PRESSURE BIOSCIENCES INC
Form S-1/A
April 11, 2017

As filed with the Securities and Exchange Commission on April 11 , 2017

Registration No. 333-215277

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

AMENDMENT NO. 1

TO

FORM S-1

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

PRESSURE BIOSCIENCES, INC.

(Exact name of registrant as specified in its charter)

Massachusetts	**3826**	**04-2652826**

(State or Other Jurisdiction of Incorporation or Organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

14 Norfolk Avenue

South Easton, Massachusetts 02375
(508) 230-1828
(Address, including zip code, and telephone number including area code, of Registrant's principal executive offices)

Richard T. Schumacher

President and Chief Executive Officer

Pressure BioSciences, Inc.

14 Norfolk Avenue

South Easton, Massachusetts 02375

(508) 230-1828

(Name, address, including zip code, and telephone number including area code, of agent for service)

With copies to:

Joseph M. Lucosky, Esq.	**Mitchell Nussbaum, Esq.**
Steven Lipstein, Esq.	**Giovanni Caruso, Esq.**
Lawrence Metelitsa, Esq.	**Lili Taheri, Esq.**
John O'Leary, Esq.	**Loeb & Loeb LLP**
Lucosky Brookman LLP	**345 Park Avenue**
101 Wood Avenue South, 5th Floor	**New York, NY 10154**
Woodbridge, NJ 08830	**Tel. No.: (212) 407-4000**
Tel. No.: (732) 395-4400	**Fax No.: (212) 407-4990**

Fax No.: (732) 395-4401

Approximate date of commencement of proposed sale to the public: As soon as practicable after this Registration Statement is declared effective.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. [X]

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

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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See definitions of “large accelerated filer,” “accelerated filer” and “smaller reporting company” in Rule 12b-2 of the Exchange Act.

Large Accelerated Filer [ ]	Accelerated Filer [ ]	Non-Accelerated Filer [ ]	Smaller Reporting Company [X]

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	**Proposed Maximum Aggregate Offering Price [1]**	**Amount of Registration Fee [1]**
Common Stock, par value $0.001 per share [2] [3]	$ 12,000,000	$ 1,390.80
Warrants to Purchase Common Stock [4]	—	—
Representatives' Warrant to Purchase Common Stock[4]	$ N/A	$ —
Shares of Common Stock issuable upon exercise of the Warrants [2] [3] [5]	$ 7,500,000	$ 869.25
Shares of Common Stock issuable upon exercise of Representatives' Warrant[2] [6]	$ 750,000	$ 86.93
Total	$ 20,250,000	$ 2,346.98 [7]

(1) Estimated solely for the purpose of calculating the amount of the registration fee in accordance with Rule 457(o) under the Securities Act of 1933, as amended (the "Securities Act").

(2) Pursuant to Rule 416, the securities being registered hereunder include such indeterminate number of additional securities as may be issued after the date hereof as a result of stock splits, stock dividends or similar transactions.

(3) Includes shares of common stock which may be issued upon exercise of a 45-day option granted to the underwriters to cover over-allotments, if any.

(4) A warrant to purchase one share of common stock will be issued for every two shares offered. No further consideration will be paid for the warrant. The maximum number of the Warrants and Representative's warrants and the shares of the Registrant's common stock underlying the Warrants and Representative's warrants are being simultaneously registered hereunder. Consistent with the response to Question 240.06 of the Securities Act Rules Compliance and Disclosure Interpretations, the registration fee with respect to the Warrants and Representative's warrants has been allocated to the shares of the Registrant's common stock underlying the Warrants and Representative's warrants and those shares are included in the registration fee.

(5) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(g) under the Securities Act. The warrants are exercisable at a per share price of 125% of the common stock public offering price.

(6) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(g) under the Securities Act. The warrants are exercisable at a per share exercise price equal to 125% of the public offering price excluding the over-allotment option. The proposed maximum aggregate offering price of the Representative's warrants is $750,000 which is equal to 125% of $600,000 (5% of $12,000,000).

(7) The registrant previously paid $3,357.49.

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act or until the registration statement shall become effective on such date as the Commission, acting pursuant to said section 8(a), may determine.

The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting offers to buy these securities in any jurisdiction where the offer or sale is not permitted.

PRELIMINARY PROSPECTUS SUBJECT TO COMPLETION DATED APRIL 11, 2017

Shares of Common Stock

Warrants to Purchase up to Shares of Common Stock

Pressure BioSciences, Inc.

We are offering an aggregate of shares of our common stock, $0.01 par value per share, and warrants to purchase shares of our common stock at a public offering price of $ per share and $ per warrant. The warrants have an exercise price of $ per share and expire five years from the date of issuance. A warrant to purchase one share of common stock will accompany every two shares of common stock purchased. The shares and warrants will trade separately.

Our common stock is presently quoted on the OTCQB under the symbol “PBIO”. We intend to apply to have our common stock and warrants listed on The NASDAQ Capital Market under the symbols “PBIO” and “PBIOW,” respectively. No assurance can be given that our application will be approved. On April 7 , 2017 the last reported sale price for our common stock on the OTCQB was $0.31 per share. There is no established public trading market for the warrants. No assurance can be given that a trading market will develop for the warrants.

Investing in our securities involves a high degree of risk. See “Risk Factors” beginning on page 16 of this prospectus for a discussion of information that should be considered in connection with an investment in our securities.

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.

	Per Share	Per Warrant	Total
Public offering price	$	$	$
Underwriting discounts and commissions [(1)]	$	$	$
Proceeds to us, before expenses	$	$	$

(1) We refer you to "Underwriting" beginning on page 74 of this prospectus for additional information regarding total underwriting compensation.

We have granted a 45-day option to the representative of the underwriters to purchase up to additional shares of our common stock at a public offering price of $ per share and/or warrants to purchase shares of our common stock at a public offering price of $ per warrant, solely to cover over-allotments, if any.

The underwriters expect to deliver our shares and warrants to purchasers in the offering on or about , 2017.

Joseph Gunnar & Co.

The date of this prospectus is , 2017.

TABLE OF CONTENTS

You should rely only on information contained in this prospectus. We have not, and the underwriters have not, authorized anyone to provide you with additional information or information different from that contained in this prospectus. We are not making an offer of these securities in any state or other jurisdiction where the offer is not permitted. The information in this prospectus may only be accurate as of the date on the front of this prospectus regardless of time of delivery of this prospectus or any sale of our securities.

No person is authorized in connection with this prospectus to give any information or to make any representations about us, the common stock hereby or any matter discussed in this prospectus, other than the information and representations contained in this prospectus. If any other information or representation is given or made, such information or representation may not be relied upon as having been authorized by us. This prospectus does not constitute an offer to sell, or a solicitation of an offer to buy our common stock in any circumstance under which the offer or solicitation is unlawful. Neither the delivery of this prospectus nor any distribution of our common stock in accordance with this prospectus shall, under any circumstances, imply that there has been no change in our affairs since the date of this prospectus.

Neither we nor any of the underwriters have done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than the United States. You are required to inform yourself about, and to observe any restrictions relating to, this offering and the distribution of this prospectus.

We have registered certain of our trademarks with the United States Patent and Trademark Office, including Barocycler®® and PULSE®®· XSTREAMPCT™ is registered in Europe and published in the USA. We also use certain trademarks, trade names, and logos that have not been registered including ProteoSolve™, ProteoSolve$_{LRS}$™, the Power of PCT™, the PCT Shredder™, HUB440™, HUB880™, MicroPestle™, PCT-HD™, Barozyme™, BaroFlex™ Strip, and Discovery Starts with Sample Preparation™.

PROSPECTUS SUMMARY

This summary highlights selected information appearing elsewhere in this prospectus. While this summary highlights what we consider to be important information about us, you should carefully read this entire prospectus before investing in our common stock and warrants, especially the risks and other information we discuss under the headings "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operation" and our consolidated financial statements and related notes beginning on page F-1. Our fiscal year end is December 31 and our fiscal years ended December 31, 2015 and 2016 are sometimes referred to herein as fiscal years 2015 and 2016, respectively. Some of the statements made in this prospectus discuss future events and developments, including our future strategy and our ability to generate revenue, income and cash flow. These forward-looking statements involve risks and uncertainties which could cause actual results to differ materially from those contemplated in these forward-looking statements. See "Cautionary Note Regarding Forward-Looking Statements". Unless otherwise indicated or the context requires otherwise, the words "we," "us," "our", the "Company" or "our Company" and "Pressure Biosciences" refer to Pressure Sciences, Inc., a Massachusetts corporation.

This prospectus assumes the over-allotment option of the underwriters has not been exercised, unless otherwise indicated.

Overview

We are focused on solving the challenging problems inherent in biological sample preparation, a crucial laboratory step performed by scientists worldwide working in biological life sciences research. Sample preparation is a term that refers to a wide range of activities that precede most forms of scientific analysis. Sample preparation is often complex, time-consuming and, in our belief, one of the most error-prone steps of scientific research. It is a widely-used laboratory undertaking – the requirements of which drive what we believe is a large and growing worldwide market. We have developed and patented a novel, enabling technology platform that can control the sample preparation process. It is based on harnessing the unique properties of high hydrostatic pressure. This process, which we refer to as Pressure Cycling Technology, or PCT, uses alternating cycles of hydrostatic pressure between ambient and ultra-high levels i.e., 20,000 psi or greater to safely, conveniently and reproducibly control the actions of molecules in biological samples, such as cells and tissues from human, animal, plant and microbial sources.

PCT is an enabling platform technology based on a physical process that had not previously been used to control bio-molecular interactions. PCT uses internally developed instrumentation that is capable of cycling pressure between ambient and ultra-high levels at controlled temperatures and specific time intervals, to rapidly and repeatedly control the interactions of bio-molecules, such as proteins, DNA, RNA, lipids and small molecules. Our laboratory instrument family, the Barocycler®, and our internally developed consumables product line, which include our unique MicroTubes, MicroCaps, MicroPestles, BaroFlex and PULSE® (Pressure Used to Lyse Samples for Extraction) Tubes, and application specific kits (containing consumable products and reagents), together make up our PCT

Sample Preparation System (“PCT SPS”).

In 2015, together with an investment bank, we formed a subsidiary called Pressure BioSciences Europe (“PBI Europe”) in Poland. We have 49% ownership interest with the investment bank retaining 51%. Throughout 2016, PBI Europe did not have any operating activities in 2016 and we cannot reasonably predict when operations will commence. Because we don’t have control of the subsidiary, we did not consolidate them in our financial statements.

Patents

PBI has 14 United States granted patents and one foreign granted patent (Japan: 5587770, EXTRACTION AND PARTITIONING OF MOLECULES) covering multiple applications of PCT in the life sciences field. PBI also has 19 pending patents in the USA, Canada, Europe, Australia, China, Japan, and Taiwan. PCT employs a unique approach that we believe has the potential for broad use in a number of established and emerging life sciences areas, which include, but are not limited to:

- biological sample preparation – including but not limited to sample extraction, homogenization, and digestion - in such study areas as genomic, proteomic, lipidomic, metabolomic and small molecule;
- pathogen inactivation;
- protein purification;
- control of chemical reactions, particularly enzymatic; and
- immunodiagnostics.

