of Bridge Warrants does not have the right to exercise any portion of its warrants to the extent the holder, together with its affiliates, would beneficially own in excess of 4.99% of the number of shares of our common stock outstanding immediately after giving effect to such exercise.

No Fractional Shares. No fractional shares shall be issued upon the exercise of the Bridge Warrants; instead the number of shares of common stock to be issued will be rounded up to the nearest whole number.

Transferability. Subject to applicable laws, the Bridge Warrants may be transferred at the option of the holder upon surrender of the Bridge Warrants to us together with the appropriate instruments of transfer, provided that we may require an opinion of counsel in connection with certain transfers.

Authorized Shares. During the period the Bridge Warrants are outstanding, we will reserve from our authorized and unissued common stock a sufficient number of shares to provide for the issuance of shares of common stock underlying the Bridge Warrants upon the exercise of the Bridge Warrants.

Fundamental Transactions. In the event of any fundamental transaction, as described in the Bridge Warrants and generally including any merger with or into another entity, sale of all or substantially all of our assets, tender offer or exchange offer, or reclassification of our common stock, then upon any subsequent exercise of a Bridge Warrant the holder shall have the right to receive as alternative consideration, for each share of our common stock that would have been issuable upon such exercise immediately prior to the occurrence of such fundamental transaction, the number of shares of common stock of the successor or acquiring corporation or of us, if we are the surviving corporation, and any additional consideration receivable upon or as a result of such transaction by a holder of the number of shares of our common stock for which the Bridge Warrant is exercisable immediately prior to such event.

Purchase Rights. If we grant, issue or sell any options, convertible securities or rights to purchase stock, warrants, securities or other property pro rata to the holders of our common stock, then a holder of Bridge Warrants has the right to acquire such purchase rights which the holder could have acquired had the holder exercised the Bridge Warrant immediately prior to the record date for the grant, issurance or sale of such purchase right, subject to certain limitations.

Rights as a Stockholder. Except as otherwise provided in the Bridge Warrants or by virtue of such holder s ownership of shares of our common stock, the holders of the Bridge Warrants do not have the rights or privileges of holders of our common stock, including any voting rights, until they exercise their Bridge Warrants.

Side Warrants

On June 29, 2017, we issued warrants, or the Side Warrants, to purchase 91,429 shares of our common stock at an exercise price of $7.00 per share (subject to adjustment as described below).

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Term. The Side Warrants are exercisable for five years.

Exercise Price. The exercise price of the Side Warrants is $7.00 per share. The exercise price and number of shares of our common stock issuable upon the exercise of the Side Warrants is subject to adjustment in the event of any stock dividends and splits, reverse stock split, recapitalization, reorganization or similar transaction.

Exercisability. The Side Warrants became exercisable as to 22,857 shares of our common stock on the date of issuance and will become exercisable as to the remaining 68,572 shares of our common stock upon the holder s performance of certain obligations as set forth in the Side Warrants. The Side Warrants are exercisable, at the option of the holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our common stock purchased upon such exercise. If there is no effective registration statement registering the issuance of the shares underlying the Side Warrants, then the Side Warrants may be exercised by means of a cashless exercise.

No Fractional Shares. No fractional shares shall be issued upon the exercise of the Side Warrants; instead the number of shares of common stock to be issued will be rounded down to the nearest whole number and we will pay the holder in cash the fair market value for any such fractional shares.

Transferability. Subject to applicable laws and certain restrictions set forth in the Side Warrants, the Side Warrants may be transferred at the option of the holder upon surrender of the Side Warrants to us together with the appropriate instruments of transfer, provided that we may require an opinion of counsel in connection with certain transfers.

Authorized Shares. During the period the Side Warrants are outstanding, we will reserve from our authorized and unissued common stock a sufficient number of shares to provide for the issuance of shares of common stock underlying the Side Warrants upon the exercise of the Side Warrants.

Fundamental Transactions. In the event of any fundamental transaction, as described in the Side Warrants and generally including any merger with or into another entity, sale of all or substantially all of our assets, tender offer or exchange offer, or reclassification of our common stock, then the holder shall have the right to exercise the Side Warrants contingent and effective upon the closing of such fundamental transaction.

Distribution. If we distribute to holders of our common stock for no consideration evidences of our indebtedness, any security or rights to purchase any security, or any other asset, then upon any exercise of the Side Warrants that occurs after the record date for stockholders to receive such distribution, the holder will be entitled to receive such distribution as the holder would have been entitled to receive had the holder exercised the Side Warrants immediately prior to such record date.

Rights as a Stockholder. Except as otherwise provided in the Side Warrants or by virtue of such holder s ownership of shares of our common stock, the holders of the Side Warrants do not have the rights or privileges of holders of our common stock, including any voting rights, until they exercise their Side Warrants.

Warrants Offered in This Offering

The following is a brief summary of certain terms and conditions of the warrants being offered in this offering and is subject in all respects to the provisions contained in the warrants.

Form. The warrants will be issued as individual warrant agreements to the investors. You should review a copy of the form of warrant, which is filed as an exhibit to our Current Report on Form 8-K filed with the SEC on , 2017, for a

complete description of the terms and conditions applicable to the warrants.

Exercisability. The warrants are exercisable at any time after their original issuance, expected to be , 2017, and at any time up to the date that is five years after their original issuance. The warrants will be exercisable, at the

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option of each holder, in whole or in part by delivering to us a duly executed exercise notice and, at any time a registration statement registering the issuance of the shares of common stock underlying the warrants under the Securities Act is effective and available for the issuance of such shares, or an exemption from registration under the Securities Act is available for the issuance of such shares, by payment in full in immediately available funds for the number of shares of common stock purchased upon such exercise. If a registration statement registering the issuance of the shares of common stock underlying the warrants under the Securities Act is not effective or available and an exemption from registration under the Securities Act is not available for the issuance of such shares, the holder may, in its sole discretion, elect to exercise the warrant through a cashless exercise, in which case the holder would receive upon such exercise the net number of shares of common stock determined according to the formula set forth in the warrant. No fractional shares of common stock will be issued in connection with the exercise of a warrant. In lieu of fractional shares, we will pay the holder an amount in cash equal to the fractional amount multiplied by the exercise price.

Exercise Limitation. A holder will not have the right to exercise any portion of the warrant if the holder (together with its affiliates) would beneficially own in excess of 4.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the warrants. However, any holder may increase or decrease such percentage to any other percentage not in excess of 9.99% upon at least 61 days prior notice from the holder to us.

Exercise Price. The exercise price per whole share of common stock purchasable upon exercise of the warrants is $ per share of common stock. The exercise price is subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our common stock and also upon any distributions of assets, including cash, stock or other property to our stockholders.

Transferability. Subject to applicable laws, the warrants may be offered for sale, sold, transferred or assigned without our consent.

Exchange Listing. We do not plan on applying to list the warrants on NASDAQ, any other national securities exchange or any other nationally recognized trading system.

Fundamental Transactions. In the event of a fundamental transaction, as described in the warrants and generally including any reorganization, recapitalization or reclassification of our common stock, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into another person, the acquisition of more than 50% of our outstanding common stock, or any person or group becoming the beneficial owner of 50% of the voting power represented by our outstanding common stock, the holders of the warrants will be entitled to receive upon exercise of the warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the warrants immediately prior to such fundamental transaction.

Rights as a Stockholder. Except as otherwise provided in the warrants or by virtue of such holder s ownership of shares of our common stock, the holder of a warrant does not have the rights or privileges of a holder of our common stock, including any voting rights, until the holder exercises the warrant.

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UNDERWRITING

Aegis Capital Corp., or Aegis, is acting as the representative of the underwriters of the offering. We have entered into an underwriting agreement, dated , 2017 with the representative. Subject to the terms and conditions of the underwriting agreement, we have agreed to sell to each underwriter named below and each underwriter named below has severally agreed to purchase, at the public offering price less the underwriting discounts and commissions set forth on the cover page of this prospectus supplement, the number of shares of common stock and warrants listed next to its name in the following table:

Underwriter	Number of Shares	Number of Warrants
Aegis Capital Corp.		
Total		

The underwriters are committed to purchase all the shares of common stock and warrants offered by us other than those covered by the option to purchase additional shares and/or warrants described below. The obligations of the underwriters may be terminated upon the occurrence of certain events specified in the underwriting agreement. Furthermore, pursuant to the underwriting agreement, the underwriters obligations are subject to customary conditions, representations and warranties contained in the underwriting agreement, such as receipt by the underwriters of officers certificates and legal opinions.

We have agreed to indemnify the underwriters against specified liabilities, including liabilities under the Securities Act, and to contribute to payments the underwriters may be required to make in respect thereof. The underwriters are offering the shares and warrants, subject to prior sale, when, as and if issued to and accepted by them, subject to approval of legal matters by their counsel and other conditions specified in the underwriting agreement. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

The underwriters propose to offer the shares and warrants offered by us to the public at the public offering price set forth on the cover of this prospectus supplement. In addition, the underwriters may offer some of the shares and warrants to other securities dealers at such price less a concession of $ per share and warrant. If all of the shares and warrants offered by us are not sold at the public offering price, the underwriters may change the offering price and other selling terms by means of a further supplement to this prospectus supplement.

We have granted the underwriters an over-allotment option. This option, which is exercisable for up to 45 days after the date of this prospectus supplement, permits the underwriters to purchase a maximum of additional shares and/or warrants from us to cover over-allotments, if any. If the underwriters exercise all or part of this option, they will purchase shares covered by the option at the public offering price that appears on the cover page of this prospectus supplement, less the underwriting discount, and/or warrants at the price of $ per warrant. If this option is exercised in full, the total price to the public will be approximately $ million and the total proceeds to us, before expenses, will be approximately $ million.

Discounts and Commissions. The following table shows the public offering price, underwriting discount and proceeds, before expenses, to us. The information assumes either no exercise or full exercise by the underwriters of their over-allotment option.

	Total Per Share and Warrant	Total Without Over-allotment	Total With Over-allotment
Public offering price	$	$	$
Underwriting discount (7%)	$	$	$
Proceeds, before expenses, to us	$	$	$

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We have agreed to pay to the representative a non-accountable expense allowance in the amount of 1% of the total public offering price of the shares of common stock and warrants sold (excluding the shares of our common stock and warrants that are sold pursuant to the over-allotment option). We have also agreed to pay a $55,000 restructuring fee to the representative upon the closing of the offering.

We have agreed to reimburse the underwriters at closing for legal and other out-of-pocket accountable expenses incurred by them in an amount not to exceed $125,000 (inclusive of attorney s fees). We have paid a $25,000 advance to the representative to be applied against the representative s accountable expenses. The advance shall be returned to us to the extent the expenses have not been actually incurred.

Underwriter Warrants. We have agreed to issue to the underwriters warrants, or the Underwriter Warrants, to purchase a number of shares of common stock equal to 5% of the number of shares sold by us in the offering. The Underwriter Warrants are exercisable for cash or on a cashless basis at a per share exercise price equal to 125% of the public offering price per share of common stock in the offering, are exercisable beginning one year after the effective date of the offering and expiring on a date which is no more than four years from the effective date of the offering. The Underwriter Warrants provide for registration rights, including unlimited piggyback registration rights. The exercise price and number of shares of common stock issuable upon exercise of the warrants may be adjusted in certain circumstances including in the event of a stock dividend, extraordinary cash dividend or our recapitalization, reorganization, merger or consolidation. However, the warrant exercise price or underlying shares will not be adjusted for issuances of shares of common stock at a price below the warrant exercise price.

Right of First Refusal. Until twelve months after the closing date of the offering, the representative will have an irrevocable right of first refusal to act as sole and exclusive investment banker, sole and exclusive book-runner and/or sole and exclusive placement agent at the representative s sole and exclusive discretion for each and every future public and private equity and debt offering, including all equity linked financings, during such twelve month period, of the Company on commercially reasonable terms and conditions.