We are also the exclusive distributor, throughout the Americas, for Constant Systems, Ltd,'s ("CS") cell disruption equipment, parts, and consumables. CS, a British company located several hours northwest of London, England, has been providing niche biomedical equipment, related consumable products, and services to a global client base since 1989. CS designs, develops, and manufactures high pressure cell disruption equipment required by life sciences laboratories worldwide, particularly disruption systems for the extraction of proteins. The CS equipment provides a constant and controlled cell disruptive environment, giving the user constant and reproducible results whatever the application. CS has over 900 units installed in over 40 countries worldwide. The CS cell disruption equipment extracts cellular components, such as protein from yeast, bacteria, mammalian cells, and other sample types.

The CS pressure-based cell disruption equipment and our PCT-based instrumentation complement each other in several important ways. While both the CS and our technologies are based on high pressure, each product line has fundamental scientific capabilities that the other does not offer. Our PCT Platform uses certain patented pressure mechanisms to achieve small-scale, molecular level effects. CS's technology uses different, proprietary pressure mechanisms for larger-scale, non-molecular level processing. In a number of routine laboratory applications, such as protein extraction, both effects can be critical to success. Therefore, for protein extraction and a number of other important scientific applications, we believe laboratories will benefit by using the CS and our products, either separately or together.

Primary Fields of Use and Applications for PCT

Sample preparation is widely regarded as a significant impediment to research and discovery and sample extraction is generally regarded as one of the key parts of sample preparation. The process of preparing samples for genomic, proteomic, lipidomic, and small molecule studies includes a crucial step called sample extraction or sample disruption. This is the process of extracting biomolecules such as nucleic acid i.e., DNA and/or RNA, as well as proteins, lipids, or small molecules from the plant or animal cells and tissues that are being studied. Our current commercialization efforts are based upon our belief that pressure cycling technology provides a superior solution for sample extraction when compared to other available technologies or procedures and thus might significantly improve the quality of sample preparation, and thus the quality of the test result.

Within the broad field of biological sample preparation, in particular sample extraction, we focus the majority of our PCT and constant pressure (“CP”) product development efforts in three specific areas: biomarker discovery (primarily through mass spectrometric analysis), forensics and histology. We believe that our existing PCT and CP-based instrumentation and related consumable products fill an important and growing need in the sample preparation market for the safe, rapid, versatile, reproducible and quality extraction of nucleic acids, proteins, lipids, and small molecules from a wide variety of plant, animal, and microbiological cells and tissues.

Biomarker Discovery - Mass Spectrometry

A biomarker is any substance (e.g., protein, DNA) that can be used as an indicator of the presence or absence of a particular disease-state or condition, and/or to measure the progression and effects of therapy. Biomarkers can help in the diagnosis, prognosis, therapy, prevention, surveillance, control, and cure of diseases and medical conditions.

A mass spectrometer is a laboratory instrument used in the analysis of biological samples, often focused on proteins, in life sciences research. It is frequently used to help discover biomarkers. According to a recently published market report by Transparency Market Research, the global spectrometry market was worth $10.2 billion in 2011 and is expected to reach $15.2 billion in 2017, growing at a compound annual growth rate of 6.9% from 2011 to 2017. In the overall global market, the North American market is expected to maintain its lead position in terms of revenue until 2017 and is expected to have approximately 36.2% of the market revenue share in 2017, followed next by Europe. We believe PCT and CP-based products offer significant advantages in speed and quality compared with current techniques used in the preparation of samples for mass spectrometry analysis.

Forensics

The detection of DNA has become a part of the analysis of forensic samples by laboratories and criminal justice agencies worldwide in their efforts to identify the perpetrators of violent crimes and missing persons. Scientists from the University of North Texas (UNT) and Florida International University (FIU) have published a paper regarding DNA yield from forensic samples (e.g., bone and hair) when using the PCT platform in the sample preparation process. A copy of the paper may be accessed through our website .

Pressure cycling technology (PCT) reduces effects of inhibitors of the PCR

Pamela L. Marshall & Jonathan L. King & Nathan P. Lawrence & Alexander Lazarev & Vera S. Gross & Bruce Budowle

We also believe that there are many completed rape kits that remain untested for reasons such as cost, time and quality of results. We further believe that the ability to differentially extract DNA from sperm and not epithelial cells could reduce the cost of such testing, while increasing the quality, safety and speed of the testing process.

We believe that PCT may be capable of differentially extracting DNA from sperm cells and female epithelial cells captured in swabs collected from rape victims and subsequently stored in rape kits. Data from the laboratory of Dr. Bruce McCord (FIU) was published in a paper that may be accessed through our website .

6

Histology

The most commonly used technique worldwide for the preservation of cancer and other tissues for subsequent pathology evaluation is formalin-fixation followed by paraffin-embedding, or *FFPE*. We believe that the quality and analysis of FFPE tissues is highly problematic, and that PCT offers significant advantages over current processing methods, including standardization, speed, biomolecule recovery, and safety.

Company Products

We believe our PCT and CP products allow researchers to improve scientific research studies in the life sciences field. Our products are developed with the expectation of meeting or exceeding the needs of research scientists while enhancing the safety, speed and quality that is available to them with existing sample preparation methods.

Barocycler® Instrumentation

Our Barocycler® product line consists of laboratory instrumentation that subjects a sample to cycles of pressure from ambient to ultra-high levels (20,000 psi or greater) and then back to ambient, in a precisely controlled manner.

Our instruments (the Barocycler® 2320EXTREME (the "*2320EXT*"), the Barozyme-HT48, the Barocycler® NEP3229, the HUB440 and the HUB880) use cycles of high, hydrostatic pressure to quickly and efficiently break up the cellular structures of a specimen to release proteins, nucleic acids, lipids and small molecules from the specimen into our consumable processing tubes, referred to as our PULSE® Tubes and MicroTubes. Our instruments have temperature control options (on-board heating or chilling and heating via external circulating water-bath), automatic fill and dispensing valves, and an integrated micro-processor keypad or a laptop computer. The microprocessor or laptop computer are capable of saving specific PCT protocols, so the researcher can achieve maximum reproducibility for the preparation of nucleic acids, proteins, lipids, or small molecules from various biological samples. Our Barocycler® instruments and our consumable products make up our PCT Sample Preparation System.

Barocycler® 2320EXT - The Barocycler® 2320EXT weighs approximately 80lbs, has a maximum pressure of 45,000 psi, and can process either up to 16 MicroTubes simultaneously or 1 PULSE® Tube. The working temperature range is 4 – 95ºC and is controlled via an on-board electric heating jacket or external circulating water bath. All tests are entered and recorded on a touch screen interface. Information from each test runs (pressure profile, cycle number, and temperature) is recorded and can be stored on the instrument, on a USB drive, or networked into the user's lab. Pressure profiles can be manipulated in a number of ways, including static high pressure holds and pressure ramp

programs. The Barocycler® 2320EXT is pneumatic, and requires an input air source of 100psi to reach and cycle at high pressure.

The Barocycler® 2320EXT was developed to support the PCT-HD/PCT-SWATH application. PCT-HD enables faster, less cumbersome and higher quality processing of biopsy tissues. With homogenization, extraction, and digestion of proteins occurring in a single PCT MicroTube under high pressure. This protocol can yield analytical results in under 4 hours from the start of processing tissues. PCT-HD was developed by our scientists and engineers in collaboration with Professor Ruedi Aebersold and Dr. Tiannan Guo of the Institute of Molecular Systems Biology, ETH Zurich, and the University of Zurich, both in Zurich, Switzerland. Drs. Aebersold and Guo combined PCT-HD with SCIEX's SWATH-Mass Spectrometry – calling the resulting method "*PCT-SWATH*".

Barocycler® NEP3229 – The Barocycler® NEP3229 contains two units – a user interface and a power source – comprised primarily of a 1.5 horsepower motor and pump assembly (hydraulic). Combined, the two components of the NEP3229 weigh approximately 350 pounds. The Barocycler® NEP3229 is capable of processing up to three samples simultaneously using our specially designed, single-use PULSE® Tubes and up to 48 samples simultaneously using our specially-designed MicroTubes.

Barozyme HT48 - The Barozyme HT48 is a high throughput, bench-top instrument designed for accelerated enzymatic digestion of proteins at high pressure. A typical protein digestion time using the enzyme trypsin (a common yet important laboratory procedure) can be reduced from often requiring an overnight incubation to get to completion to under one hour when the digestion procedure is carried out under PCT. The Barozyme HT48 uses an air-pressure-to-liquid-pressure proprietary intensifier system, with a pressure amplification ratio of 160:1, to reach an output pressure of 20,000 psi. The Barozyme HT48 is capable of processing up to 48 samples at a time in six single-use BaroFlex 8-well Strips in the Barozyme Sample Carrier.

Barocycler® HUB440 –We believe the Barocycler® HUB440 is the first portable, ready to use, “plug-and-play” high pressure generator for the laboratory bench. The Barocycler® HUB440 is capable of creating and controlling hydrostatic pressure from 500 psi to 58,000 psi. It is computer controlled and runs on software that was specially-written by us in LabVIEW (software from National Instruments Corporation). We own the rights and have a license to use the specialty LabVIEW software. We believe that over the coming years, the Barocycler® HUB440 may become the main instrument in our pressure-based instrument line.

Barocycler® HUB880 - The Barocycler® HUB880 is one of our new instruments; it is expected to be available for sale during the first six months of 2017. It is a compact, portable, bench-top, ultra-high pressure generator that uses an air pressure-to-liquid pressure intensifier allowing the user to generate fluid pressure as high as 90,000 psi with input air pressure of just 126 psi. The HUB880 can be operated through a simple front panel or controlled using an optional external Data Acquisition and Control Module for dynamic pressure control. We believe that the HUB880 will be well accepted by scientists that need to achieve super high pressure, such as those working in the food safety and vaccine industries.

The Shredder SG3 –The Shredder SG3 is a low shear mechanical homogenization system for use with tough, fibrous and other difficult-to-disrupt tissues and organisms. The Shredder SG3 System uses a variety of Shredder PULSE® Tubes to directly and rapidly grind a biological sample which, when combined with selected buffers, can provide effective extraction of proteins, DNA, RNA, lipids and small molecules from tissues and organisms. The Shredder SG3 is also used to isolate intact and functional mitochondria from tissues. The Shredder SG3 features a three position force setting lever, which enables the operator to select and apply reproducible force to the sample during the shredding process and eliminates the need for the operator to exert force for long periods when processing one or more samples.

Barocycler® Consumable Products

PCT MicroTubes – PCT MicroTubes are made from a unique fluoropolymer, fluorinated ethylene propylene (FEP). FEP is highly inert and retains its integrity within an extremely wide temperature range (-200ºC to +100ºC). MicroTubes hold a maximum total volume of 150 microliters. PCT MicroTubes must be used with either PCT-MicroCaps or PCT-MicroPestles.

PCT-MicroCaps – PCT MicroCaps are made from polytetraflouroethylene (PTFE). The PCT MicroCaps are available in three sizes to accommodate total sample volume: 50, 100 and 150uL. 50uL MicroCaps are used with samples ≤50uL, 100uL MicroCaps are used with samples between 50-100uL, and 150uL MicroCaps are used with samples between 100-150uL.

PCT-Micro-Pestle ("*µPestles*") - PCT µPestles are made from Polytetrafluoroethylene (PTFE), a synthetic fluoropolymer of tetrafluoroethylene, also known as Teflon (by DuPont Co). PTFE is practically inert; the only chemicals known to affect it are certain alkali metals and most highly-reactive fluorinating agents. PCT µPestles, in conjunction with PCT MicroTubes, are designed to enhance the extraction of protein, DNA, RNA and small molecules from minute amounts (0.5 – 3.0 mg) of solid tissue in extraction reagent volumes as low as 20-30 µL. PCT MicroTubes and PCT µPestles use Pressure Cycling Technology (PCT) to effectively disrupt soft tissues and lyse their cells. As a result, the tissue sample trapped between the MicroTube end and the µPestles tip is crushed on every pressure cycle. This mechanical action, combined with the extraction ability of the buffer under high pressure, results in highly effective tissue homogenization and extraction.

PCT µPestles and PCT MicroTubes, together with a PBI Barocycler®, comprise the PCT Micro-Pestle System, which provides a fast, safe, and efficient means of extraction from extremely small amounts of solid samples such as soft animal tissues or biopsies. The PCT µPestle System can be used in any PBI Barocycler®.

BaroFlex 8-well Processing Strips - BaroFlex 8-well Strips are used in the Barozyme HT48 (for pressure-enhanced enzymatic digestion at 20,000 psi). BaroFlex 8-well Strips are made of special high density polyethylene (HDPE) and hold up to 140µl when capped with the BaroFlex Cap Strips or Mats. BaroFlex 8-Cap Strips and BaroFlex 24-Cap Mats are made of silicone. These single-use caps are designed to seal BaroFlex 8-well Strips tightly and to prevent fluid exchange between the sample and the Barozyme chamber fluid during pressure cycling. The silicone caps are available as strips of 8, or mats of 24 caps.

We believe our development of these various consumable products has helped, and will continue to help, drive the adoption of PCT within the life sciences market.

Customers

Our customers include researchers at academic laboratories, government agencies, biotechnology companies, pharmaceutical companies and other life science institutions in the United States, Europe, and in Asia. Our goal is to continue aggressive market penetration in these target groups. We also believe that there is a significant opportunity to sell and/or lease additional Barocycler® instrumentation to additional laboratories at current customer institutions.

If we are successful in commercializing PCT in applications beyond our current focus area of genomic, proteomic, lipidomic, and small molecule sample preparation, and if we are successful in our attempts to attract additional capital, our potential customer base could expand to include hospitals, reference laboratories, pharmaceutical manufacturing plants and other sites involved in each specific application. If we are successful in forensics, our potential customers could be forensic laboratories, military and other government agencies. If we are successful in histology (extraction of biomolecules from FFPE tissues), our potential customers could be pharmaceutical companies, hospitals, and laboratories focused on drug discovery or correlation of disease states.

Growth Strategy

Our growth strategy includes:

Expanding our United States salesforce.

Aggressively promoting the PCT-HD System, which includes the Barocycler® 2320EXT, MicroTube System, and MicroPestles.

Expanding our number of International Distributers.

Actively promoting our other Barocycler® products, accessories, and consumables, including but not limited to, the Barozyme, the HUB440, and HUB880.

Development of new applications for the Barocycler® 2320EXT, such as, but not limited to, clinical applications.

Development of new high-pressure applications for industries outside of biotechnology, such as, but not limited to, food science.

Development of new high-pressure instruments, devices, and consumables to meet the growing demand for pressure-based technology.

Competitive Advantages/Operational Strengths

Our platforms are based on our patented and proprietary Pressure Cycling Technology (PCT). We believe the PCT platform provides distinct and important competitive advantages over other sample preparation methods, as it:

is proprietary to PBI

has been shown to extract more classes of proteins from tissues and cells than many other current sample, preparation methods. We believe this claim is supported by several publications and presentations available on our website most notably by Dr. R. Aebersold, Professor at the Institute of Molecular Systems Biology, ETH-Zurich. Dr. Aebersold's publications include:

can accelerate enzymatic digestion of proteins for analysis by mass spectrometry from overnight to under an hour. We believe this claim is supported by several experiments. For example, Dr. A. Ivanov published a paper available on our website.

enables efficient sample prep workflows for processing minute amounts of tissue with excellent yields and reproducibility for researchers in the growing precision and translational medicine fields.

Our Risks and Challenges

An investment in our securities involves a high degree of risk including risks related to the following:

We have received an opinion from our independent registered public accounting firm expressing substantial doubt regarding our ability to continue as a going concern.

We have a history of operating losses, anticipate future losses and may never be profitable.

We may be unable to obtain market acceptance of our pressure cycling technology products and services.

The sales cycle of our pressure cycling technology products is lengthy. We have incurred and may continue to incur significant expenses and we may not generate any significant revenue related to those products.

Our reliance on a single third party for all of our manufacturing, and certain of our engineering, and other related services could harm our business.

Our instrumentation operates at high pressures and may therefore become subject to certain regulations in the European Community. Regulation of high pressure equipment may limit or hinder our development and sale of future instrumentation.

We expect that we will be subject to regulation in the United States, such as the Food and Drug Administration (the "FDA"), and overseas, if and when we begin to invest more resources in the development and commercialization of PCT in applications outside of sample preparation for the research field.

Recent Developments

We reported a number of accomplishments in 2016:

On January 12, 2016 SCIEX, a global leader in life science analytical technologies (Framingham, MA) and a wholly-owned subsidiary of Danaher Corporation (NYSE: DHR), announced an exclusive co-marketing agreement with us to improve protein quantification in complex samples.

On February 3, 2016 SCIEX and Children's Medical Research Institute (Sydney, Australia) announced they had joined forces to advance the promise of precision medicine. The partners stated they would benefit from SCIEX's exclusive collaborators, including Pressure BioSciences, and our PCT platform for increased protein quantitation and reproducibility.

On March 31, 2016, in connection with the seventh and final closing (the *"Final Closing*") of a private placement debt financing pursuant to the Subscription Agreements, dated as of January, 11, 2016, January 20, 2016, January 29, 2016, February 26, 2016, March 10, 2016, March 17, 2016, March 24, 2016 and March 31, 2016 by and among us and various individuals (each, a "*Purchaser*" and together "*Purchasers*"), including all five members of our Board of Directors, we sold and issued to the Purchasers Senior Secured Convertible Debentures (the "*Debentures*") and warrants to purchase shares of common stock equal to 50% of the number of shares issuable pursuant to the subscription amount (the "*Warrants*") for an aggregate purchase price of $1,419,549 (the "*Purchase Price*") for the Final Closing, bringing the total raised in the Offering to $6,329,549. For the Final Closing, we netted $1,304,049 in cash after taking into account fees related to the offering. Of this amount, an aggregate of $164,549 was invested by the five members of our Board of Directors. For the entire private placement offering, we netted an aggregate of $5,101,049 in cash in the aggregate after subtracting $568,000 in fees and $660,000 in debt conversions into this private placement.

On July 13, 2016, we announced the unveiling of the newest addition to our product line based on our powerful PCT platform, the 2320EXT. The product unveiling took place during the recent annual conference of the American Society for Mass Spectrometry ("*ASMS*") in San Antonio, Texas.

On July 21, 2016, we announced the initial shipment of our 2320EXT instrument to an Australian cancer research group (ProCan) named by the White House as a collaborator in the U.S.'s "Cancer Moonshot" initiative.

On October 28, 2016, an accredited investor (the "*Investor*") purchased from us a promissory note in the aggregate principal amount of up to $2,000,000 (the "*Revolving Note*") due and payable on the earlier of October 28, 2017 (the "*Maturity Date*") or on the seventh business day after the closing of a Qualified Offering (as defined in the Revolving Note). Although the Revolving Note is dated October 26, 2016, the transaction did not close until October 28, 2016, when we received its initial $250,000 advance pursuant to the Revolving Note. As a result, on the same day and pursuant to the Revolving Note, we issued to the Investor a Common Stock Purchase Warrant to purchase 625,000 shares of our common stock at an exercise price per share equal to $0.40 per share. The Investor is obligated to provide us with advances of $250,000 under the Revolving Note, but the Investor shall not be required to advance more than $250,000 in any individual fifteen (15) day period and no more than $500,000 in the thirty (30) day period immediately following the date of the initial advance. Notwithstanding the fifteen (15) day period limitation, on November 2, 2016, November 23, 2016, December 6, 2016, and December 16, 2016, we received $1,000,000 pursuant to the Revolving Note and we issued to the Investor additional warrants to purchase a total of 2,500,000 shares of our common stock at $0.40 per share (each warrant gives the Investor the right to purchase 625,000 shares of our common stock. The terms of the Warrants are identical except for the exercise date, issue date, and termination date. Interest on the principal balance of the Revolving Note shall be paid in full on the Maturity Date, unless otherwise paid prior to the Maturity Date.

Corporate Information

We were incorporated in the Commonwealth of Massachusetts in August 1978 as Boston Biomedica, Inc. In September 2004, we completed the sale of Boston Biomedica's core business units and began to focus exclusively on the development and commercialization of the PCT platform. Following this change in business strategy, we changed our legal name from Boston Biomedica, Inc. to Pressure BioSciences, Inc. ("*PBI*"). We began operations as PBI in February 2005, research and development activities in April 2006, early marketing and selling activities of our Barocycler® instruments in late 2007, and active marketing and selling of our PCT-based instrument platform in 2012.

Where You Can Find More Information

Our website address is *www.pressurebiosciences.com*. We do not intend for our website address to be an active link or to otherwise incorporate by reference the contents of the website into this prospectus. The public may read and copy any materials the Company files with the U.S. Securities and Exchange Commission (the "SEC") at the SEC's Public Reference Room at 100 F Street, NE, Washington, DC 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0030. The SEC maintains an Internet website (*http://www.sec.gov*) that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC.

THE OFFERING

Securities offered by us:	An aggregate of shares of our common stock and warrants to purchase shares of our common stock. Each warrant will have a per share exercise price of $ per share, is exercisable immediately and will expire five years from the date of issuance. A warrant to purchase one share of common stock will accompany every two shares of common stock purchased. The shares and warrants will trade separately.
Common stock outstanding before the offering	31,809,839 Shares [(1)]
Common stock to be outstanding after the offering	Shares [(1)]
Option to purchase additional shares	We have granted the underwriters a 45-day option to purchase up to additional shares of our common stock and/or warrants to purchase additional shares to cover allotments, if any.
Description of the warrants offered hereby	The warrants will have a per share exercise price of . The warrants are exercisable immediately and expire five years from the date of issuance. The exercise price and the number of shares of common stock purchasable upon the exercise of the warrants are subject to adjustment upon the occurrence of specific events, including stock dividends, stock splits, combinations and reclassifications of our common stock.
Use of proceeds	We intend to use the net proceeds of this offering for: the repayment of liabilities ; research and development for new products and improvements to existing products, upgrading sales and marketing capabilities, the purchase of raw materials and labor for manufacturing our products, upgrading our operations capabilities, hiring a CFO, and for general working capital purposes. See “Use of Proceeds.”
Risk factors	Investing in our securities is highly speculative and involves a high degree of risk. You should carefully consider the information set forth in the “Risk Factors” section beginning on page 16 before deciding to invest in our securities.
Trading Symbols	Our common stock is currently quoted on the OTCQB under the trading symbol “PBIO”. We intend to apply to the NASDAQ Capital Market to list our common stock under the symbol “PBIO” and our warrants under the symbol “PBIOW” and expect such listings to occur concurrently with this offering. However, there is no guarantee that our applications will be granted.
Lock-up	We and our directors, officers and any other 5% or greater holder of outstanding shares of our common stock have agreed with the underwriters not to offer for sale, issue, sell, contract to sell, pledge or otherwise dispose of any of our common stock or securities convertible into common stock for a period of (i) six month after the date of this prospectus in the case of our directors and

officers and (ii) three months after the date of this prospectus in the case of the Company and any other 5% or greater holder of our outstanding securities, without the prior written consent of the representative. See “Underwriting” section on page 74 .