Discretionary Accounts. The underwriters do not intend to confirm sales of the securities offered hereby to any accounts over which they have discretionary authority.

Lock-Up Agreements. Our directors and executive officers and certain of our stockholders entered into lock-up agreements with the underwriters. Under these agreements, these individuals have agreed, subject to specified exceptions, not to sell or transfer any common stock or securities convertible into, or exchangeable or excercisable for, our common stock during a period ending 90 days after the date of this prospectus supplement, without first obtaining the written consent of the representative. Specifically, these individuals have agreed, in part, not to:

offer, pledge, sell, contract to sell, grant, lend, or otherwise transfer or dispose of, directly or indirectly, any shares of our common stock or securities convertible into, or exchangeable or excercisable for, our common stock;

enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of our securities, whether any such transaction described in the this paragraph or the paragraph above is to be settled by delivery of our securities, in cash or otherwise;

make any demand for or exercise any right with respect to the registration of any of our securities; or

publicly disclose the intention to make any offer, sale, pledge or disposition, or to enter into any transaction, swap, hedge or other arrangement relating to any of our securities.

Notwithstanding these limitations, these shares of capital stock may be transferred under limited circumstances, including, without limitation, by gift, will or intestate succession.

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Electronic Offer, Sale and Distribution of Shares. A prospectus supplement in electronic format may be made available on the websites maintained by one or more of the underwriters or selling group members, if any, participating in this offering and one or more of the underwriters participating in this offering may distribute prospectus supplements electronically. The representative may agree to allocate a number of shares to underwriters and selling group members for sale to their online brokerage account holders. Internet distributions will be allocated by the underwriters and selling group members that will make internet distributions on the same basis as other allocations. Other than the prospectus supplement in electronic format, the information on these websites is not part of this prospectus supplement or the registration statement of which this prospectus supplement forms a part, has not been approved or endorsed by us or any underwriter in its capacity as underwriter, and should not be relied upon by investors.

Other Relationships. Certain of the underwriters and their affiliates have provided, and may in the future provide, various investment banking, commercial banking and other financial services for us and our affiliates for which they have received, and may in the future receive, customary fees; however, except as disclosed in this prospectus supplement, we have no present arrangements with the underwriters for any further services.

In April 2017, we sold an aggregate of $1.15 million of promissory notes in a bridge financing pursuant to a securities purchase agreement to help facilitate the completion of our merger with Precipio Diagnostics, LLC. Aegis acted as placement agent for the bridge financing and received a placement agent fee of $84,000 and warrants to acquire 168,000 shares of our common stock at an exercise price of $0.50 per share.

Stabilization. In connection with this offering, the underwriters may engage in stabilizing transactions, over-allotment transactions, syndicate covering transactions, penalty bids and purchases to cover positions created by short sales.

Stabilizing transactions permit bids to purchase shares so long as the stabilizing bids do not exceed a specified maximum, and are engaged in for the purpose of preventing or retarding a decline in the market price of the shares while the offering is in progress.

Over-allotment transactions involve sales by the underwriters of shares in excess of the number of shares the underwriters are obligated to purchase. This creates a syndicate short position which may be either a covered short position or a naked short position. In a covered short position, the number of shares over-allotted by the underwriters is not greater than the number of shares that they may purchase in the over-allotment option. In a naked short position, the number of shares involved is greater than the number of shares in the over-allotment option. The underwriters may close out any short position by exercising their over-allotment option and/or purchasing shares in the open market.

Syndicate covering transactions involve purchases of shares in the open market after the distribution has been completed in order to cover syndicate short positions. In determining the source of shares to close out the short position, the underwriter s will consider, among other things, the price of shares available for purchase in the open market as compared with the price at which they may purchase shares through exercise of the over-allotment option. If the underwriters sell more shares than could be covered by exercise of the over-allotment option and, therefore, have a naked short position, the position can be closed out only by buying shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that after pricing there could be downward pressure on the price of the shares in the open market

that could adversely affect investors who purchase in the offering.

Penalty bids permit the underwriters to reclaim a selling concession from a syndicate member when the shares originally sold by that syndicate member are purchased in stabilizing or syndicate covering transactions to cover syndicate short positions.

These stabilizing transactions, syndicate covering transactions and penalty bids may have the effect of raising or maintaining the market price of our shares or common stock or preventing or retarding a decline in the market

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price of our shares of common stock. As a result, the price of our common stock in the open market may be higher than it would otherwise be in the absence of these transactions. Neither we nor the underwriters make any representation or prediction as to the effect that the transactions described above may have on the price of our common stock. These transactions may be effected on NASDAQ, in the over-the-counter market or otherwise and, if commenced, may be discontinued at any time.

Passive Market Making. In connection with this offering, the underwriters and selling group members may engage in passive market making transactions in our common stock on NASDAQ in accordance with Rule 103 of Regulation M under the Securities Exchange Act of 1934, as amended, or the Exchange Act, during a period before the commencement of offers or sales of the shares and extending through the completion of the distribution. A passive market maker must display its bid at a price not in excess of the highest independent bid of that security. However, if all independent bids are lowered below the passive market maker s bid, that bid must then be lowered when specified purchase limits are exceeded.

Offer restrictions outside the United States

Other than in the United States, no action has been taken by us or the underwriters that would permit a public offering of the securities offered by this prospectus supplement in any jurisdiction where action for that purpose is required. The securities offered by this prospectus supplement and the accompanying prospectus may not be offered or sold, directly or indirectly, nor may this prospectus supplement or any other offering material or advertisements in connection with the offer and sale of any such securities be distributed or published in any jurisdiction, except under circumstances that will result in compliance with the applicable rules and regulations of that jurisdiction. Persons into whose possession this prospectus supplement comes are advised to inform themselves about and to observe any restrictions relating to the offering and the distribution of this prospectus supplement. This prospectus supplement does not constitute an offer to sell or a solicitation of an offer to buy any securities offered by this prospectus supplement in any jurisdiction in which such an offer or a solicitation is unlawful.

Australia

This prospectus is not a disclosure document under Chapter 6D of the Australian Corporations Act, has not been lodged with the Australian Securities and Investments Commission and does not purport to include the information required of a disclosure document under Chapter 6D of the Australian Corporations Act. Accordingly, (i) the offer of the common stock and warrants under this prospectus supplement is only made to persons to whom it is lawful to offer the common stock and warrants without disclosure under Chapter 6D of the Australian Corporations Act under one or more exemptions set out in section 708 of the Australian Corporations Act, (ii) this prospectus is made available in Australia only to those persons as set forth in clause (i) above, and (iii) the offeree must be sent a notice stating in substance that by accepting this offer, the offeree represents that the offeree is such a person as set forth in clause (i) above, and, unless permitted under the Australian Corporations Act, agrees not to sell or offer for sale within Australia any of the common stock and warrants sold to the offeree within twelve (12) months after its transfer to the offeree under this prospectus.

China

The information in this document does not constitute a public offer of the common stock and warrants, whether by way of sale or subscription, in the People s Republic of China (excluding, for purposes of this paragraph, Hong Kong Special Administrative Region, Macau Special Administrative Region and Taiwan). The common stock and warrants may not be offered or sold directly or indirectly in the PRC to legal or natural persons other than directly to qualified domestic institutional investors.

European Economic Area-Belgium, Germany, Luxembourg and Netherlands

The information in this document has been prepared on the basis that all offers of common stock and warrants will be made pursuant to an exemption under the Directive 2003/71/EC (Prospectus Directive), as implemented

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in Member States of the European Economic Area (each, a Relevant Member State), from the requirement to produce a prospectus for offers of securities.

An offer to the public of common stock and warrants has not been made, and may not be made, in a Relevant Member State except pursuant to one of the following exemptions under the Prospectus Directive as implemented in that Relevant Member State:

(a) to legal entities that are authorized or regulated to operate in the financial markets or, if not so authorized or regulated, whose corporate purpose is solely to invest in securities;

(b) to any legal entity that has two or more of (i) an average of at least 250 employees during its last fiscal year; (ii) a total balance sheet of more than 43,000,000 (as shown on its last annual unconsolidated or consolidated financial statements) and (iii) an annual net turnover of more than 50,000,000 (as shown on its last annual unconsolidated or consolidated financial statements);

(c) to fewer than 100 natural or legal persons (other than qualified investors within the meaning of Article 2(1)(e) of the Prospectus Directive) subject to obtaining the prior consent of the Company or any underwriter for any such offer; or

(d) in any other circumstances falling within Article 3(2) of the Prospectus Directive, provided that no such offer of common stock shall result in a requirement for the publication by the Company of a prospectus pursuant to Article 3 of the Prospectus Directive.

France

This document is not being distributed in the context of a public offering of financial securities (*offre au public de titres financiers*) in France within the meaning of Article L.411-1 of the French Monetary and Financial Code (*Code monétaire et financier*) and Articles 211-1 et seq. of the General Regulation of the French *Autorité des marchés financiers* (AMF). The common stock and warrants have not been offered or sold and will not be offered or sold, directly or indirectly, to the public in France.

This document and any other offering material relating to the common stock and warrants have not been, and will not be, submitted to the AMF for approval in France and, accordingly, may not be distributed or caused to distributed, directly or indirectly, to the public in France.

Such offers, sales and distributions have been and shall only be made in France to (i) qualified investors (*investisseurs qualifiés*) acting for their own account, as defined in and in accordance with Articles L.411-2-II-2° and D.411-1 to D.411-3, D. 744-1, D.754-1 and D.764-1 of the French Monetary and Financial Code and any implementing regulation and/or (ii) a restricted number of non-qualified investors (*cercle restreint d investisseurs*) acting for their own account, as defined in and in accordance with Articles L.411-2-II-2° and D.411-4, D.744-1, D.754-1 and D.764-1 of the French Monetary and Financial Code and any implementing regulation.

Pursuant to Article 211-3 of the General Regulation of the AMF, investors in France are informed that the common stock cannot be distributed (directly or indirectly) to the public by the investors otherwise than in accordance with Articles L.411-1, L.411-2, L.412-1 and L.621-8 to L.621-8-3 of the French Monetary and Financial Code.

Ireland

The information in this document does not constitute a prospectus under any Irish laws or regulations and this document has not been filed with or approved by any Irish regulatory authority as the information has not been

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prepared in the context of a public offering of securities in Ireland within the meaning of the Irish Prospectus (Directive 2003/71/EC) Regulations 2005 (the Prospectus Regulations). The common stock and warrants have not been offered or sold, and will not be offered, sold or delivered directly or indirectly in Ireland by way of a public offering, except to (i) qualified investors as defined in Regulation 2(l) of the Prospectus Regulations and (ii) fewer than 100 natural or legal persons who are not qualified investors.

Israel

The common stock and warrants offered by this prospectus supplement have not been approved or disapproved by the Israeli Securities Authority, or ISA, nor have such common stock and warrants been registered for sale in Israel. The securities may not be offered or sold, directly or indirectly, to the public in Israel, absent the publication of a prospectus. The ISA has not issued permits, approvals or licenses in connection with the offering or publishing the prospectus supplement; nor has it authenticated the details included herein, confirmed their reliability or completeness, or rendered an opinion as to the quality of the common stock and warrants being offered. Any resale in Israel, directly or indirectly, to the public of the common stock and warrants offered by this prospectus supplement is subject to restrictions on transferability and must be effected only in compliance with the Israeli securities laws and regulations.