NASDAQ listing requirements include, among other things, a stock price threshold. As a result, prior to effectiveness, we may need to take necessary steps to meet NASDAQ listing requirements, including but not limited to a reverse split of our common stock**.**

(1) The common stock to be outstanding before and after this offering is based on 31,809,839 shares outstanding as of April 7, 2017, and excludes the following as of such date:

7,814,250 shares issuable upon exercise of outstanding options with a weighted average exercise price of $0.37;

656,250 shares remaining for issuance pursuant to 2005 Equity Incentive Plan;

292,500 shares remaining for issuance pursuant to 2013 Equity Incentive Plan;

977,000 shares remaining for issuance pursuant to 2015 Nonqualified Stock Option Plan;

24,449,660 shares issuable upon exercise of outstanding warrants with a weighted average exercise price of $0.40;

26,192,288 shares issuable upon the conversion of outstanding convertible notes (including convertible debentures); and

shares of common stock underlying the warrants to be issued to the underwriters in connection with this offering.

SUMMARY CONSOLIDATED FINANCIAL INFORMATION

The following summary consolidated statements of operations data for the years ended December 31, 2016 and 2015 have been derived from our audited consolidated financial statements included elsewhere in this prospectus. The historical financial data presented below are not necessarily indicative of our operating results to be expected for the full fiscal year ending December 31, 2017 or any other period. You should read the summary consolidated financial data in conjunction with those financial statements and the accompanying notes and "Management's Discussion and Analysis of Financial Condition and Results of Operations." Our consolidated financial statements are prepared and presented in accordance with United States generally accepted accounting principles, or U.S. GAAP. Our unaudited consolidated financial statements have been prepared on a basis consistent with our audited financial statements and include all adjustments, consisting of normal and recurring adjustments that we consider necessary for a fair presentation of the financial position and results of operations as of and for such periods.

SUMMARY OPERATING DATA

	Fiscal Years Ended December 31,	
	2016	2015
Revenue:		
Products, services, other	$ 1,794,749	$ 1,409,991
Grant revenue	181,738	387,700
Total revenue	1,976,487	1,797,691
Costs and expenses:		
Cost of products and services	834,012	609,054
Research and development	1,183,011	1,105,295
Selling and marketing	872,365	745,574
General and administrative	2,822,752	2,902,950
Total operating costs and expenses	5,712,140	5,362,873
Operating loss	(3,735,653)	(3,565,182)
Other (expense) income:		
Interest expense	(4,501,186)	(4,146,416)
Other expense	(1,112)	(36,879)
Impairment loss on investment	(373,682)	-
Gain on extinguishment of embedded derivative liabilities	-	2,555,180
Change in fair value of derivative liabilities	5,904,649	(2,222,001)
Total other (expense) income	1,028,669	(3,850,116)
Net loss	(2,706,984)	(7,415,298)

Accrued dividends on convertible preferred stock	-	(23,194)
Net loss applicable to common shareholders	$ (2,706,984)	$ (7,438,492)
Net loss per share attributable to common stockholders - basic and diluted	$ (0.10)	$ (0.36)
Weighted average common stock shares outstanding used in the basic and diluted net loss per share calculation	27,339,362	20,726,205

The following table presents consolidated balance sheet data as of December 31, 2016 on:

an actual basis;

an as adjusted basis, giving effect to advances from the Revolving Note in the amount of $750 ,000, less financing fees of $60,000, pursuant to the Revolving Loan in January and February 2017; and

a pro forma, as adjusted basis, giving effect to (i) the issuance of the Revolving Note in the amount of $750,000, less financing fees of $60,000, ((ii) the conversion of 300 shares of Series D Preferred Stock into approximately 750,000 shares of common stock, the conversion of 86,570 shares of Series G Preferred Stock into approximately 865,700 shares of common stock, the conversion of 10,000 shares of Series H Preferred Stock into approximately 1,000,000 shares of common stock, the conversion of 21 shares of Series H2 Preferred Stock into approximately 2,100,000 shares of common stock, the conversion of 3,521 shares of Series J Preferred Stock into approximately 3,521,000 shares of common stock and the conversion of 6,816 shares of Series K Preferred Stock into approximately 6,816,000 shares of common stock, (iii) the conversion of $7,803,045 of outstanding convertible notes (including convertible debentures) into approximately 26,733,955 shares of common stock and (iv) the sale by us of shares of common stock and warrants in this offering at an assumed public offering price of $ per share and $ per warrant after deducting underwriting discounts and commissions and estimated offering expenses.

The pro forma as adjusted information set forth below is illustrative only and will be adjusted based on the actual public offering price and other terms of this offering determined at pricing.

	As of December 31, 2016		
	Actual	**As Adjusted**	**Pro Forma, As Adjusted**
Consolidated Balance Sheets Data:			
Cash and cash equivalents	$138,363	$828,363	$
Total assets	1,625,753	2,315,753	
Total liabilities	10,009,171	10,699,171	
Total stockholders' deficit	(8,383,418)	(8,383,418)	

(1) A $1.00 increase or decrease in the assumed public offering price per share would increase or decrease our cash and cash equivalents, working capital, total assets and total stockholders' equity by approximately $, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the underwriting discount and estimated offering expenses payable by us.

15

RISK FACTORS

Investing in our securities involves a great deal of risk. Careful consideration should be made of the following factors as well as other information included in this prospectus before deciding to purchase our securities. There are many risks that affect our business and results of operations, some of which are beyond our control. Our business, financial condition or operating results could be materially harmed by any of these risks. This could cause the trading price of our securities to decline, and you may lose all or part of your investment. Additional risks that we do not yet know of or that we currently think are immaterial may also affect our business and results of operations.

Risks Related To Our COMPANY

We have received an opinion from our independent registered public accounting firm expressing substantial doubt regarding our ability to continue as a going concern.

The audit report issued by our independent registered public accounting firm on our audited consolidated financial statements for the fiscal year ended December 31, 2016 contains an explanatory paragraph regarding our ability to continue as a going concern. The audit report states that our auditing firm has substantial doubt in our ability to continue as a going concern due to the risk that we may not have sufficient cash and liquid assets at December 31, 2016 to cover our operating and capital requirements for the next twelve-month period; and if sufficient cash cannot be obtained, we would have to substantially alter, or possibly even discontinue, operations. The accompanying consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Management has developed a plan to continue operations. This plan includes continued control of expenses and obtaining equity or debt financing. Although we have successfully completed equity financings and reduced expenses in the past, we cannot assure you that our plans to address these matters in the future will be successful.

The factors described above could adversely affect our ability to obtain additional financing on favorable terms, if at all, and may cause investors to have reservations about our long-term prospects, and may adversely affect our relationships with customers. There can be no assurance that our auditing firm will not issue the same opinion in the future. If we cannot successfully continue as a going concern, our stockholders may lose their entire investment.

Our revenue is dependent upon acceptance of our products by the market. The failure of such acceptance will cause us to curtail or cease operations.

Our revenue comes from the sale of our products. As a result, we will continue to incur operating losses until such time as sales of our products reach a mature level and we are able to generate sufficient revenue from the sale of our products to meet our operating expenses. There can be no assurance that customers will adopt our technology and products, or that businesses and prospective customers will agree to pay for our products. In the event that we are not able to significantly increase the number of customers that purchase our products, or if we are unable to charge the necessary prices, our financial condition and results of operations will be materially and adversely affected.

Our business could be adversely affected if we fail to implement and maintain effective disclosure controls and procedures and internal control over financial reporting.

We concluded that as of December 31, 2016 , our disclosure controls and procedures and our internal control over financial reporting were not effective. We have determined that we have limited resources for adequate personnel to prepare and file reports under the Securities Exchange Act of 1934 within the required time periods and that material weaknesses in our internal control over financial reporting exist relating to our accounting for complex equity transactions. If we are unable to implement and maintain effective disclosure controls and procedures and remediate the material weaknesses in a timely manner, or if we identify other material weaknesses in the future, our ability to produce accurate and timely financial statements and public reports could be impaired, which could adversely affect our business and financial condition. We identified a lack of sufficient segregation of duties. Specifically, this material weakness is such that the design over these areas relies primarily on detective controls and could be strengthened by adding preventive controls to properly safeguard assets. In addition, investors may lose confidence in our reported information and the market price of our common stock may decline.

We have a history of operating losses, anticipate future losses and may never be profitable.

We have experienced significant operating losses in each period since we began investing resources in PCT and CP. These losses have resulted principally from research and development, sales and marketing, and general and administrative expenses associated with the development of our PCT business. During the year ended December 31, 2016, we recorded a net loss applicable to common shareholders of $2,706,984 , or ($0.10) per share, as compared with $7,438,492, or ($0.36) per share, of the corresponding period in 2015. We expect to continue to incur operating losses until sales of PCT and CP products increase substantially. We cannot be certain when, if ever, we will become profitable. Even if we were to become profitable, we might not be able to sustain such profitability on a quarterly or annual basis.

If we are unable to obtain additional financing, business operations will be harmed and if we do obtain additional financing then existing shareholders may suffer substantial dilution.

We need substantial capital to implement our sales distribution strategy for our current products and to develop and commercialize future products using our pressure cycling technology products and services in the sample preparation area, as well as for applications in other areas of life sciences. Our capital requirements will depend on many factors, including but not limited to:

the problems, delays, expenses, and complications frequently encountered by early-stage companies;

market acceptance of our pressure cycling technology products and services for sample preparation;

the success of our sales and marketing programs; and

changes in economic, regulatory or competitive conditions in the markets we intend to serve.

We expect the net proceeds from this offering, along with our current cash position, will enable us to fund our operating expenses and capital expenditure requirements for at least the next 24 months. Thereafter, unless we achieve profitability, we anticipate that we will need to raise additional capital to fund our operations and to otherwise implement our overall business strategy. We currently do not have any contracts or commitments for additional financing. There can be no assurance that financing will be available in amounts or on terms acceptable to us, if at all. Any additional equity financing may involve substantial dilution to then existing shareholders.

If adequate funds are not available or if we fail to obtain acceptable additional financing, we may be required to:

- severely limit or cease our operations or otherwise reduce planned expenditures and forego other business opportunities, which could harm our business;
- obtain financing with terms that may have the effect of substantially diluting or adversely affecting the holdings or the rights of the holders of our capital stock; or
- obtain funds through arrangements with future collaboration partners or others that may require us to relinquish rights to some or all of our technologies or products.

Our financial results depend on revenues from our pressure cycling technology products and services, and from government grants.

We currently rely on revenues from PCT and CP technology products and services in the sample preparation area and from revenues derived from grants awarded to us by governmental agencies, such as the National Institutes of Health. We have been unable to achieve market acceptance of our product offerings to the extent necessary to achieve significant revenue. Competition for government grants is very intense, and we can provide no assurance that we will continue to be awarded grants in the future. If we are unable to increase revenues from sales of our pressure cycling technology products and services and government grants, our business will fail.

We may be unable to obtain market acceptance of our pressure cycling technology products and services.

Many of our initial sales of our pressure cycling technology products and services have been to our collaborators, following their use of our products in studies undertaken in sample preparation for genomics, proteomics and small molecules studies. Later sales have been to key opinion leaders. Our technology requires scientists and researchers to adopt a method of sample extraction that is different than existing techniques. Our PCT sample preparation system is also more costly than existing techniques. Our ability to obtain market acceptance will depend, in part, on our ability to demonstrate to our potential customers that the benefits and advantages of our technology outweigh the increased cost of our technology compared with existing methods of sample extraction. If we are unable to demonstrate the benefits and advantages of our products and technology as compared with existing technologies, we will not gain market acceptance and our business will fail.

Our business may be harmed if we encounter problems, delays, expenses, and complications that often affect companies that have not achieved significant market acceptance.

Our pressure cycling technology business continues to face challenges in achieving market acceptance. If we encounter problems, delays, expenses and complications, many of which may be beyond our control or may harm our business or prospects. These include:

- availability of adequate financing;
- unanticipated problems and costs relating to the development, testing, production, marketing, and sale of our products;
- delays and costs associated with our ability to attract and retain key personnel; and
- competition.

The sales cycle of our pressure cycling technology products is lengthy. We have incurred and may continue to incur significant expenses and we may not generate any significant revenue related to those products.

Many of our current and potential customers have required between three and six months or more to test and evaluate our pressure cycling technology products. This increases the possibility that a customer may decide to cancel its order or otherwise change its plans, which could reduce or eliminate our sales to that potential customer. As a result of this lengthy sales cycle, we have incurred and may continue to incur significant research and development, selling and marketing, and general and administrative expense related to customers from whom we have not yet generated any revenue from our products, and from whom we may never generate the anticipated revenue if a customer is not satisfied with the results of the evaluation of our products or if a customer cancels or changes its plans.

Our business could be harmed if our products contain undetected errors or defects.

We are continuously developing new and improving our existing, pressure cycling technology products in sample preparation and we expect to do so in other areas of life sciences depending upon the availability of our resources. Newly introduced products can contain undetected errors or defects. In addition, these products may not meet their performance specifications under all conditions or for all applications. If, despite internal testing and testing by our collaborators, any of our products contain errors or defects or fail to meet customer specifications, then we may be required to enhance or improve those products or technologies. We may not be able to do so on a timely basis, if at all, and may only be able to do so at considerable expense. In addition, any significant reliability problems could result in adverse customer reaction, negative publicity or legal claims and could harm our business and prospects.

Our success may depend on our ability to manage growth effectively.

Our failure to manage growth effectively could harm our business and prospects. Given our limited resources and personnel, growth of our business could place significant strain on our management, information technology systems, sources of manufacturing capacity and other resources. To properly manage our growth, we may need to hire additional employees and identify new sources of manufacturing capabilities. Failure to effectively manage our growth could make it difficult to manufacture our products and fill orders, as well as lead to declines in product quality or increased costs, any of which would adversely impact our business and results of operations.

Our success is substantially dependent on the continued service of our senior management.

Our success is substantially dependent on the continued service of our senior management, specifically our Chief Executive Officer, Richard Schumacher. The loss of the services of any of our senior management has made, and could make it more difficult to successfully operate our business and achieve our business goals. In addition, our failure to retain existing engineering, research and development and sales personnel could harm our product development capabilities and customer and employee relationships, delay the growth of sales of our products and could result in the loss of key information, expertise or know-how.

We may not be able to hire or retain the number of qualified personnel, particularly engineering and sales personnel, required for our business, which would harm the development and sales of our products and limit our ability to grow.

Competition in our industry for senior management, technical, sales, marketing, finance and other key personnel is intense. If we are unable to retain our existing personnel, or attract and train additional qualified personnel, either because of competition in our industry for such personnel or because of insufficient financial resources, our growth may be limited. Our success also depends in particular on our ability to identify, hire, train and retain qualified engineering and sales personnel with experience in design, development and sales of laboratory equipment.

Our reliance on a single third party for all of our manufacturing, and certain of our engineering, and other related services could harm our business.

We currently solely rely on CBM Industries, a third party contract manufacturer, to manufacture our PCT instrumentation, provide manufacturing expertise, and manage the majority of our sub-contractor supplier relationships. Because of our dependence on one manufacturer, our success will depend, in part, on the ability of CBM to manufacture our products cost effectively, in sufficient quantities to meet our customer demand, if and when such demand occurs, and meeting our quality requirements. If CBM experiences manufacturing problems or delays, or if CBM decides not to continue to provide us with these services, our business may be harmed. While we believe other contract manufacturers are available to address our manufacturing and engineering needs, if we find it necessary to replace CBM, there will be a disruption in our business and we would incur additional costs and delays that would harm our business.

Our failure to manage current or future alliances or joint ventures effectively may harm our business.

We have entered into business relationships with four distribution partners and one co-marketing partner, and we may enter into additional alliances, joint ventures or other business relationships to further develop, market and sell our pressure cycling technology product line. We may not be able to:

- identify appropriate candidates for alliances, joint ventures or other business relationships;
- assure that any candidate for an alliance, joint venture or business relationship will provide us with the support anticipated;
- successfully negotiate an alliance, joint venture or business relationship on terms that are advantageous to us; or
- successfully manage any alliance or joint venture.

Furthermore, any alliance, joint venture or other business relationship may divert management time and resources. Entering into a disadvantageous alliance, joint venture or business relationship, failing to manage an alliance, joint venture or business relationship effectively, or failing to comply with any obligations in connection therewith, could harm our business and prospects.

We may not be successful in growing our international sales.

We cannot guarantee that we will successfully develop our international sales channels to enable us to generate significant revenue from international sales. We currently have four international distribution agreements that cover 24 countries in Europe, Asia and Australia. We have generated limited sales to date from international sales and cannot guarantee that we will be able to increase our sales. As we expand, our international operations may be subject to numerous risks and challenges, including:

- multiple, conflicting and changing governmental laws and regulations, including those that regulate high pressure equipment;
- reduced protection for intellectual property rights in some countries;
- protectionist laws and business practices that favor local companies;
- political and economic changes and disruptions;

export and import controls;

tariff regulations; and

currency fluctuations.

Our operating results are subject to quarterly variation. Our operating results may fluctuate significantly from period to period depending on a variety of factors, including but not limited to the following:

our ability to increase our sales of our pressure cycling technology products for sample preparation on a consistent quarterly or annual basis;

the lengthy sales cycle for our products;

the product mix of the Barocycler® instruments we install in a given period, and whether the installations are completed pursuant to sales, rental or lease arrangements, and the average selling prices that we are able to command for our products;

our ability to manage our costs and expenses;

our ability to continue our research and development activities without incurring unexpected costs and expenses; and

our ability to comply with state and federal regulations without incurring unexpected costs and expenses.

Our instrumentation operates at high pressures and may therefore become subject to certain regulations in the European Community. Regulation of high pressure equipment may limit or hinder our development and sale of future instrumentation.

Our Barocycler® instruments operate at high pressures. If our Barocycler® instruments exceed certain pressure levels, our products may become subject to the European Pressure Equipment Directive, which requires certain pressure equipment meet certain quality and safety standards. We do not believe that we are subject to this directive because our Barocycler® instruments are currently below the threshold documented in the text of the directive. If our interpretation were to be challenged, we could incur significant costs defending the challenge, and we could face production and selling delays, all of which could harm our business.

We expect that we will be subject to regulation in the United States, such as by the Food and Drug Administration, and overseas, if and when we begin to invest more resources in the development and commercialization of PCT in applications outside of sample preparation for the research field.

Our current pressure cycling technology products in the area of sample preparation for the research field are not regulated by the FDA. Certain applications in which we intend to develop and commercialize pressure cycling technology, such as protein purification, pathogen inactivation and immunodiagnostics, are expected to require regulatory approvals or clearances from regulatory agencies, such as the FDA, prior to commercialization, when we expand our commercialization activities outside of the research field. We expect that obtaining these approvals or clearances will require a significant investment of time and capital resources and there can be no assurance that such investments will receive approvals or clearances that would allow us to commercialize the technology for these applications.

If we are unable to protect our patents and other proprietary technology relating to our pressure cycling technology products, our business will be harmed.

Our ability to further develop and successfully commercialize our products will depend, in part, on our ability to enforce our patents, preserve our trade secrets, and operate without infringing the proprietary rights of third parties. PBI has 14 United States granted patents and 1 foreign granted patent (Japan: 5587770, EXTRACTION AND PARTITIONING OF MOLECULES) covering multiple applications of PCT in the life sciences field. The patents expire between 2017 and 2032. PBI also has 19 pending patents in the USA, Canada, Europe, Australia, China, and Taiwan. There can be no assurance that (a) any patent applications filed by us will result in issued patents; (b) patent protection will be secured for any particular technology; (c) any patents that have been or may be issued to us will be valid or enforceable; (d) any patents will provide meaningful protection to us; (e) others will not be able to design around our patents; and (f) our patents will provide a competitive advantage or have commercial value. The failure to obtain adequate patent protection would have a material adverse effect on us and may adversely affect our ability to enter into, or affect the terms of, any arrangement for the marketing or sale of any product.

Our patents may be challenged by others.

We could incur substantial costs in patent proceedings, including interference proceedings before the United States Patent and Trademark Office, and comparable proceedings before similar agencies in other countries, in connection with any claims that may arise in the future. These proceedings could result in adverse decisions about the patentability of our inventions and products, as well as about the enforceability, validity, or scope of protection afforded by the patents.

If we are unable to maintain the confidentiality of our trade secrets and proprietary knowledge, others may develop technology and products that could prevent the successful commercialization of our products.

We rely on trade secrets and other unpatented proprietary information in our product development activities. To the extent we rely on trade secrets and unpatented know-how to maintain our competitive technological position, there can be no assurance that others may not independently develop the same or similar technologies. We seek to protect our trade secrets and proprietary knowledge, in part, through confidentiality agreements with our employees, consultants, advisors and contractors. These agreements may not be sufficient to effectively prevent disclosure of our confidential information and may not provide us with an adequate remedy in the event of unauthorized disclosure of such information. If our employees, consultants, advisors, or contractors develop inventions or processes independently that may be applicable to our products, disputes may arise about ownership of proprietary rights to those inventions and processes. Such inventions and processes will not necessarily become our property, but may remain the property of those persons or their employers. Protracted and costly litigation could be necessary to enforce and determine the scope of our proprietary rights. Failure to obtain or maintain trade secret protection, for any reason, could harm our business.

If we infringe on the intellectual property rights of others, our business may be harmed.