Italy

The offering of the common stock and warrants in the Republic of Italy has not been authorized by the Italian Securities and Exchange Commission (*Commissione Nazionale per le Società e la Borsa*, CONSOB) pursuant to the Italian securities legislation and, accordingly, no offering material relating to the common stock and warrants may be distributed in Italy and such securities may not be offered or sold in Italy in a public offer within the meaning of Article 1.1(t) of Legislative Decree No. 58 of 24 February 1998 (Decree No. 58), other than:

- to Italian qualified investors, as defined in Article 100 of Decree no. 58 by reference to Article 34-ter of CONSOB Regulation no. 11971 of 14 May 1999 (Regulation no. 11971) as amended (Qualified Investors); and
- in other circumstances that are exempt from the rules on public offer pursuant to Article 100 of Decree No. 58 and Article 34-ter of Regulation No. 11971 as amended.

Any offer, sale or delivery of the common stock and warrants or distribution of any offer document relating to the common stock and warrants in Italy (excluding placements where a Qualified Investor solicits an offer from the issuer) under the paragraphs above must be:

- made by investment firms, banks or financial intermediaries permitted to conduct such activities in Italy in accordance with Legislative Decree No. 385 of 1 September 1993 (as amended), Decree No. 58, CONSOB Regulation No. 16190 of 29 October 2007 and any other applicable laws; and
- in compliance with all relevant Italian securities, tax and exchange controls and any other applicable laws.

Any subsequent distribution of the common stock and warrants in Italy must be made in compliance with the public offer and prospectus requirement rules provided under Decree No. 58 and the Regulation No. 11971 as amended, unless an exception from those rules applies. Failure to comply with such rules may result in the sale of such common stock and warrants being declared null and void and in the liability of the entity transferring the common stock for any damages suffered by the investors.

Japan

The common stock and warrants have not been and will not be registered under Article 4, paragraph 1 of the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948), as amended (the FIEL) pursuant to

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an exemption from the registration requirements applicable to a private placement of securities to Qualified Institutional Investors (as defined in and in accordance with Article 2, paragraph 3 of the FIEL and the regulations promulgated thereunder). Accordingly, the common stock and warrants may not be offered or sold, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan other than Qualified Institutional Investors. Any Qualified Institutional Investor who acquires common stock may not resell them to any person in Japan that is not a Qualified Institutional Investor, and acquisition by any such person of common stock and warrants is conditional upon the execution of an agreement to that effect.

Portugal

This document is not being distributed in the context of a public offer of financial securities (*oferta pública de valores mobiliários*) in Portugal, within the meaning of Article 109 of the Portuguese Securities Code (*Código dos Valores Mobiliários*). The common stock and warrants have not been offered or sold and will not be offered or sold, directly or indirectly, to the public in Portugal. This document and any other offering material relating to the common stock and warrants have not been, and will not be, submitted to the Portuguese Securities Market Commission (*Comissão do Mercado de Valores Mobiliários*) for approval in Portugal and, accordingly, may not be distributed or caused to distributed, directly or indirectly, to the public in Portugal, other than under circumstances that are deemed not to qualify as a public offer under the Portuguese Securities Code. Such offers, sales and distributions of common stock and warrants in Portugal are limited to persons who are qualified investors (as defined in the Portuguese Securities Code). Only such investors may receive this document and they may not distribute it or the information contained in it to any other person.

Sweden

This document has not been, and will not be, registered with or approved by Finansinspektionen (the Swedish Financial Supervisory Authority). Accordingly, this document may not be made available, nor may the common stock and warrants be offered for sale in Sweden, other than under circumstances that are deemed not to require a prospectus under the Swedish Financial Instruments Trading Act (1991:980) (Sw. lag (1991:980) *om handel med finansiella instrument*)). Any offering of common stock and warrants in Sweden is limited to persons who are qualified investors (as defined in the Financial Instruments Trading Act). Only such investors may receive this document and they may not distribute it or the information contained in it to any other person.

Switzerland

The common stock and warrants may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange (SIX) or on any other stock exchange or regulated trading facility in Switzerland. This document has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering material relating to the common stock may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering material relating to the common stock and warrants have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of common stock and warrants will not be supervised by, the Swiss Financial Market Supervisory Authority.

This document is personal to the recipient only and not for general circulation in Switzerland.

United Arab Emirates

Neither this document nor the common stock and warrants has been approved, disapproved or passed on in any way by the Central Bank of the United Arab Emirates or any other governmental authority in the United Arab

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Emirates, nor has the Company received authorization or licensing from the Central Bank of the United Arab Emirates or any other governmental authority in the United Arab Emirates to market or sell the common stock and warrants within the United Arab Emirates. This document does not constitute and may not be used for the purpose of an offer or invitation. No services relating to the common stock and warrants, including the receipt of applications and/or the allotment or redemption of such shares, may be rendered within the United Arab Emirates by us.

No offer or invitation to subscribe for common stock and warrants is valid or permitted in the Dubai International Financial Centre.

United Kingdom

Neither the information in this document nor any other document relating to the offer has been delivered for approval to the Financial Services Authority in the United Kingdom and no prospectus (within the meaning of section 85 of the Financial Services and Markets Act 2000, as amended (FSMA)) has been published or is intended to be published in respect of the common stock and warrants. This document is issued on a confidential basis to qualified investors (within the meaning of section 86(7) of FSMA) in the United Kingdom, and the common stock and warrants may not be offered or sold in the United Kingdom by means of this document, any accompanying letter or any other document, except in circumstances which do not require the publication of a prospectus pursuant to section 86(1) FSMA. This document should not be distributed, published or reproduced, in whole or in part, nor may its contents be disclosed by recipients to any other person in the United Kingdom.

Any invitation or inducement to engage in investment activity (within the meaning of section 21 of FSMA) received in connection with the issue or sale of the common stock and warrants has only been communicated or caused to be communicated and will only be communicated or caused to be communicated in the United Kingdom in circumstances in which section 21(1) of FSMA does not apply to the Company.

In the United Kingdom, this document is being distributed only to, and is directed at, persons (i) who have professional experience in matters relating to investments falling within Article 19(5) (investment professionals) of the Financial Services and Markets Act 2000 (Financial Promotions) Order 2005 (FPO); (ii) who fall within the categories of persons referred to in Article 49(2)(a) to (d) (high net worth companies, unincorporated associations, etc.) of the FPO; or (iii) to whom it may otherwise be lawfully communicated (together relevant persons). The investments to which this document relates are available only to, and any invitation, offer or agreement to purchase will be engaged in only with, relevant persons. Any person who is not a relevant person should not act or rely on this document or any of its contents.

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LEGAL MATTERS

The validity of the issuance of the securities offered hereby will be passed upon for us by Goodwin Procter LLP, New York, New York. Sichenzia Ross Ference Kesner LLP is acting as counsel for the underwriters.

EXPERTS

The financial statements of Precipio Diagnostics, LLC as of and for the year ended December 31, 2016 appearing in our Current Report on Form 8-K/A, filed with the SEC on July 31, 2017, have been audited by Marcum LLP, an independent auditing firm, to the extent and period as set forth in their report thereon, and incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing. The financial statements of Precipio Diagnostics, LLC as of and for the year ended December 31, 2015 appearing in our Current Report on Form 8-K/A, filed with the SEC on July 31, 2017, have been audited by Whittlesey & Hadley, P.C., an independent auditing firm, to the extent and period as set forth in their report thereon, and incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC s website at http://www.sec.gov. The SEC s website contains reports, proxy and information statements and other information regarding issuers, such as us, that file electronically with the SEC. You may also read and copy any document we file with the SEC at the SEC s Public Reference Room at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You may also obtain copies of these documents at prescribed rates by writing to the SEC. Please call the SEC at 1-800-SEC-0330 for further information on the operation of its Public Reference Room.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to incorporate by reference into this prospectus supplement the information we have filed with the SEC. The information we incorporate by reference into this prospectus supplement is an important part of this prospectus supplement. Any statement in a document we incorporate by reference into this prospectus supplement or the accompanying prospectus will be considered to be modified or superseded to the extent a statement contained in this prospectus supplement or any other subsequently filed document that is incorporated by reference into this prospectus supplement modifies or supersedes that statement. The modified or superseded statement will not be considered to be a part of this prospectus supplement or accompanying prospectus, as applicable, except as modified or superseded.

We incorporate by reference into this prospectus supplement the information contained in the documents listed below, which is considered to be a part of this prospectus supplement:

- our Annual Report on Form 10-K for the year ended December 31, 2016, filed on April 13, 2017;
- our Quarterly Report on Form 10-Q for the quarter ended March 31, 2017, filed on May 18, 2017;

our Current Reports on Form 8-K and 8-K/A filed with the SEC on January 6, 2017, January 17, 2017, January 19, 2017, January 20, 2017, February 3, 2017, February 21, 2017, February 24, 2017, April 17, 2017, May 25, 2017, June 6, 2017, June 27, 2017, June 28, 2017 (File No. 001-36439), June 30, 2017 and July 31, 2017;

our soliciting materials on Schedule 14A filed on April 20, 2017 and May 22, 2017;

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our Definitive Proxy Statement on Schedule 14A filed on May 12, 2017;

our Definitive Additional Materials on Schedule 14A filed on May 25, 2017 and May 26, 2017; and

the description of our common stock contained in the Registration Statement on Form 8-A filed on June 29, 2017 (File No. 001-36439), and any further amendment or report filed thereafter for the purpose of updating such description.

We also incorporate by reference all documents filed pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus supplement and prior to the termination of this offering; provided, however, that we are not incorporating any information furnished under Item 2.02 or Item 7.01 of any current report on Form 8-K we may subsequently file.

Statements made in this prospectus supplement or the accompanying prospectus or in any document incorporated by reference in this prospectus supplement or the accompanying prospectus as to the contents of any contract or other document referred to herein or therein are not necessarily complete, and in each instance reference is made to the copy of such contract or other document filed as an exhibit to the documents incorporated by reference, each such statement being qualified in all material respects by such reference.

You may access our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to any of these reports, free of charge on the SEC s website. You may also access the documents incorporated by reference on our website at *www.precipiodx.com*. Other than the foregoing documents incorporated by reference, the information contained in, or that can be accessed through, our website is not part of this prospectus supplement.

In addition, we will furnish without charge to each person, including any beneficial owner, to whom a prospectus supplement is delivered, on written or oral request of such person, a copy of any or all of the documents incorporated by reference in this prospectus supplement (not including exhibits to such documents, unless such exhibits are specifically incorporated by reference in this prospectus supplement or into such documents). Such requests may be directed to Investor Relations, Precipio, Inc., 4 Science Park, New Haven, Connecticut 06511 or call (203) 787-7888.

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PROSPECTUS

Transgenomic, Inc.

$50,000,000

Common Stock

Preferred Stock

Debt Securities

Warrants

Units

We may offer and sell up to $50,000,000 in the aggregate of any combination of the securities identified above from time to time in one or more offerings, either individually or in combination with other securities. We may also offer common stock or preferred stock upon conversion of debt securities, common stock upon conversion of preferred stock, or common stock, preferred stock or debt securities upon the exercise of warrants.

Each time we offer and sell securities, we will provide a supplement to this prospectus that contains specific information about the offering and the amounts, prices and terms of the securities. We may also authorize one or more free writing prospectuses to be provided to you in connection with these offerings. The prospectus supplement and any related free writing prospectuses may also add, update or change information contained in this prospectus with respect to that offering. You should carefully read this prospectus and the applicable prospectus supplement and any related free writing prospectus, as well as any documents incorporated by reference, before you invest in any of our securities.

We may offer and sell the securities described in this prospectus and any prospectus supplement to or through one or more underwriters, dealers and agents, or directly to purchasers, or through a combination of these methods. If any underwriters, dealers or agents are involved in the sale of any of the securities, their names and any applicable purchase price, fee, commission or discount arrangement between or among them will be set forth, or will be calculable from the information set forth, in the applicable prospectus supplement. See the sections of this prospectus entitled About this Prospectus and Plan of Distribution for more information. No securities may be sold without delivery of this prospectus and the applicable prospectus supplement describing the method and terms of the offering of such securities.

Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading Risk Factors on page 3 of this prospectus, any applicable prospectus supplement and in any applicable free writing prospectuses, and under similar headings in the documents that are incorporated by reference into this prospectus.

Our common stock is currently listed on the NASDAQ Capital Market under the symbol TBIO . On February 3, 2015, the last reported sales price for our common stock was $3.32 per share. The applicable prospectus supplement will contain information, where applicable, as to any other listing on the NASDAQ Capital Market or any securities market or other exchange of the securities, if any, covered by the applicable prospectus supplement.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is February 13, 2015.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or the SEC, utilizing a shelf registration process. Under this shelf registration process, we may offer and sell shares of our common stock and preferred stock, various series of debt securities, warrants to purchase any of such securities and/or units consisting of any combination of such securities, either individually or in combination with other securities, in one or more offerings, up to a total dollar amount of $50,000,000. This prospectus provides you with a general description of the securities we may offer.

Each time we offer securities under this prospectus, we will provide a prospectus supplement that will contain more specific information about the terms of that offering. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. The prospectus supplement and any related free writing prospectus we have authorized for use in connection with a specific offering may also add, update or change any of the information contained in this prospectus or in the documents that we have incorporated by reference into this prospectus. We urge you to read carefully this prospectus, any applicable prospectus supplement and any free writing prospectuses we have authorized for use in connection with a specific offering, together with the information incorporated herein by reference as described under the section entitled Important Information Incorporated by Reference , before buying any of the securities being offered.

You should rely only on the information contained in, or incorporated by reference into, this prospectus and any applicable prospectus supplement, along with the information contained in any free writing prospectuses we have authorized for use in connection with a specific offering. We have not authorized anyone to provide you with different or additional information. This prospectus is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so.

The information appearing in this prospectus, any applicable prospectus supplement or any related free writing prospectus is accurate only as of the date on the front of the document and any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus, any applicable prospectus supplement or any related free writing prospectus, or any sale of a security. Our business, financial condition, results of operations and prospects may have changed since those dates.

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under the heading Where You Can Find More Information .

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PROSPECTUS SUMMARY

This summary highlights selected information contained elsewhere in this prospectus or incorporated by reference in this prospectus, and does not contain all of the information that you need to consider in making your investment decision. You should carefully read the entire prospectus, any applicable prospectus supplement and any related free writing prospectus, including the risks of investing in our securities discussed under the heading Risk Factors contained in any applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus. You should also carefully read the information incorporated by reference into this prospectus, including our financial statements, and the exhibits to the registration statement of which this prospectus is a part. Unless otherwise mentioned or unless the context requires otherwise, all references in this prospectus to Transgenomic , the Company , we , us , our or similar references mean Transgenomic, Inc. together with its consolidated subsidiary.

Transgenomic, Inc.

We are a global biotechnology company advancing personalized medicine in the detection and treatment of cancer and inherited diseases through our proprietary molecular technologies and clinical and research services. We have two complementary business segments:

Laboratory Services. Our laboratories specialize in genetic testing for cardiology, neurology, mitochondrial disorders and oncology. Our Patient Testing laboratories located in New Haven, Connecticut and Omaha, Nebraska are certified under the Clinical Laboratory Improvement Amendment as high complexity labs and our Omaha facility is also accredited by the College of American Pathologists. Our Biomarker Identification laboratory located in Omaha, Nebraska also provides pharmacogenomics research services supporting Phase II and Phase III clinical trials conducted by pharmaceutical companies. Our laboratories employ a variety of genomic testing service technologies, including ICE COLD-PCR technology. ICE COLD-PCR is a proprietary platform technology that can be run in any laboratory with standard PCR technology and that enables detection of multiple unknown mutations from virtually any sample type, including tissue biopsies, blood, cell-free DNA and circulating tumor cells at levels greater than 1,000-fold higher than standard DNA sequencing techniques.

Genetic Assays and Platforms. Our proprietary product is the WAVE® System, which has broad applicability to genetic variation detection in both molecular genetic research and molecular diagnostics. We also distribute bioinstruments produced by other manufacturers, or 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 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, or the SEC, that are incorporated by reference in this prospectus, including our Annual Report on Form 10-K for the year ended December 31, 2013. For instructions on how to find copies of these documents, see Where You Can Find More 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 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.

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RISK FACTORS

Investing in any securities offered pursuant to this prospectus and the applicable prospectus supplement involves a high degree of risk. Before making an investment decision, you should carefully consider the risks described under Risk Factors in any applicable prospectus supplement and in our most recent Annual Report on Form 10-K, or any updates in our Quarterly Reports on Form 10-Q, together with all of the other information appearing in or incorporated by reference into this prospectus and any applicable prospectus supplement, before deciding whether to purchase any of the securities being offered. Our business, financial condition or results of operations could be materially adversely affected by any of these risks. The occurrence of any of these risks might cause you to lose all or part of your investment in the offered securities.

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DISCLOSURE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference into this prospectus may contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or 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 , estimates , pro form 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.

You should read this prospectus and the documents incorporated by reference completely and with the understanding that our actual future results may be materially different from what we currently expect. Our business 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 Part I Item 1A, Risk Factors , in our Annual Report on Form 10-K for the year ended December 31, 2013, as filed with the SEC on March 27, 2014, and elsewhere in the documents incorporated by reference into this prospectus.

You should assume that the information appearing in this prospectus, any accompanying prospectus supplement, any related free writing prospectus and any document incorporated herein by reference is accurate as of its date only. Because the risk factors referred to above could cause actual results or outcomes to differ materially from those expressed in any forward-looking statements made by us or on our behalf, you should not place undue reliance on any forward-looking statements. Further, any forward-looking statement speaks only as of the date on which it is made. New factors emerge from time to time, and it is not possible for us to predict which factors will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. 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.

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USE OF PROCEEDS

Except as described in any applicable prospectus supplement or in any free writing prospectuses we have authorized for use in connection with a specific offering, we currently intend to use the net proceeds from this offering, if any, for working capital and general corporate purposes, which may include, without limitation, supporting asset growth and engaging in acquisitions or other business combinations. We also may use a portion of the proceeds to repay debt.

The amounts and timing of our use of the net proceeds from this offering will depend on a number of factors, such as the timing and progress of our research and development efforts, the timing and progress of any partnering and commercialization efforts, technological advances and the competitive environment for our products. As of the date of this prospectus, we cannot specify with certainty all of the particular uses for the net proceeds to us from this offering. Accordingly, our management will have broad discretion in the timing and application of these proceeds. Pending application of the net proceeds as described above, we intend to temporarily invest the proceeds in short-term, interest-bearing instruments.

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RATIO OF EARNINGS TO FIXED CHARGES AND PREFERRED SHARE DIVIDENDS

The following table sets forth the historical ratios of earnings to fixed charges and preferred share dividends for Transgenomic and its subsidiary for the periods indicated.

	Year Ended December 31,					Nine Months Ended September 30,
	2009	2010	2011	2012	2013	2014
Ratio of earnings (loss) to fixed charges[1]						
Ratio of earnings (loss) to combined fixed charges and preferred share dividends[2]						

(1) We did not record earnings for any of the years ended December 31, 2009, 2010, 2011, 2012 or 2013 or the nine months ended September 30, 2014. Accordingly, our earnings were insufficient to cover fixed charges for such periods and we are unable to disclose a ratio of earnings to fixed charges for such periods. The dollar amount of the deficiency in earnings available for fixed charges for the years ended December 31, 2009, 2010, 2011, 2012 and 2013 and the nine months ended September 30, 2014 was approximately $1.878 million, $2.984 million, $9.737 million, $8.181 million, $16.041 million and $7.678 million.

(2) We did not record earnings for any of the years ended December 31, 2009, 2010, 2011, 2012 or 2013 or the nine months ended September 30, 2014. Accordingly, our earnings were insufficient to cover combined fixed charges and preference dividends for such periods and we are unable to disclose a ratio of earnings to combined fixed charges and preference dividends for such periods. The dollar amount of the deficiency in earnings available for combined fixed charges and preference dividends for the years ended December 31, 2009, 2010, 2011, 2012 and 2013 and the nine months ended September 30, 2014 was approximately $1.878 million, $2.984 million, $10.747 million, $8.841 million, $16.767 million and $8.517 million.

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DESCRIPTION OF CAPITAL STOCK

General Matters

Under our Third Amended and Restated Certificate of Incorporation, as amended from time to time, or the Certificate of Incorporation, we are authorized to issue up to 150,000,000 shares of common stock, $0.01 par value per share, or the Common Stock, from time to time, as provided in a resolution or resolutions adopted by our Board of Directors.

Common Stock

As of January 31, 2015, 8,283,179 shares of Common Stock were issued and outstanding, held by approximately 82 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 stockholders 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 the 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 we may designate and issue in the future.

Preferred Stock

General Matters

Under 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, or the 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 the 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.

Of the number of shares of Preferred Stock authorized by our Certificate of Incorporation, as of January 31, 2015 (i) 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 Amendment of Certificate of Designation of Series A Convertible Preferred Stock filed with the Secretary of State of the State of Delaware on March 5, 2014, or the Series A Certificate of Designation, and (ii) 1,443,297 shares had been designated Series B Convertible Preferred Stock with such rights, privileges and preferences as set forth in the Certificate of Designation of Series B Convertible Preferred Stock filed with the Secretary of State of the State of Delaware on March 5, 2014, or the Series B Certificate of Designation. As of January 31, 2015, 2,586,205 shares of the Series A Convertible Preferred Stock, or the Series A Preferred, were issued and outstanding, and 1,443,297 shares of the Series B Convertible Preferred Stock, or the Series B Preferred,

were issued and outstanding. The Series A Preferred and the Series B Preferred are sometimes referred to in this prospectus, together, as the Preferred Shares.

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Dividends, Voting Rights and Liquidation

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

Certain rights of the holders of the Series B Preferred are senior to the rights of the holders of the Series A Preferred and to the rights of the holders of our Common Stock. The Series B Preferred has a liquidation preference equal to its original price per share, plus any accrued and unpaid dividends thereon. The Series B Preferred accrues cumulative dividends at the rate of 6.0% of the original price per share per annum. Additionally, the Series B Certificate of Designation also contains an optional redemption provision whereby the holders of a majority of the then issued and outstanding Series B Preferred, voting together as a separate class, may, after March 5, 2019, the fifth anniversary of the closing of the private placement in which the shares of Series B Preferred were issued, require the Company to redeem all of the then issued and outstanding shares of Series B Preferred at the initial price per share of the Series B Preferred, as adjusted for any stock dividends, combinations or splits, plus all accrued but unpaid dividends.

Certain rights of the holders of the Series A Preferred are senior to the rights of the holders of our Common Stock. Subject to the liquidation preference of the Series B Preferred, the Series A Preferred has a liquidation preference equal to its original price per share, plus any accrued and unpaid dividends thereon. After the payment of dividends to the holders of Series B Preferred, 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 B Preferred will be automatically converted into Common Stock, at an initial conversion rate of 1:1, and 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 Preferred Shares, voting together as a single class on an as-converted to Common Stock basis. The initial conversion rate for each of the Series A Preferred and the Series B Preferred is subject to adjustment in the event of certain stock splits, stock dividends, mergers, reorganizations and reclassifications. After giving effect to the 1-for-12 reverse split of the Common Stock effected in January 2014, the conversion rate for the Series A Preferred was adjusted to 1:3.