It is possible that the manufacture, use or sale of our pressure cycling technology products or services may infringe patent or other intellectual property rights of others. We may be unable to avoid infringement of the patent or other intellectual property rights of others and may be required to seek a license, defend an infringement action, or challenge the validity of the patents or other intellectual property rights in court. We may be unable to secure a license on terms and conditions acceptable to us, if at all. Also, we may not prevail in any patent or other intellectual property rights litigation. Patent or other intellectual property rights litigation is costly and time-consuming, and there can be no assurance that we will have sufficient resources to bring any possible litigation related to such infringement to a successful conclusion. If we do not obtain a license under such patents or other intellectual property rights, or if we are found liable for infringement, or if we are unsuccessful in having such patents declared invalid, we may be liable for significant monetary damages, may encounter significant delays in successfully commercializing and developing our pressure cycling technology products, or may be precluded from participating in the manufacture, use, or sale of our pressure cycling technology products or services requiring such licenses.

We may be unable to adequately respond to rapid changes in technology and the development of new industry standards.

The introduction of products and services embodying new technology and the emergence of new industry standards may render our existing pressure cycling technology products and related services obsolete and unmarketable if we are unable to adapt to change. We may be unable to allocate the funds necessary to improve our current products or introduce new products to address our customers' needs and respond to technological change. In the event that other

companies develop more technologically advanced products, our competitive position relative to such companies would be harmed.

We may not be able to compete successfully with others that are developing or have developed competitive technologies and products.

A number of companies have developed, or are expected to develop, products that compete or will compete with our products. We compete with companies that have existing technologies for the extraction of nucleic acids, proteins and small molecules from cells and tissues, including but not limited to methods such as mortar and pestle, sonication, rotor-stator homogenization, French press, bead beating, freezer milling, enzymatic digestion, and chemical dissolution.

We are aware that there are additional companies pursuing new technologies with similar goals to the products developed or being developed by us. Some of the companies with which we now compete, or may compete in the future, have or may have more extensive research, marketing, and manufacturing capabilities, more experience in genomics and proteomics sample preparation, protein purification, pathogen inactivation, immunodiagnostics, and DNA sequencing and significantly greater technical, personnel and financial resources than we do, and may be better positioned to continue to improve their technology to compete in an evolving industry. To compete, we must be able to demonstrate to potential customers that our products provide improved performance and capabilities. Our failure to compete successfully could harm our business and prospects.

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

We are a small company with a minimal number of employees. We expect to experience a period of expansion in headcount, facilities, infrastructure and overhead and anticipate that further expansion will be required to address potential growth and market opportunities. Future growth will impose significant added responsibilities on members of management, including the need to identify, recruit, maintain and integrate new managers. Our future financial performance and its ability to compete effectively will depend, in part, on its ability to manage any future growth effectively.

Provisions in our Restated Articles of Organization and By-laws may discourage or frustrate stockholders' attempts to remove or replace our current management.

Our Restated Articles of Organization, as amended and By-laws, as amended, contain provisions that may make it more difficult or discourage changes in our management that our stockholders may consider to be favorable. These provisions include:

- a classified board of directors;
- advance notice for stockholder nominations to the board of directors;
- limitations on the ability of stockholders to remove directors; and
- a provision that allows a majority of the directors to fill vacancies on the board of directors.

These provisions could prevent or frustrate attempts to make changes in our management that our stockholders consider to be beneficial and could limit the price that our stockholders might receive in the future for shares of our common stock.

The costs of compliance with the reporting obligations of the Exchange Act, and with the requirements of the Sarbanes-Oxley Act of 2002 and the Dodd-Frank Wall Street Reform and Consumer Protection Act, may place a strain on our limited resources and our management's attention may be diverted from other business concerns.

As a result of the regulatory requirements applicable to public companies, we incur legal, accounting, and other expenses that are significant in relation to the size of our Company. In addition, the Sarbanes-Oxley Act of 2002 and the Dodd-Frank Wall Street Reform and Consumer Protection Act, as well as rules subsequently implemented by the

SEC and OTC Markets Group, Inc., have required changes in corporate governance and financial disclosure practices of public companies, some of which are currently applicable to us and others will or may become applicable to us in the future. These rules and regulations have increased and will continue to increase our legal and financial compliance costs and may make some activities more time-consuming. These requirements have placed and will continue to place a strain on our systems and on our management and financial resources.

Certain of our net deferred tax assets could be substantially limited if we experience an ownership change as defined in the Internal Revenue Code.

Certain of our net operating losses ("*NOLs*") give rise to net deferred tax assets. Our ability to utilize NOLs and to offset our future taxable income and/or to recover previously paid taxes would be limited if we were to undergo an "ownership change" within the meaning of Section 382 of the Internal Revenue Code (the "*Code*"). In general, an "ownership change" occurs whenever the percentage of the stock of a corporation owned by "5 percent shareholders," within the meaning of Section 382 of the Code, increases by more than 50 percentage points over the lowest percentage of the stock of such corporation owned by such "5 percent shareholders" at any time over the preceding three years.

An ownership change under Section 382 of the Code would establish an annual limitation on the amount of NOLs we could utilize to offset our taxable income in any single taxable year to an amount equal to (i) the product of a specified rate, which is published by the U.S. Treasury, and the aggregate value of our outstanding stock plus; and (ii) the amount of unutilized limitation from prior years. The application of these limitations might prevent full utilization of the deferred tax assets attributable to our NOLs. We may have or will have experienced an ownership change as defined by Section 382 through the sale of equity and, therefore, we will consider whether the sale of equity units will result in limitations of our net operating losses under Section 382 when we start to generate taxable income. However, whether a change in ownership occurs in the future is largely outside of our control, and there can be no assurance that such a change will not occur.

RISKS RELATING TO OWNERSHIP OF OUR SECURITIES

The holders of our Common Stock could suffer substantial dilution due to our corporate financing practices.

The holders of our common stock could suffer substantial dilution due to our corporate financing practices, which, in the past few years, have included private placements and a registered direct offering. As of December 31 , 2016, we have issued shares of Series A Convertible Preferred Stock, Series B Convertible Preferred Stock, Series C Convertible Preferred Stock, Series D Convertible Preferred Stock, Series E Convertible Preferred Stock, Series G Convertible Preferred Stock, Series H Convertible Preferred Stock, Series H2 Convertible Preferred Stock, Series J Convertible Preferred Stock and Series K Convertible Preferred Stock.

As of December 31, 2016, all of the shares of Series A Convertible Preferred Stock, Series B Convertible Preferred Stock, Series C Convertible Preferred Stock, and Series E Convertible Preferred Stock had been converted into shares of common stock. As of December 31, 2016 only shares of Series D Convertible Preferred Stock, Series G Convertible Preferred Stock, Series H Convertible Preferred Stock, Series H2 Convertible Preferred Stock, Series J Convertible Preferred Stock and Series K Convertible Preferred Stock were outstanding. Further, in connection with those private placements and the Series D registered direct offering, we issued warrants to purchase common stock. In addition, as of December 31, 2016, we had issued notes convertible into common stock at prices ranging from $0.28 to $0.45 per common share. If all of the outstanding shares of Series D Convertible Preferred Stock, Series G Convertible Preferred Stock, Series H Convertible Preferred Stock, Series H2 Convertible Preferred Stock, Series J Convertible Preferred Stock and Series K Convertible Preferred Stock were converted into shares of common stock and all outstanding options and warrants to purchase shares of common stock were exercised and all notes were converted, each as of December 31, 2016, an additional 73,515,600 shares of common stock would be issued and outstanding. This additional issuance of shares of common stock would cause immediate and substantial dilution to our existing stockholders and could cause a significant reduction in the market price of our common stock.

Sales of a significant number of shares of our common stock in the public market or the perception of such possible sales, could depress the market price of our common stock.

Sales of a substantial number of shares of our common stock in the public markets, which include an offering of our preferred stock or common stock could depress the market price of our common stock and impair our ability to raise capital through the sale of additional equity or equity-related securities. We cannot predict the effect that future sales of our common stock or other equity-related securities would have on the market price of our common stock.

Our share price could be volatile and our trading volume may fluctuate substantially.

The price of common stock has been and may in the future continue to be extremely volatile. Many factors could have a significant impact on the future price of our shares of common stock, including:

- our inability to raise additional capital to fund our operations, whether through the issuance of equity securities or debt;
- our failure to successfully implement our business objectives;
- compliance with ongoing regulatory requirements;
- market acceptance of our products;
- technological innovations and new commercial products by our competitors;
- changes in government regulations;
- general economic conditions and other external factors;
- actual or anticipated fluctuations in our quarterly financial and operating results; and
- the degree of trading liquidity in our shares of common stock.

A decline in the price of our shares of common stock could affect our ability to raise further working capital and adversely impact our ability to continue operations.

The relatively low price of our shares of common stock, and a decline in the price of our shares of common stock, could result in a reduction in the liquidity of our common stock and a reduction in our ability to raise capital. Because a significant portion of our operations has been and will continue to be financed through the sale of equity securities, a decline in the price of our shares of common stock could be especially detrimental to our liquidity and our operations. Such reductions and declines may force us to reallocate funds from other planned uses and may have a significant negative effect on our business plans and operations, including our ability to continue our current operations. If the price for our shares of common stock declines, it may be more difficult to raise additional capital. If we are unable to raise sufficient capital, and we are unable to generate funds from operations sufficient to meet our obligations, we will not have the resources to continue our operations.

The market price for our shares of common stock may also be affected by our ability to meet or exceed expectations of analysts or investors. Any failure to meet these expectations, even if minor, may have a material adverse effect on the market price of our shares of common stock.

If we issue additional securities in the future, it will likely result in the dilution of our shares of existing stockholders.

As of December 31, 2016, there were 30,999,839 shares of common stock issued and outstanding. Similarly, at such time, there were no shares of Series A Junior Participating Preferred Stock; Series A Convertible Preferred Stock; Series B Convertible Preferred Stock; Series C Convertible Preferred Stock; and Series E Convertible Preferred Stock. As of December 31, 2016 there were 300 shares of Series D Convertible Preferred Stock issued and outstanding and convertible into 750,000 shares of common stock, 86,570 shares of Series G Convertible Preferred Stock issued and outstanding convertible into 865,700 shares of common stock, 10,000 shares of Series H Convertible Preferred Stock issued and outstanding convertible into 1,000,000 shares of common stock, 21 shares of Series H2 Convertible Preferred Stock issued and outstanding convertible into 2,100,000 shares of common stock, 3,521 shares of Series J Convertible Preferred Stock issued and outstanding convertible into 3,521,000 shares of common stock, and 6,816 shares of Series K Convertible Preferred Stock issued and outstanding convertible into 6,816,000 shares of common stock.

As of December 31, 2016, there were outstanding options and warrants to purchase an aggregate of 31,728,945 shares of common stock; and convertible debt convertible into 26,733,955 shares of common stock. From time to time, we also may increase the number of shares available for issuance in connection with our equity compensation plan, we may adopt new equity compensation plans, and we may issue awards to our employees and others who provide services to us outside the terms of our equity compensation plans. Our board of directors may fix and determine the designations, rights, preferences or other variations of each class or series of preferred stock and may choose to issue

some or all of such shares to provide additional financing in the future.

The issuance of any securities for acquisition, licensing or financing efforts, upon conversion of any preferred stock or exercise of warrants, pursuant to our equity compensation plans, or otherwise may result in a reduction of the book value and market price of the outstanding shares of our common stock. If we issue any such additional securities, such issuance will cause a reduction in the proportionate ownership and voting power of all current stockholders. Further, such issuance may result in a change in control of our Company.