Generally, the holders of the Preferred Shares are entitled to vote together as a single group with the holders of Common Stock on an as-converted to Common Stock basis. However, each of the Series A Certificate of Designation and the Series B Certificate of Designation provides that we will not perform the following activities, subject to certain exceptions, without the affirmative vote of the holders of at least two-thirds of the outstanding Preferred Shares, voting together as a single class on an as-converted to Common Stock basis:

- authorize, create or issue any other class or series of capital stock having rights, preferences or privileges senior to or in parity with the Preferred Shares;
- alter or change the rights, preferences or privileges of the Preferred Shares or increase or decrease the authorized number of Preferred Shares, Series A Preferred or Series B Preferred;
- authorize or declare any dividends on the shares of Common Stock or any other shares of capital stock other than the Preferred Shares, other than dividends payable solely in shares of Common Stock;

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 of Directors;

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enter into any binding agreement with any director, employee or any affiliate of the Company, excluding employment-related and equity award agreements;

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;

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, dissolve 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;

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 of Directors, including the directors elected by the holders of Preferred Shares;

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

We are subject to Section 203 of the General Corporation Law of the State of Delaware, or the DGCL, 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 the 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 662/3% of the outstanding voting stock that is not owned by the interested stockholder.

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In general, Section 203 of the DGCL 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 of the DGCL 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, or the Bylaws, include a number of provisions that may have the effect of deterring hostile takeovers or delaying or preventing changes in control of the 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 our 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 without further action by our stockholders, as described under Preferred Stock above.

Fourth, our Certificate of Incorporation and Bylaws provide for a classified Board of Directors in which approximately one-third of the directors are elected each year. Consequently, any potential acquirer would need to successfully complete two proxy contests in order to take control of our 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.

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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 Certificate of Incorporation and Bylaws could discourage potential acquisition proposals and could delay or prevent a change in control of the management of our company.

Listing

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

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Wells Fargo Shareowner Services. Its address is 1110 Centre Pointe Curve, Suite 101, Mendota Heights, MN 55120 and its telephone number is 1-855-217-6361.

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DESCRIPTION OF DEBT SECURITIES

We may issue debt securities from time to time, in one or more series, as either senior or subordinated debt or as senior or subordinated convertible debt. While the terms we have summarized below will apply generally to any debt securities that we may offer under this prospectus, we will describe the particular terms of any debt securities that we may offer in more detail in the applicable prospectus supplement. The terms of any debt securities offered under a prospectus supplement may differ from the terms described below. Unless the context requires otherwise, whenever we refer to the indenture, we also are referring to any supplemental indentures that specify the terms of a particular series of debt securities.

We will issue the debt securities under the indenture that we will enter into with the trustee named in the indenture. The indenture will be qualified under the Trust Indenture Act of 1939, as amended, or the Trust Indenture Act. We have filed the form of indenture as an exhibit to the registration statement of which this prospectus is a part, and supplemental indentures and forms of debt securities containing the terms of the debt securities being offered will be filed as exhibits to the registration statement of which this prospectus is a part or will be incorporated by reference from reports that we file with the SEC.

The following summary of material provisions of the debt securities and the indenture is subject to, and qualified in its entirety by reference to, all of the provisions of the indenture applicable to a particular series of debt securities. We urge you to read the applicable prospectus supplements and any related free writing prospectuses we authorize for use in connection with a specific offering of debt securities, as well as the complete indenture that contains the terms of the debt securities.

General Matters

The indenture does not limit the amount of debt securities that we may issue. It provides that we may issue debt securities up to the principal amount that we may authorize and in any currency or currency unit that we may designate. Except for the limitations on consolidation, merger and sale of all or substantially all of our assets contained in the indenture, the terms of the indenture do not contain any covenants or other provisions designed to give holders of any debt securities protection against changes in our operations or financial condition or transactions involving us.

We may issue the debt securities issued under the indenture as discount securities , which means they may be sold at a discount below their stated principal amount. These debt securities, as well as other debt securities that are not issued at a discount, may be issued with original issue discount , or OID, for U.S. federal income tax purposes because of interest payment and other characteristics or terms of the debt securities. Material U.S. federal income tax considerations applicable to debt securities issued with OID will be described in more detail in any applicable prospectus supplement.

We will describe in the applicable prospectus supplement the terms of the series of debt securities being offered, including:

- the title of the series of debt securities;
- any limit upon the aggregate principal amount that may be issued;

the maturity date or dates;

the form of the debt securities of the series;

the applicability of any guarantees;

whether or not the debt securities will be secured or unsecured, and the terms of any secured debt;

whether the debt securities rank as senior debt, senior subordinated debt, subordinated debt or any combination thereof, and the terms of any subordination;

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if the price (expressed as a percentage of the aggregate principal amount thereof) at which the debt securities will be issued is a price other than the principal amount thereof, the portion of the principal amount thereof payable upon declaration of acceleration of the maturity thereof, or if applicable, the portion of the principal amount of such debt securities that is convertible into another security or the method by which any such portion shall be determined;

the interest rate or rates, which may be fixed or variable, or the method for determining the rate and the date interest will begin to accrue, the dates interest will be payable and the regular record dates for interest payment dates or the method for determining such dates;

our right, if any, to defer payment of interest and the maximum length of any such deferral period;

if applicable, the date or dates after which, or the period or periods during which, and the price or prices at which, we may, at our option, redeem the series of debt securities pursuant to any optional or provisional redemption provisions and the terms of those redemption provisions;

the date or dates, if any, on which, and the price or prices at which we are obligated, pursuant to any mandatory sinking fund or analogous fund provisions or otherwise, to redeem, or at the holder s option to purchase, the series of debt securities and the currency or currency unit in which the debt securities are payable;

the denominations in which we will issue the series of debt securities, if other than denominations of $1,000 and any integral multiple thereof;

any and all terms, if applicable, relating to any auction or remarketing of the debt securities of that series and any security for our obligations with respect to such debt securities and any other terms which may be advisable in connection with the marketing of debt securities of that series;

whether the debt securities of the series shall be issued in whole or in part in the form of a global security or securities; the terms and conditions, if any, upon which such global security or securities may be exchanged in whole or in part for other individual securities, and the depositary for such global security or securities;

if applicable, the provisions relating to conversion or exchange of any debt securities of the series and the terms and conditions upon which such debt securities will be so convertible or exchangeable, including the conversion or exchange price, as applicable, or how it will be calculated and may be adjusted, any mandatory or optional (at our option or at the holders option) conversion or exchange features, the applicable conversion or exchange period and the manner of settlement for any conversion or exchange;

if other than the full principal amount thereof, the portion of the principal amount of debt securities of the series which shall be payable upon declaration of acceleration of the maturity thereof;

additions to or changes in the covenants applicable to the particular debt securities being issued, including, among others, the consolidation, merger or sale covenant;

additions to or changes in the events of default with respect to the securities and any change in the right of the trustee or the holders to declare the principal, premium, if any, and interest, if any, with respect to such securities to be due and payable;

additions to or changes in or deletions of the provisions relating to covenant defeasance and legal defeasance;

additions to or changes in the provisions relating to satisfaction and discharge of the indenture;

additions to or changes in the provisions relating to the modification of the indenture both with and without the consent of the holders of the debt securities issued under the indenture;

the currency of payment of the debt securities if other than U.S. dollars and the manner of determining the equivalent amount in U.S. dollars;

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whether interest will be payable in cash or additional debt securities at our or the holders option and the terms and conditions upon which the election may be made;

the terms and conditions, if any, upon which we will pay amounts in addition to the stated interest, premium, if any, and principal amounts of the debt securities of the series to any holder that is not a United States person for federal tax purposes;

any restrictions on transfer, sale or assignment of the debt securities of the series; and

any other specific terms, preferences, rights or limitations of, or restrictions on, the debt securities, any other additions or changes in the provisions of the indenture, and any terms that may be required by us or advisable under applicable laws or regulations.

Conversion or Exchange Rights

We will set forth in the applicable prospectus supplement the terms on which a series of debt securities may be convertible into or exchangeable for our Common Stock or our other securities. We will include provisions as to settlement upon conversion or exchange and whether conversion or exchange is mandatory, at the option of the holder or at our option. We may include provisions pursuant to which the number of shares of our Common Stock or our other securities that the holders of the series of debt securities receive would be subject to adjustment.

Consolidation, Merger or Sale

Unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, the indenture will not contain any covenant that restricts our ability to merge or consolidate, or sell, convey, transfer or otherwise dispose of our assets as an entirety or substantially as an entirety. However, any successor to or acquirer of such assets (other than a subsidiary of ours) must assume all of our obligations under the indenture or the debt securities, as appropriate.

Events of Default under the Indenture

Unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, the following are events of default under the indenture with respect to any series of debt securities that we may issue:

if we fail to pay any installment of interest on any series of debt securities, as and when the same shall become due and payable, and such default continues for a period of 90 days; provided, however, that a valid extension of an interest payment period by us in accordance with the terms of any indenture supplemental thereto shall not constitute a default in the payment of interest for this purpose;

if we fail to pay the principal of, or premium, if any, on any series of debt securities as and when the same shall become due and payable whether at maturity, upon redemption, by declaration or otherwise, or in any payment required by any sinking or analogous fund established with respect to such series; provided, however, that a valid extension of the maturity of such debt securities in accordance with the terms of any

indenture supplemental thereto shall not constitute a default in the payment of principal or premium, if any;

if we fail to observe or perform any other covenant or agreement contained in the debt securities or the indenture, other than a covenant specifically relating to another series of debt securities, and our failure continues for a period of 90 days after we receive written notice of such failure, requiring the same to be remedied and stating that such is a notice of default thereunder, from the trustee or holders of at least 25% of the aggregate principal amount of the outstanding debt securities of the applicable series; and

if specified events of bankruptcy, insolvency or reorganization occur.

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If an event of default with respect to debt securities of any series occurs and is continuing, other than certain specified events of bankruptcy, insolvency or reorganization, the trustee or the holders of at least 25% of the aggregate principal amount of the outstanding debt securities of that series, by notice to us in writing, and to the trustee if notice is given by such holders, may declare the unpaid principal, premium, if any, and accrued interest, if any, of such series of debt securities immediately due and payable. If certain specified events of bankruptcy, insolvency or reorganization occur with respect to us, the principal amount and accrued interest, if any, of each issue of debt securities then outstanding shall be due and payable without any notice or other action on the part of the trustee or any holder.

The holders of a majority of the principal amount of the outstanding debt securities of an affected series may waive any default or event of default with respect to the series and its consequences, except defaults or events of default regarding payment of principal, premium, if any, or interest, unless we have cured the default or event of default in accordance with the indenture. Any waiver shall cure the default or event of default.

Subject to the terms of the indenture, if an event of default under an indenture shall occur and be continuing, the trustee will be under no obligation to exercise any of its rights or powers under such indenture at the request or direction of any of the holders of the applicable series of debt securities, unless such holders have offered the trustee reasonable indemnity. The holders of a majority of the principal amount of the outstanding debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee, or exercising any trust or power conferred on the trustee, with respect to the debt securities of that series, provided that:

- the direction so given by the holder is not in conflict with any law or the applicable indenture; and
- subject to its duties under the Trust Indenture Act, the trustee need not take any action that might involve it in personal liability or might be unduly prejudicial to the holders not involved in the proceeding.

A holder of the debt securities of any series will have the right to institute a proceeding under the indenture or to appoint a receiver or trustee, or to seek other remedies, only if:

- the holder has given written notice to the trustee of a continuing event of default with respect to that series;
- the holders of at least 25% of the aggregate principal amount of the outstanding debt securities of that series have made a written request,
- such holders have offered to the trustee indemnity satisfactory to it against the costs, expenses and liabilities to be incurred by the trustee in compliance with the request; and
- the trustee does not institute the proceeding, and does not receive from the holders of a majority of the aggregate principal amount of the outstanding debt securities of that series other conflicting directions within 90 days after the notice, request and offer.

These limitations do not apply to a suit instituted by a holder of debt securities if we default in the payment of the principal of, or the premium, if any, or interest on, the debt securities.

We will periodically file statements with the trustee regarding our compliance with specified covenants in the indenture.

Modification of Indenture; Waiver

Unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, we and the trustee may change an indenture without the consent of any holders with respect to specific matters, including, but not limited to, the following:

to cure any ambiguity, defect or inconsistency in the indenture or in the debt securities of any series;

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to comply with the provisions described above under Consolidation, Merger or Sale ;

to provide for uncertificated debt securities in addition to or in place of certificated debt securities;

to add to our covenants, restrictions, conditions or provisions such new covenants, restrictions, conditions or provisions for the benefit of the holders of all or any series of debt securities, to make the occurrence, or the occurrence and the continuance, of a default in any such additional covenants, restrictions, conditions or provisions an event of default or to surrender any right or power conferred upon us in the indenture;

to add to, delete from or revise the conditions, limitations and restrictions on the authorized amount, terms or purposes of issue, authentication and delivery of debt securities, as set forth in the indenture;

to make any change that does not adversely affect the interests of any holder of debt securities of any series in any material respect;

to provide for the issuance of, and to establish the form and terms and conditions of, the debt securities of any series as provided above under General Matters , to establish the form of any certifications required to be furnished pursuant to the terms of the indenture or any series of debt securities, or to add to the rights of the holders of any series of debt securities;

to evidence and provide for the acceptance of appointment under any indenture by a successor trustee; or

to comply with any requirements of the SEC in connection with the qualification of any indenture under the Trust Indenture Act.

In addition, under the indenture, the rights of holders of a series of debt securities may be changed by us and the trustee with the written consent of the holders of at least a majority of the aggregate principal amount of the outstanding debt securities of each series that is affected. However, unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, we and the trustee may make the following changes only with the consent of each holder of any outstanding debt securities affected:

extending the fixed maturity of any debt securities of any series;

reducing the principal amount, reducing the rate of or extending the time of payment of interest, or reducing any premium payable upon the redemption of any series of debt securities; or

reducing the percentage of debt securities, the holders of which are required to consent to any amendment, supplement, modification or waiver.

Discharge

The indenture provides that we can elect to be discharged from our obligations with respect to one or more series of debt securities, except for specified obligations, including, but not limited to, the following obligations to:

provide for payment;

register the transfer or exchange of debt securities of the series;

replace stolen, lost or mutilated debt securities of the series;

pay principal of and premium and interest on any debt securities of the series;

maintain paying agencies;

hold monies for payment in trust;

recover excess money held by the trustee;

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compensate and indemnify the trustee; and

appoint any successor trustee.

In order to exercise our rights to be discharged, we must deposit with the trustee money or government obligations sufficient to pay all the principal of, and any premium, if any, and interest on, the debt securities of the series on the dates payments are due.

Form, Exchange and Transfer

We will issue the debt securities of each series only in fully registered form without coupons and, unless we provide otherwise in the applicable prospectus supplement, in denominations of $1,000 and any integral multiple thereof. The indenture provides that we may issue debt securities of a series in temporary or permanent global form and as book-entry securities that will be deposited with, or on behalf of, The Depository Trust Company, New York, New York, known as DTC, or another depositary named by us and identified in the applicable prospectus supplement with respect to that series. To the extent the debt securities of a series are issued in global form and as book-entry, a description of terms relating to any book-entry securities will be set forth in the applicable prospectus supplement.

At the option of the holder, subject to the terms of the indenture and the limitations applicable to global securities described in the applicable prospectus supplement, the holder of the debt securities of any series can exchange the debt securities for other debt securities of the same series, in any authorized denomination and of like tenor and aggregate principal amount.

Subject to the terms of the indenture and the limitations applicable to global securities set forth in the applicable prospectus supplement, holders of the debt securities may present the debt securities for exchange or for registration of transfer, duly endorsed or with the form of transfer endorsed thereon duly executed if so required by us or the security registrar, at the office of the security registrar or at the office of any transfer agent designated by us for this purpose. Unless otherwise provided in the debt securities that the holder presents for transfer or exchange, we will impose no service charge for any registration of transfer or exchange, but we may require payment of any taxes or other governmental charges.

We will name in the applicable prospectus supplement the security registrar, and any transfer agent in addition to the security registrar, that we initially designate for any debt securities. We may at any time designate additional transfer agents or rescind the designation of any transfer agent or approve a change in the office through which any transfer agent acts, except that we will be required to maintain a transfer agent in each place of payment for the debt securities of each series.

If we elect to redeem the debt securities of any series, we will not be required to:

issue, register the transfer of, or exchange any debt securities of that series during a period beginning at the opening of business 15 days before the date of mailing of a notice of redemption of any debt securities that may be selected for redemption and ending at the close of business on the date of the mailing; or

register the transfer of or exchange any debt securities so selected for redemption, in whole or in part, except for the unredeemed portion of any debt securities we are redeeming in part.

Information Concerning the Trustee

The trustee, other than during the occurrence and continuance of an event of default under an indenture, undertakes to perform only those duties as are specifically set forth in the applicable indenture. Upon an event of default under an indenture, the trustee must use the same degree of care as a prudent person would exercise or use in the conduct of his or her own affairs. Subject to this provision, the trustee is under no obligation to exercise any of the powers given to it by the indenture at the request of any holder of debt securities unless it is offered reasonable security and indemnity against the costs, expenses and liabilities that it might incur.

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Payment and Paying Agents

Unless we otherwise indicate in the applicable prospectus supplement, we will make payment of the interest on any debt securities on any interest payment date to the person in whose name the debt securities, or one or more predecessor securities, are registered at the close of business on the regular record date for the interest.

We will pay principal of and any premium and interest on the debt securities of a particular series at the office of the paying agents designated by us, except that, unless we otherwise indicate in the applicable prospectus supplement, we will make interest payments by check that we will mail to the holder or by wire transfer to certain holders. Unless we otherwise indicate in the applicable prospectus supplement, we will designate the corporate trust office of the trustee as our sole paying agent for payments with respect to debt securities of each series. We will name in the applicable prospectus supplement any other paying agents that we initially designate for the debt securities of a particular series. We will maintain a paying agent in each place of payment for the debt securities of a particular series.

All money we pay to a paying agent or the trustee for the payment of the principal of, or any premium or interest on, any debt securities that remains unclaimed at the end of two years after such principal, premium or interest has become due and payable will be repaid to us, and the holder of the debt security thereafter may look only to us for payment thereof.

Governing Law

The indenture and the debt securities, and any claim, controversy or dispute arising under or related to the indenture or the debt securities, will be governed by and construed in accordance with the laws of the State of New York, except to the extent that the Trust Indenture Act is applicable.

Unsecured Convertible Promissory Notes

Pursuant to the terms of an Unsecured Convertible Promissory Note Purchase Agreement, or the Note Purchase Agreement, dated December 31, 2014, by and among the Company and certain accredited investors, the Company issued and sold, in a private placement, unsecured convertible promissory notes, or the Notes, in the aggregate principal amount of $1,675,000. In accordance with the terms of the Notes, the outstanding principal and unpaid interest accrued under each Note is convertible into shares of Common Stock as follows: (i) commencing upon the date of issuance of the Note (but no earlier than January 1, 2015), the investor holding such Note is entitled to convert, on a one-time basis, up to 50% of the outstanding principal and unpaid interest accrued under the Note, into shares of Common Stock at a conversion price equal to the lesser of (a) the average closing price of the Common Stock on the principal securities exchange or securities market on which the Common Stock is then traded, or the Market, for the 20 consecutive trading days immediately preceding the date of conversion, and (b) $2.20 (subject to adjustment for stock splits, stock dividends, other distributions, recapitalizations and the like); and (ii) commencing February 15, 2015, the investor holding such Note is entitled to convert, on a one-time basis, any or all of the remaining outstanding principal and unpaid interest accrued under the Note, into shares of Common Stock at a conversion price equal to 85% of the average closing price of the Common Stock on the Market for the 15 consecutive trading days immediately preceding the date of conversion.

Pursuant to the terms of the Note Purchase Agreement, the Company is obligated to use its best efforts to file with the SEC by January 31, 2016 a registration statement to register for resale all of the shares of Common Stock issued on or prior to November 30, 2015 pursuant to the conversion of any portion of the Notes, or the Initial Registration Statement, and to use its commercially reasonable efforts to have the Initial Registration Statement declared effective by the SEC by March 31, 2016. In addition, the Company is obligated to use its best efforts to file with the SEC by

January 31, 2017 an additional registration statement to register for resale all of the shares of Common Stock issued pursuant to the conversion of any portion of the Notes that have not

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previously been registered for resale, or the Additional Registration Statement, and to use its commercially reasonable efforts to have the Additional Registration Statement declared effective by the SEC by March 31, 2017. Under the Note Purchase Agreement, the Company may be required to effect one or more other registrations to register for resale the shares of Common Stock issued or issuable under the Notes in connection with certain piggy-back registration rights granted to the investors in the private placement.

The Company sold the Notes to accredited investors , as that term is defined in the Securities Act and in reliance on the exemption from registration afforded by Section 4(2) of the Securities Act and Rule 506 of Regulation D promulgated under the Securities Act and corresponding provisions of state securities or blue sky laws. Accordingly, the Notes and the shares of Common Stock issued or issuable under the Notes have not been registered under the Securities Act and such securities may not be offered or sold in the United States absent registration or an exemption from registration under the Securities Act and any applicable state securities laws.

Senior Debt

On March 13, 2013, the Company entered into a Loan and Security Agreement, or the Loan Agreement, with Third Security, LLC and its affiliates, or the Lenders, for a revolving line of credit, or the Revolving Line, and a term loan, or the Term Loan. The Loan Agreement, as amended to date, is referred to herein as the Amended Loan Agreement.

Revolving Line

The Company may borrow up to $3.0 million under the Revolving Line. Pursuant to the terms of the Loan Agreement, amounts advanced under the Revolving Line bear interest at an annual rate equal to the greater of (a) 6.25% or (b) the Wall Street Journal prime rate plus 3.0%. The current interest rate is 6.25% under the Amended Loan Agreement. Interest is payable on a monthly basis, with the balance payable at the maturity of the Revolving Line. In accordance with the terms of the Amended Loan Agreement, the Company paid the Lenders an upfront fee of $20,000, and are obligated to pay the Lenders an additional commitment fee of $20,000 on each one-year anniversary of March 13, 2013 during the term of the Revolving Line. In addition, a fee of 0.5% per annum is payable quarterly on the unused portion of the Revolving Line. The Revolving Line matures on September 1, 2016.

Term Loan

The Company received $4.0 million under the Term Loan on March 13, 2013. Interest under the Term Loan accrues at the annual rate of one month LIBOR plus 6.1%, subject to a LIBOR floor of 3%. The Company was required to make interest-only payments under the Term Loan through December 31, 2013, principal and interest payments on a monthly basis in each of January and February 2014 using a straight-line amortization rate, and principal and interest payments on a monthly basis beginning on April 1, 2015 through maturity using a straight-line amortization rate.

The Company paid the Lenders an upfront fee of $40,000 for the Term Loan, and will pay the Lenders an additional final payment of $120,000 at maturity or prepayment of the Term Loan. In addition, if the Company repays the Term Loan prior to maturity, it will pay the Lenders a prepayment penalty of 2.5% of the total outstanding balance under the Term Loan if the prepayment occurs prior to March 13, 2015, and 1.0% of the total outstanding balance under the Term Loan if the prepayment occurs thereafter. The Term Loan matures on September 1, 2016.

Additional Terms

The Amended Loan Agreement contains affirmative and negative covenants reasonably customary for similar credit facilities. Under the Term Loan, the Company is required to maintain a minimum liquidity ratio

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and achieve a minimum amount of revenue, and the Company also agreed not to (i) pledge or otherwise encumber its assets other than to the Lenders, (ii) enter into additional borrowings or guarantees, (iii) repurchase its capital stock, or (iv) enter into certain mergers or acquisitions without the Lenders consent. Additionally, the Amended Loan Agreement contains a subjective acceleration clause at the discretion of the Lenders.