Financial Industry Regulatory Authority ("FINRA") sales practice requirements may also limit a stockholder's ability to buy and sell our common stock.

FINRA has adopted rules that require that in recommending an investment to a customer, a broker-dealer must have reasonable grounds for believing that the investment is suitable for that customer. Prior to recommending speculative low-priced securities to their non-institutional customers, broker-dealers must make reasonable efforts to obtain information about the customer's financial status, tax status, investment objectives and other information. Under interpretations of these rules, FINRA believes that there is a high probability that speculative low-priced securities will not be suitable for at least some customers. FINRA requirements make it more difficult for broker-dealers to recommend that their customers buy our common stock, which may limit your ability to buy and sell our common stock and have an adverse effect on the market for our shares.

Our Common Stock is subject to the "Penny Stock" rules of the SEC and the trading market in our securities is limited, which makes transactions in our stock cumbersome and may reduce the value of an investment in our stock.

The Securities and Exchange Commission has adopted Rule 15g-9 which establishes the definition of a "penny stock," for the purposes relevant to us, as any equity security that has a market price of less than $5.00 per share or with an exercise price of less than $5.00 per share, subject to certain exceptions. For any transaction involving a penny stock, unless exempt, the rules require:

That a broker or dealer approve a person's account for transactions in penny stocks; and

The broker or dealer receives from the investor a written agreement to the transaction, setting forth the identity and quantity of the penny stock to be purchased.

In order to approve a person's account for transactions in penny stocks, the broker or dealer must:

Obtain financial information and investment experience objectives of the person; and

Make a reasonable determination that the transactions in penny stocks are suitable for that person and the person has sufficient knowledge and experience in financial matters to be capable of evaluating the risks of transactions in penny stocks.

The broker or dealer must also deliver, prior to any transaction in a penny stock, a disclosure schedule prescribed by the Commission relating to the penny stock market, which, in highlight form:

Sets forth the basis on which the broker or dealer made the suitability determination; and

That the broker or dealer received a signed, written agreement from the investor prior to the transaction.

Generally, brokers may be less willing to execute transactions in securities subject to the "penny stock" rules. This may make it more difficult for investors to dispose of our common stock and cause a decline in the market value of our stock.

Disclosure also has to be made about the risks of investing in penny stocks in both public offerings and in secondary trading and about the commissions payable to both the broker-dealer and the registered representative, current

quotations for the securities and the rights and remedies available to an investor in cases of fraud in penny stock transactions. Finally, monthly statements have to be sent disclosing recent price information for the penny stock held in the account and information on the limited market in penny stocks.

We have never declared or paid a cash dividend on our common stock and we do not expect to pay cash dividends on our common stock in the foreseeable future.

Our shares of Series D Convertible Preferred Stock are entitled to certain rights, privileges and preferences over our common stock, including a preference upon a liquidation of our Company, which will reduce amounts available for distribution to the holders of our common stock.

The holders of our shares of Series D are entitled to payment, prior to payment to the holders of common stock in the event of liquidation of the Company. If we are dissolved, liquidated or wound up at a time when the Series D Preferred Stock remain outstanding, the holders of the Series D Preferred Stock will be entitled to receive only an amount equal to the liquidation preference (as it may be adjusted from time to time), plus any accumulated and unpaid dividends, to the extent that we have funds legally available. Any remaining assets will be distributable to holders of our other equity securities.

Shares eligible* for *future sale may adversely affect the market.

From time to time, certain of our stockholders may be eligible to sell all or some of their shares of common stock by means of ordinary brokerage transactions in the open market pursuant to Rule 144 promulgated under the Securities Act, subject to certain limitations. In general, pursuant to amended Rule 144, non-affiliate stockholders may sell freely after six months subject only to the current public information requirement. Affiliates may sell after six months subject to the Rule 144 volume, manner of sale (for equity securities), current public information and notice requirements. Any substantial sales of our common stock pursuant to Rule 144 may have a material adverse effect on the market price of our common stock.

We currently do not intend to pay dividends on our common stock. As result, your only opportunity to achieve a return on your investment is if the price of our common stock appreciates.

We currently do not expect to declare or pay dividends on our common stock. In addition, in the future we may enter into agreements that prohibit or restrict our ability to declare or pay dividends on our common stock. As a result, your only opportunity to achieve a return on your investment will be if the market price of our common stock appreciates and you sell your shares at a profit.

We could issue additional common stock, which might dilute the book value of our Common Stock.

Our Board of Directors has authority, without action or vote of our shareholders, to issue all or a part of our authorized but unissued shares. Such stock issuances could be made at a price that reflects a discount or a premium from the then-current trading price of our common stock. In addition, in order to raise capital, we may need to issue securities that are convertible into or exchangeable for our common stock. These issuances would dilute the percentage ownership interest, which would have the effect of reducing your influence on matters on which our shareholders vote, and might dilute the book value of our common stock. You may incur additional dilution if holders of stock warrants or options, whether currently outstanding or subsequently granted, exercise their options, or if warrant holders exercise their warrants to purchase shares of our common stock.

Risks Related to the Offering

There can be no assurances that our shares and/or warrants will be listed on NASDAQ Capital Market and, if they are, our shares will be subject to potential delisting if we do not meet or continue to maintain the listing requirements of NASDAQ Capital Market.

We intend to apply to list the shares of our common stock on the NASDAQ Capital Market, or NASDAQ. An approval of our listing application by NASDAQ will be subject to, among other things, our fulfilling all of the listing requirements of NASDAQ. In addition, NASDAQ has rules for continued listing, including, without limitation, minimum market capitalization and other requirements. Failure to maintain our listing, or de-listing from NASDAQ, would make it more difficult for shareholders to dispose of our common stock and more difficult to obtain accurate price quotations on our common stock. This could have an adverse effect on the price of our common stock. Our ability to issue additional securities for financing or other purposes, or otherwise to arrange for any financing we may need in the future, may also be materially and adversely affected if our common stock is not traded on a national securities exchange.

In the event that our common stock and warrants are listed on the NASDAQ our stock price could fall and we could be delisted in which case broker-dealers may be discouraged from effecting transactions in shares of our common stock because they may be considered penny stocks and thus be subject to the penny stock rules.

The SEC has adopted a number of rules to regulate "penny stocks" that restricts transactions involving stock which is deemed to be penny stock. Such rules include Rules 3a51-1, 15g-1, 15g-2, 15g-3, 15g-4, 15g-5, 15g-6, 15g-7, and 15g-9 under the Securities and Exchange Act of 1934, as amended. These rules may have the effect of reducing the liquidity of penny stocks. "Penny stocks" generally are equity securities with a price of less than $5.00 per share (other than securities registered on certain national securities exchanges or quoted on the NASDAQ Stock Market if current price and volume information with respect to transactions in such securities is provided by the exchange or system). Our securities currently constitute, "penny stock" within the meaning of the rules. The additional sales practice and disclosure requirements imposed upon U.S. broker-dealers may discourage such broker-dealers from effecting transactions in shares of our common stock, which could severely limit the market liquidity of such shares and impede their sale in the secondary market.

A U.S. broker-dealer selling penny stock to anyone other than an established customer or "accredited investor" (generally, an individual with net worth in excess of $1,000,000 or an annual income exceeding $200,000, or $300,000 together with his or her spouse) must make a special suitability determination for the purchaser and must receive the purchaser's written consent to the transaction prior to sale, unless the broker-dealer or the transaction is otherwise exempt. In addition, the "penny stock" regulations require the U.S. broker-dealer to deliver, prior to any transaction involving a "penny stock", a disclosure schedule prepared in accordance with SEC standards relating to the "penny stock" market, unless the broker-dealer or the transaction is otherwise exempt. A U.S. broker-dealer is also required to disclose commissions payable to the U.S. broker-dealer and the registered representative and current quotations for the securities. Finally, a U.S. broker-dealer is required to submit monthly statements disclosing recent price information with respect to the "penny stock" held in a customer's account and information with respect to the limited market in "penny stocks".

Stockholders should be aware that, according to the SEC, the market for "penny stocks" has suffered in recent years from patterns of fraud and abuse. Such patterns include (i) control of the market for the security by one or a few broker-dealers that are often related to the promoter or issuer; (ii) manipulation of prices through prearranged matching of purchases and sales and false and misleading press releases; (iii) "boiler room" practices involving high-pressure sales tactics and unrealistic price projections by inexperienced sales persons; (iv) excessive and undisclosed bid-ask differentials and markups by selling broker-dealers; and (v) the wholesale dumping of the same securities by promoters and broker-dealers after prices have been manipulated to a desired level, resulting in investor losses. Our management is aware of the abuses that have occurred historically in the penny stock market. Although we do not expect to be in a position to dictate the behavior of the market or of broker-dealers who participate in the market, management will strive within the confines of practical limitations to prevent the described patterns from being established with respect to our securities.

Speculative Nature of Warrants

The warrants offered 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 acquire shares of our 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 the common stock and pay an exercise price of per share (% of public offering price of our common stock in this offering), prior to five years from the date of issuance, after which date any unexercised warrants will expire and have no further value. Moreover, following this offering, the market value of the warrants is uncertain and there can be no assurance that the market value of the warrants will equal or exceed their public offering price. There can be no assurance that the market price of the 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.

We have broad discretion in the use of the net proceeds from this offering and may not use them effectively.

Our management will have broad discretion in the application of the net proceeds, including for any of the purposes described in the section of this prospectus entitled “Use of Proceeds.” The failure by our management to apply these funds effectively could harm our business.

Sales of a substantial number of shares of our common stock following this offering may adversely affect the market price of our common stock and the issuance of additional shares will dilute all other shareholders.

Sales of a substantial number of shares of our common stock in the public market or otherwise following this offering, or the perception that such sales could occur, could adversely affect the market price of our common stock. After completion of this offering at an assumed offering price of $ per share, our existing stockholders will own approximately % of our common stock assuming there is no exercise of the underwriters’ over-allotment option.

After completion of this offering at an assumed offering price of $ per share there will be shares of our common stock outstanding. In addition, our certificate of incorporation, as amended, permits the issuance of up to approximately additional shares of common stock after the completion of this offering. Thus, we have the ability to issue substantial amounts of common stock in the future, which would dilute the percentage ownership held by the investors who purchase shares of our common stock in this offering.

We and our officers, directors and certain stockholders have agreed, subject to customary exceptions, not to, without the prior written consent of Joseph Gunnar & Co., LLC, the representative of the underwriters, during the period ending 180 days from the date of this offering in the case of our directors and officers and 90 days from the date of this offering in the case of us and our stockholders who beneficially own more than 5% of our common stock, directly or indirectly, offer to sell, sell, pledge or otherwise transfer or dispose of any of shares of our common stock, enter into any swap or other derivatives transaction that transfers to another any of the economic benefits or risks of ownership of shares of our common stock, make any demand for or exercise any right or cause to be filed a registration statement, including any amendments thereto, with respect to the registration of any shares of common stock or securities convertible into or exercisable or exchangeable for common stock or any other securities of the Company or publicly disclose the intention to do any of the foregoing.