To secure the repayment of any amounts borrowed under the Revolving Line and the Term Loan, the Company granted the Lenders a security interest in all of the Company s assets. The occurrence of an event of default under the Amended Loan Agreement could result in the acceleration of the Company s obligations under the Amended Loan Agreement and would increase the applicable interest rate under the Revolving Line or the Term Loan (or both) by 5.0%, and permit the Lenders to exercise remedies with respect to the collateral under the Amended Loan Agreement.

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DESCRIPTION OF WARRANTS

The following description, together with the additional information we may include in any applicable prospectus supplements and free writing prospectuses we have authorized for use in connection with a specific offering, summarizes the material terms and provisions of the warrants that we may offer under this prospectus, which may consist of warrants to purchase Common Stock, Preferred Stock or debt securities and may be issued in one or more series.

Warrants may be issued independently or together with Common Stock, Preferred Stock or debt securities offered by any prospectus supplement, and may be attached to or separate from those securities. While the terms we have summarized below will apply generally to any warrants that we may offer under this prospectus, we will describe the particular terms of any series of warrants that we may offer in more detail in the applicable prospectus supplement and any applicable free writing prospectus we authorize for use in connection with the specific offering. The terms of any warrants offered under a prospectus supplement may differ from the terms described below.

We have filed forms of the warrant agreements as exhibits to the registration statement of which this prospectus is a part. We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of warrant agreement, if any, including a form of warrant certificate, that describes the terms of the particular series of warrants we are offering. The following summaries of material provisions of the warrants and the warrant agreements are subject to, and qualified in their entirety by reference to, all the provisions of the warrant agreement and warrant certificate applicable to the particular series of warrants that we may offer under this prospectus. We urge you to read the applicable prospectus supplements related to the particular series of warrants that we may offer under this prospectus, as well as any related free writing prospectuses we have authorized for use in connection with a specific offering, and the complete warrant agreements and warrant certificates that contain the terms of the warrants.

General Matters

We will describe in the applicable prospectus supplement the terms relating to a series of warrants being offered, including:

- the title of such securities;
- the offering price or prices and aggregate number of warrants offered;
- the currency or currencies for which the warrants may be purchased;
- if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each such security or each principal amount of such security;
- if applicable, the date on and after which the warrants and the related securities will be separately transferable;

if applicable, the minimum or maximum amount of such warrants which may be exercised at any one time;

in the case of warrants to purchase debt securities, the principal amount of debt securities purchasable upon exercise of one warrant and the price at which, and currency in which, this principal amount of debt securities may be purchased upon such exercise;

in the case of warrants to purchase Common Stock or Preferred Stock, the number of shares of Common Stock or Preferred Stock, as the case may be, purchasable upon the exercise of one warrant and the price at which, and the currency in which, these shares may be purchased upon such exercise;

the effect of any merger, consolidation, sale or other disposition of our business on the warrant agreements and the warrants;

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the terms of any rights to redeem or call the warrants;

the terms of any rights to force the exercise of the warrants;

any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the warrants;

the dates on which the right to exercise the warrants will commence and expire;

the manner in which the warrant agreements and warrants may be modified;

a discussion of any material or special United States federal income tax consequences of holding or exercising the warrants;

the terms of the securities issuable upon exercise of the warrants; and

any other specific terms, preferences, rights or limitations of or restrictions on the warrants.

Before exercising their warrants, holders of warrants will not have any of the rights of holders of the securities purchasable upon such exercise, including:

in the case of warrants to purchase debt securities, the right to receive payments of principal of, or premium, if any, or interest on, the debt securities purchasable upon exercise or to enforce covenants in the applicable indenture; or

in the case of warrants to purchase Common Stock or Preferred Stock, the right to receive dividends, if any, or, payments upon our liquidation, dissolution or winding up or to exercise voting rights, if any.

Exercise of Warrants

Each warrant will entitle the holder to purchase the securities that we specify in the applicable prospectus supplement at the exercise price that we describe in the applicable prospectus supplement. Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants at any time up to the specified time on the expiration date that we set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants by delivering the warrant certificate representing the warrants to be exercised together with specified information, and paying the required amount to the warrant agent in immediately available funds, as provided in the applicable prospectus supplement. We will set forth on the reverse side of the warrant certificate and in the applicable

prospectus supplement the information that the holder of the warrant will be required to deliver to the warrant agent in connection with the exercise of the warrant.

Upon receipt of the required payment and the warrant certificate properly completed and duly executed at the corporate trust office of the warrant agent or any other office indicated in the applicable prospectus supplement, we will issue and deliver the securities purchasable upon such exercise. If fewer than all of the warrants represented by the warrant certificate are exercised, then we will issue a new warrant certificate for the remaining amount of warrants. If we so indicate in the applicable prospectus supplement, holders of the warrants may surrender securities as all or part of the exercise price for warrants.

Governing Law

Unless we provide otherwise in the applicable prospectus supplement, the warrants and warrant agreements, and any claim, controversy or dispute arising under or related to the warrants or warrant agreements, will be governed by and construed in accordance with the laws of the State of New York.

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Enforceability of Rights by Holders of Warrants

Each warrant agent will act solely as our agent under the applicable warrant agreement and will not assume any obligation or relationship of agency or trust with any holder of any warrant. A single bank or trust company may act as warrant agent for more than one issue of warrants. A warrant agent will have no duty or responsibility in case of any default by us under the applicable warrant agreement or warrant, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a warrant may, without the consent of the related warrant agent or the holder of any other warrant, enforce by appropriate legal action its right to exercise, and receive the securities purchasable upon exercise of, its warrants.

Outstanding Warrants

As of January 31, 2015, warrants to purchase 2,376,059 shares of Common Stock with an average exercise price of $9.24 per share were outstanding, and warrants to purchase 1,293,102 shares of Series A Preferred with an average exercise price of $2.32 per share were outstanding. Except for certain warrants to purchase 374,618 shares of Common Stock, all of the outstanding warrants are currently exercisable, and 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.

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DESCRIPTION OF UNITS

We may issue units consisting of any combination of the other types of securities offered under this prospectus in one or more series. We may evidence each series of units by unit certificates that we will issue under a separate agreement. We may enter into unit agreements with a unit agent. Each unit agent will be a bank or trust company that we select. We will indicate the name and address of the unit agent in the applicable prospectus supplement relating to a particular series of units.

The following description, together with the additional information included in any applicable prospectus supplement, summarizes the general features of the units that we may offer under this prospectus. You should read any prospectus supplement and any free writing prospectus we authorize for use in connection with a specific offering of units, as well as the complete unit agreements that contain the terms of the units. Specific unit agreements will contain additional important terms and provisions and we will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from another report that we file with the SEC, the form of each unit agreement relating to units offered under this prospectus.

If we offer any units, certain terms of that series of units will be described in the applicable prospectus supplement, including, without limitation, the following, as applicable:

- the title of the series of units;
- identification and description of the separate constituent securities comprising the units;
- the price or prices at which the units will be issued;
- the date, if any, on and after which the constituent securities comprising the units will be separately transferable;
- a discussion of certain U.S. federal income tax considerations applicable to the units; and
- any other terms of the units and their constituent securities.

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LEGAL OWNERSHIP OF SECURITIES

We can issue securities in registered form or in the form of one or more global securities. We describe global securities in greater detail below. We refer to those persons who have securities registered in their own names on the books that we or any applicable trustee or depositary maintain for this purpose as the holders of those securities. These persons are the legal holders of the securities. We refer to those persons who, indirectly through others, own beneficial interests in securities that are not registered in their own names, as indirect holders of those securities. As we discuss below, indirect holders are not legal holders, and investors in securities issued in book-entry form or in street name will be indirect holders.

Book-Entry Holders

We may issue securities in book-entry form only, as we will specify in the applicable prospectus supplement. This means securities may be represented by one or more global securities registered in the name of a financial institution that holds them as depositary on behalf of other financial institutions that participate in the depositary s book-entry system. These participating institutions, which are referred to as participants, in turn, hold beneficial interests in the securities on behalf of themselves or their customers.

Only the person in whose name a security is registered is recognized as the holder of that security. Global securities will be registered in the name of the depositary or its participants. Consequently, for global securities, we will recognize only the depositary as the holder of the securities, and we will make all payments on the securities to the depositary. The depositary passes along the payments it receives to its participants, which in turn pass the payments along to their customers who are the beneficial owners. The depositary and its participants do so under agreements they have made with one another or with their customers; they are not obligated to do so under the terms of the securities.

As a result, investors in a global security will not own securities directly. Instead, they will own beneficial interests in a global security, through a bank, broker or other financial institution that participates in the depositary s book-entry system or holds an interest through a participant. As long as the securities are issued in global form, investors will be indirect holders, and not legal holders, of the securities.

Street Name Holders

We may terminate a global security in certain situations, as described under Special Situations When a Global Security Will Be Terminated , or issue securities that are not issued in global form. In these cases, investors may choose to hold their securities in their own names or in street name . Securities held by an investor in street name would be registered in the name of a bank, broker or other financial institution that the investor chooses, and the investor would hold only a beneficial interest in those securities through an account he or she maintains at that institution.

For securities held in street name, we or any applicable trustee or depositary will recognize only the intermediary banks, brokers and other financial institutions in whose names the securities are registered as the holders of those securities, and we or any such trustee or depositary will make all payments on those securities to them. These institutions pass along the payments they receive to their customers who are the beneficial owners, but only because they agree to do so in their customer agreements or because they are legally required to do so. Investors who hold securities in street name will be indirect holders, not holders, of those securities.

Legal Holders

Our obligations, as well as the obligations of any applicable trustee or third party employed by us or a trustee, run only to the legal holders of the securities. We do not have obligations to investors who hold beneficial interests in global securities, in street name or by any other indirect means. This will be the case whether an investor chooses to be an indirect holder of a security or has no choice because we are issuing the securities only in global form.

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For example, once we make a payment or give a notice to the legal holder, we have no further responsibility for the payment or notice even if that legal holder is required, under agreements with its participants or customers or by law, to pass the payment or notice along to the indirect holders but does not do so. Similarly, we may want to obtain the approval of the holders to amend an indenture, to relieve us of the consequences of a default or of our obligation to comply with a particular provision of an indenture, or for other purposes. In such an event, we would seek approval only from the legal holders, and not the indirect holders, of the securities. Whether and how the legal holders contact the indirect holders is up to the legal holders.

Special Considerations for Indirect Holders

If you hold securities through a bank, broker or other financial institution, either in book-entry form because the securities are represented by one or more global securities or in street name, you should check with your own institution to find out:

- how it handles securities payments and notices;
- whether it imposes fees or charges;
- how it would handle a request for the holders consent, if ever required;
- whether and how you can instruct it to send you securities registered in your own name so you can be a holder, if that is permitted in the future;
- how it would exercise rights under the securities if there were a default or other event triggering the need for holders to act to protect their interests; and
- if the securities are in book-entry form, how the depositary s rules and procedures will affect these matters.

Global Securities

A global security is a security that represents one or any other number of individual securities held by a depositary. Generally, all securities represented by the same global securities will have the same terms.

Each security issued in book-entry form will be represented by a global security that we issue to, deposit with and register in the name of a financial institution or its nominee that we select. The financial institution that we select for this purpose is called the depositary. Unless we specify otherwise in the applicable prospectus supplement, The Depository Trust Company, New York, New York, known as DTC, will be the depositary for all securities issued in book-entry form.

A global security may not be transferred to or registered in the name of anyone other than the depositary, its nominee or a successor depositary, unless special termination situations arise. We describe those situations below under Special Situations When a Global Security Will Be Terminated . As a result of these arrangements, the depositary, or its

nominee, will be the sole registered owner and legal holder of all securities represented by a global security, and investors will be permitted to own only beneficial interests in a global security. Beneficial interests must be held by means of an account with a broker, bank or other financial institution that in turn has an account with the depositary or with another institution that does. Thus, an investor whose security is represented by a global security will not be a legal holder of the security, but only an indirect holder of a beneficial interest in the global security.

If the prospectus supplement for a particular security indicates that the security will be issued as a global security, then the security will be represented by a global security at all times unless and until the global security is terminated. If termination occurs, we may issue the securities through another book-entry clearing system or decide that the securities may no longer be held through any book-entry clearing system.

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Special Considerations for Global Securities

As an indirect holder, an investor s rights relating to a global security will be governed by the account rules of the investor s financial institution and of the depositary, as well as general laws relating to securities transfers. We do not recognize an indirect holder as a holder of securities and instead deal only with the depositary that holds the global security.

If securities are issued only as global securities, an investor should be aware of the following:

- an investor cannot cause the securities to be registered in his or her name, and cannot obtain non-global certificates for his or her interest in the securities, except in the special situations described below;
- an investor will be an indirect holder and must look to his or her own bank or broker for payments on the securities and protection of his or her legal rights relating to the securities, as described above;
- an investor may not be able to sell interests in the securities to some insurance companies and to other institutions that are required by law to own their securities in non-book-entry form;
- an investor may not be able to pledge his or her interest in the global security in circumstances where certificates representing the securities must be delivered to the lender or other beneficiary of the pledge in order for the pledge to be effective;
- the depositary s policies, which may change from time to time, will govern payments, transfers, exchanges and other matters relating to an investor s interest in the global security;
- we and any applicable trustee have no responsibility for any aspect of the depositary s actions or for its records of ownership interests in the global security, nor will we or any applicable trustee supervise the depositary in any way;
- the depositary may, and we understand that DTC will, require that those who purchase and sell interests in the global security within its book-entry system use immediately available funds, and your broker or bank may require you to do the same; and
- financial institutions that participate in the depositary s book-entry system, and through which an investor holds its interest in the global security, may also have their own policies affecting payments, notices and other matters relating to the securities.

There may be more than one financial intermediary in the chain of ownership for an investor. We do not monitor and are not responsible for the actions of any of those intermediaries.

Special Situations When a Global Security Will Be Terminated

In a few special situations described below, a global security will terminate and interests in it will be exchanged for physical certificates representing those interests. After that exchange, the choice of whether to hold securities directly or in street name will be up to the investor. Investors must consult their own banks or brokers to find out how to have their interests in securities transferred to their own names, so that they will be direct holders. The rights of holders and street name investors are described above.

A global security will terminate when the following special situations occur:

- if the depositary notifies us that it is unwilling, unable or no longer qualified to continue as depositary for that global security and we do not appoint another institution to act as depositary within 90 days;

- if we notify any applicable trustee that we wish to terminate that global security; or

- if an event of default has occurred with regard to securities represented by that global security and has not been cured or waived.

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The applicable prospectus supplement may also list additional situations for terminating a global security that would apply only to the particular series of securities covered by the prospectus supplement. When a global security terminates, the depositary, and neither we nor any applicable trustee, is responsible for deciding the names of the institutions that will be the initial direct holders.

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PLAN OF DISTRIBUTION

We may sell the securities from time to time pursuant to underwritten public offerings, at the market offerings, negotiated transactions, block trades or a combination of these methods. We may sell the securities to or through underwriters or dealers, through agents, or directly to one or more purchasers. We may distribute securities from time to time in one or more transactions:

- at a fixed price or prices, which may be changed;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices; or
- at negotiated prices.

A prospectus supplement or supplements (and any related free writing prospectus that we may have authorized for use in connection with a specific offering) will describe the terms of the offering of the securities, including, to the extent applicable:

- the name or names of the underwriters, if any;
- the purchase price of the securities or other consideration therefor, and the proceeds, if any, we will receive from the sale;
- any over-allotment options under which underwriters may purchase additional securities from us;
- any agency fees or underwriting discounts and other items constituting agents or underwriters compensation;
- any public offering price;
- any discounts or concessions allowed or re-allowed or paid to dealers; and
- any securities exchange or market on which the securities may be listed.

Only underwriters named in the prospectus supplement will be underwriters of the securities offered by the prospectus supplement.

If underwriters are used in the sale, they will acquire the securities for their own account and may resell the securities from time to time in one or more transactions at a fixed public offering price or at varying prices determined at the time of sale. The obligations of the underwriters to purchase the securities will be subject to the conditions set forth in the applicable underwriting agreement. We may offer the securities to the public through underwriting syndicates represented by managing underwriters or by underwriters without a syndicate. Subject to certain conditions, the underwriters will be obligated to purchase all of the securities offered by the prospectus supplement, other than securities covered by any over-allotment option. Any public offering price and any discounts or concessions allowed or re-allowed or paid to dealers may change from time to time. We may use underwriters with whom we have a material relationship. We will describe in the prospectus supplement, naming the underwriter, the nature of any such relationship.

We may sell securities directly or through agents we designate from time to time. We will name any agent involved in the offering and sale of securities and we will describe any commissions we will pay the agent in the prospectus supplement. Unless the prospectus supplement states otherwise, our agent will act on a best-efforts basis for the period of its appointment.

We may authorize agents or underwriters to solicit offers by certain types of institutional investors to purchase securities from us at the public offering price set forth in the prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on a specified date in the future. We will describe the conditions to these contracts and the commissions we must pay for solicitation of these contracts in the prospectus supplement.

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We may provide agents and underwriters with indemnification against civil liabilities, including liabilities under the Securities Act, or contribution with respect to payments that the agents or underwriters may make with respect to these liabilities. Agents and underwriters may engage in transactions with, or perform services for, us in the ordinary course of business.

All securities we may offer, other than Common Stock, will be new issues of securities with no established trading market. Any underwriters may make a market in these securities, but will not be obligated to do so and may discontinue any market making at any time without notice. We cannot guarantee the liquidity of the trading markets for any securities.

Any underwriter may engage in over-allotment, stabilizing transactions, short-covering transactions and penalty bids in accordance with Regulation M under the Securities Exchange Act of 1934, as amended, or the Exchange Act. Over-allotment involves sales in excess of the offering size, which create a short position. Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum price. Syndicate-covering or other short-covering transactions involve purchases of the securities, either through exercise of the over-allotment option or in the open market after the distribution is completed, to cover short positions. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the securities originally sold by the dealer are purchased in a stabilizing or covering transaction to cover short positions. Those activities may cause the price of the securities to be higher than it would otherwise be. If commenced, the underwriters may discontinue any of the activities at any time.

Any underwriters that are qualified market makers on the NASDAQ Capital Market may engage in passive market making transactions in the common stock on the NASDAQ Capital Market in accordance with Regulation M under the Exchange Act, during the business day prior to the pricing of the offering, before the commencement of offers or sales of the common stock. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker s bid, however, the passive market maker s bid must then be lowered when certain purchase limits are exceeded. Passive market making may stabilize the market price of the securities at a level above that which might otherwise prevail in the open market and, if commenced, may be discontinued at any time.

In compliance with guidelines of the Financial Industry Regulatory Authority, or FINRA, the maximum consideration or discount to be received by any FINRA member or independent broker dealer may not exceed 8% of the aggregate amount of the securities offered pursuant to this prospectus and the applicable prospectus supplement.

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LEGAL MATTERS

Unless otherwise indicated in the applicable prospectus supplement, the validity of the securities offered by this prospectus, and any supplement thereto, will be passed upon for us by Paul Hastings LLP, Palo Alto, California.

EXPERTS

The consolidated financial statements of Transgenomic, Inc. included in Transgenomic, Inc. s Annual Report (Form 10-K) as of December 31, 2013 and for the year then ended, have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report incorporated herein by reference. Such financial statements are incorporated herein in reliance upon the report of Ernst & Young LLP pertaining to such financial statements given on the authority of such firm as experts in accounting and auditing.

The audited consolidated financial statements of Transgenomic, Inc. and subsidiary as of December 31, 2012 and December 31, 2011 included in our Annual Report on Form 10-K for the year ended December 31, 2013 incorporated by reference in this prospectus have been audited by McGladrey LLP, independent registered public accounting firm, as stated in their report dated March 14, 2013, 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 MORE INFORMATION

We are a reporting company and file annual, quarterly and current reports, proxy statements and other information with the SEC. We have filed with the SEC a registration statement on Form S-3 under the Securities Act with respect to the securities being offered under this prospectus. This prospectus does not contain all of the information set forth in the registration statement and the exhibits to the registration statement. For further information with respect to us and the securities being offered under this prospectus, we refer you to the registration statement and the exhibits and schedules filed as a part of the registration statement. You may read and copy the registration statement, as well as our reports, proxy statements and other information, at the SEC s Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the Public Reference Room. The SEC maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC, including Transgenomic, Inc. The SEC s Internet site can be found at http://www.sec.gov.

IMPORTANT INFORMATION INCORPORATED BY REFERENCE

The SEC allows us to incorporate by reference information into this prospectus, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The documents incorporated by reference into this prospectus contain important information that you should read about us.

The following documents are incorporated by reference into this prospectus:

(a) The Registrant s Annual Report on Form 10-K for the fiscal year ended December 31, 2013, filed with the SEC on March 27, 2014, and Amendment No. 1 to the Annual Report on Form 10-K/A for the fiscal year ended December 31, 2013, filed with the SEC on September 5, 2014;

(b) The Registrant s Definitive Proxy Statement on Schedule 14A filed with the SEC on April 24, 2014;

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(c) The Registrant s Quarterly Report on Form 10-Q for the quarter ended March 31, 2014, filed with the SEC on May 15, 2014;

(d) The Registrant s Quarterly Report on Form 10-Q for the quarter ended June 30, 2014, filed with the SEC on August 8, 2014;

(e) The Registrant s Quarterly Report on Form 10-Q for the quarter ended September 30, 2014, filed with the SEC on November 12, 2014;

(f) The Registrant s Current Reports on Form 8-K filed with the SEC on (i) January 14, 2014, (ii) January 16, 2014, (iii) January 28, 2014, (iv) March 6, 2014, (v) March 19, 2014, (vi) May 6, 2014, (vii) May 14, 2014, (viii) May 15, 2014, (ix) July 2, 2014, as accepted by the SEC at 4:25 p.m. Eastern time, (x) October 22, 2014, (xi) November 5, 2014, (xii) December 23, 2014; (xiii) January 7, 2015; (xiv) January 14, 2015 (but solely as to the matters disclosed under Item 8.01 thereunder and Exhibit 99.2 thereto), and (xv) January 20, 2015; and

(g) The description of the Registrant s common stock set forth in the Registrant s Registration Statement on Form 8-A (File No. 001-36439), filed with the SEC on May 5, 2014, including any amendments or reports filed for the purpose of updating such description.

We also incorporate by reference any future filings (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items unless such Form 8-K expressly provides to the contrary) made with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, including those made after the date of the initial filing of the registration statement of which this prospectus is a part and prior to effectiveness of such registration statement, until we file a post-effective amendment that indicates the termination of the offering of the securities made by this prospectus and will become a part of this prospectus from the respective dates that such documents are filed with the SEC. Any statement contained herein or in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes hereof or of the related prospectus supplement to the extent that a statement contained herein or in any other subsequently filed document which is also incorporated or deemed to be incorporated herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

Documents incorporated by reference are available from us, without charge. You may obtain documents incorporated by reference in this prospectus by requesting them in writing or by telephone at the following address:

Transgenomic, Inc.

Attn: Investor Relations

12325 Emmet Street

Omaha, NE 68164

Phone: (402) 452-5400

Fax: (402) 452-5461

E-mail: investorrelations@transgenomic.com

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Shares of Common Stock

Warrants to Purchase Shares of Common Stock

PROSPECTUS SUPPLEMENT

Aegis Capital Corp.

, 2017