After the lock-up agreements with our principal stockholders pertaining to this offering expire 90 days from the date of this offering unless waived earlier by the representative, up to of the shares that had been locked up will be eligible for future sale in the public market. After the lock-up agreements with our directors and officers pertaining to this offering expire 180 days from the date of this offering unless waived earlier by the managing underwriter, up to [ ] of the shares (net of any shares also restricted by lock-up agreements with our principal stockholders) that had been locked up will be eligible for future sale in the public market. Sales of a significant number of these shares of common stock in the public market could reduce the market price of the common stock.

The foregoing list is not all-inclusive. There can be no assurance that we have correctly identified and appropriately assessed all factors affecting our business or that the publicly available and other information with respect to these matters is complete and correct. Additional risks and uncertainties not presently known to us or that we currently believe to be immaterial may also adversely affect us. These developments could have material adverse effects on our business, financial condition, results of operations and liquidity. For these reasons, the reader is cautioned not to place undue reliance on our forward-looking statements.

Following this offering, the market value of the warrants is uncertain and there can be no assurance that the market value of the warrants will equal or exceed their public offering price.

The warrants offered 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 acquire shares of our 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 the common stock and pay an exercise price of 125% of the public offering price of our common stock in this offering, prior to five years from the date of issuance, after which date any unexercised warrants will expire and have no further value. Moreover, following this offering, the market value of the warrants is uncertain and there can be no assurance that the market value of the warrants will equal or exceed their public offering price. There can be no assurance that the market price of the 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.

USE OF PROCEEDS

We estimate that the net proceeds from the sale of the common stock and warrants in the offering will be approximately $ million, after deducting the underwriting discounts and commissions and estimated offering expenses, or $ million if the underwriters exercise their over-allotment option in full.

We currently expect to use the net proceeds of this offering primarily for the following purposes:

approximately $3,260,000 for the repayment of the following liabilities : (1) $540,000 owed to JMJ Financial (interest rate of 9% and maturity date of May 2017); (2) $110,000 owed to Gemini Master Fund (interest rate of 0%, however, there was an original investment discount of 10% and maturity date of October 2017); (3) $110,000 owed to Black Mountain Equities, Inc. (interest rate of 0%, however, there was an original investment discount of 10% and maturity date of October 2017); (4) $2,200,000 owed to the Investor pursuant to the Revolving Note (interest rate of 10% and maturity date of the earlier of October 28, 2017 or on the seventh business day after the closing of a qualified offering as defined in the Revolving Note) and the $250,000 advance received from the same investor on March 23, 2017 ; and (5) $250,000 owed to Bellridge Capital, LLC (interest rate of 10% and maturity date of November 2017). All of these liabilities will be completely repaid with the proceeds of this offering, were incurred after April 1, 2016, and were used for working capital, except for the $220,000 in loans from Gemini Master Fund and Black Mountain Equities, Inc which was used to repay $200,000 owed to Vision Capital LLC;

approximately $[ ] for research and development for new products and improvements to existing products including but not limited to hiring of key personnel, leasing of facilities, sub-contract costs associated with the design and development of robotics for the full automation of the PCT process, vitally-needed research equipment (e.g., a mass spectrometer), and material costs for research activities;

approximately $[ ] to upgrade sales and marketing capabilities, including but not limited to professional relations, advertising, and adding additional staff;

approximately $[ ] to pay for the purchase of raw materials and labor for manufacturing an estimated 50 Barocycler® 2320EXTREME instruments, 10 HUB440 instruments, 10 HUB880 instruments, 25 PCT Shredder units, and 10 re-designed Barozyme HT48 instruments;

approximately $[ ] to upgrade our operations capabilities, including but not limited to hiring of key technical services and light manufacturing personnel, additions to equipment and space, and equipment;

approximately $[ ] to hire a high level financial leader (CFO or VP of Finance) and at least one additional administrative staff member;

the remainder for working capital and other general corporate purposes.

We believe that the expected net proceeds from this offering and our existing cash and cash equivalents, together with interest thereon, will be sufficient to fund our operations for at least the next 24 months, although we cannot assure you that this will occur.

The amount and timing of our actual expenditures will depend on numerous factors, including the status of our development efforts, sales and marketing activities and the amount of cash generated or used by our operations. We may find it necessary or advisable to use portions of the proceeds for other purposes, and we will have broad discretion and flexibility in the application of the net proceeds. Pending these uses, the proceeds will be invested in short-term bank deposits.

MARKET FOR OUR COMMON STOCK AND RELATED STOCKHOLDER MATTERS

Market and Other Information

Our common stock is quoted on the OTC Markets Group Inc.'s OTCQB Link quotation platform (the "OTCQB") under the trading symbol "PBIO". We intend to apply to the NASDAQ Capital Market to list our common stock under the symbol "PBIO".

Immediately following this offering, we expect to have one class of common stock outstanding and one class of preferred stock outstanding. As of April 7 , 2017, there were approximately 217 holders of record of our common stock, and the last reported sale price of our common stock on the OTCQB was $0.31 per share.

Our common stock was initially quoted on the OTCQB in 2014 and the following table sets forth the high and low sales price of our common stock on the OTCQB for the last two fiscal years. These prices are based on inter-dealer bid and asked prices, without markup, markdown, commissions, or adjustments and may not represent actual transactions.

PERIOD	High	Low
Fiscal Year Ending December 31, 2016:		
Quarter Ended December 31, 2016	$0. 40	0. 18
Quarter Ended September 30, 2016	$0. 46	0.28
Quarter Ended June 30, 2016	$0. 58	0.26
Quarter Ended March 31, 2016	$0. 51	0.28
Fiscal Year Ended December 31, 2015:		
Quarter Ended December 31, 2015	$0.49	0.20
Quarter Ended September 30, 2015	$0.32	0.20
Quarter Ended June 30, 2015	$0.38	0.20
Quarter Ended March 31, 2015	$0.45	0.17

Dividend Policy

To date, we have not paid any dividends on our common stock and do not anticipate paying any such dividends in the foreseeable future. The declaration and payment of dividends on the common stock is at the discretion of our board of directors and will depend on, among other things, our operating results, financial condition, capital requirements, contractual restrictions or such other factors as our board of directors may deem relevant. We currently expect to use all available funds to finance the future development and expansion of our business and do not anticipate paying

dividends on our common stock in the foreseeable future.

CAPITALIZATION

The following table sets forth our consolidated cash and cash equivalents and capitalization as of December 31 , 2016. Such information is set forth on the following basis:

an actual basis;

an as adjusted basis, giving effect to advances from the Revolving Note in the amount of $750,000, less financing fees of $60,000, pursuant to the Revolving Loan in January and February 2017; and

a pro forma, as adjusted basis, giving effect to (i) the issuance of the Revolving Note in the amount of $750,000, less financing fees of $60,000, ((ii) the conversion of 300 shares of Series D Preferred Stock into approximately 750,000 shares of common stock, the conversion of 86,570 shares of Series G Preferred Stock into approximately 865,700 shares of common stock, the conversion of 10,000 shares of Series H Preferred Stock into approximately 1,000,000 shares of common stock, the conversion of 21 shares of Series H2 Preferred Stock into approximately 2,100,000 shares of common stock, the conversion of 3,521 shares of Series J Preferred Stock into approximately 3,521,000 shares of common stock and the conversion of 6,816 shares of Series K Preferred Stock into approximately 6,816,000 shares of common stock, (iii) the conversion of $7,803,045 of outstanding convertible notes (including convertible debentures) into approximately 26,733,955 shares of common stock and (iv) the sale by us of shares of common stock and warrants in this offering at an assumed public offering price of $ per share and $ per warrant after deducting underwriting discounts and commissions and estimated offering expenses.

The pro forma as adjusted information below is illustrative only and our capitalization following the completion of this offering will be adjusted based on the actual public offering price and other terms of this offering determined at pricing. You should read this table together with “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our audited and unaudited consolidated financial statements and the related notes appearing elsewhere in this prospectus.

	As of December 31, 2016		
	Actual	**As Adjusted**	**Pro forma, as Adjusted (1 (2)**
CURRENT ASSETS			
Cash and cash equivalents	$138,363	$ 828,363	$
Accounts receivable, net of $28,169 reserve at December 31, 2016	281,320	281,320	
Inventories, net of $20,000 reserve at December 31, 2016	905,284	905,284	
Prepaid income taxes	7,405	7,405	

Prepaid expenses and other current assets	258,103	258,103
Total current assets	1,590,475	2,280,475
Investment in available-for-sale equity securities	25,865	25,865
Property and equipment, net	9,413	9,413
Total Assets	1,625,753	2,315,753
Current liabilities:		
Accounts Payable	407,249	407,249
Accrued employee compensation	249,596	249,596
Accrued professional fees and other	956,884	956,884
Deferred revenue	159,654	159,654
Revolving note payable, net of unamortized debt discounts of $637,030	612,970	1,302,970
Convertible debt, net of unamortized discounts of $2,235,839	4,005,702	4,005,702
Other debt, net of unamortized discounts of $380	238,157	238,157
Warrant derivative liability	1,685,108	1,685,108
Conversion option derivative liability	951,059	951,059
Total current liabilities	9,266,379	9,956,379
Long term liabilities		
Related party convertible debt, net of unamortized debt discounts of $165,611	125,523	125,523
Convertible debt, net of unamortized discounts of $740,628	529,742	529,742
Deferred revenue	87,527	87,527
Total long term liabilities	742,792	742,792
Total liabilities	10,009,171	10,699,171

	As of December 31, 2016		
	Actual	**As Adjusted**	**Pro forma, as Adjusted (1) (2)**
Stockholders' equity (deficit):			
Series D Convertible Preferred Stock, $.01 par value; 850 shares authorized; 300 shares issued and outstanding on December 31, 2016 (Liquidation value of $300,000)	3	3	
Series G Convertible Preferred Stock, $.01 par value; 240,000 shares authorized; 86,570 shares issued and outstanding on December 31, 2016	866	866	
Series H Convertible Preferred Stock, $.01 par value; 10,000 shares authorized; 10,000 shares issued and outstanding on December 31, 2016	100	100	
Series H2 Convertible Preferred Stock, $.01 par value; 21 shares authorized; 21 shares issued and outstanding on December 31, 2016	-	-	
Series J Convertible Preferred Stock, $.01 par value; 6,250 shares authorized; 3,521 and 3,546 shares issued and outstanding on December 31, 2016	35	35	
Series K Convertible Preferred Stock, $.01 par value; 15,000 shares authorized; 6,816 and 11,416 shares issued and outstanding on December 31, 2016	68	68	
Common stock, $.01 par value; 100,000,000 shares authorized; 30,999,839 and 23,004,898 shares issued and outstanding on December 31, 2016	309,998	309,998	
Warrants to acquire common stock	6,325,102	6,325,102	
Additional paid-in capital	27,244,600	27,244,600	
Accumulated deficit	(42,264,190)	(42,264,190)	
Total stockholder's deficit	(8,383,418)	(8,383,418)	
Total liabilities and stockholders' deficit	$ 1,625,753	$ 2,315,753	$

(1) Excludes (i) 5,269,250 shares of our common stock issuable upon exercise of outstanding stock options at a weighted average exercise price of $0.42 per share as of December 31, 2016, (ii) 26,459,695 shares of our common stock issuable upon exercise of outstanding warrants at a weighted average exercise price of $0.40 per share as of December 31, 2016, (iii) 26,733,955 shares of common stock underlying convertible notes (including convertible debentures), (iv) 4,470,750 shares of common stock available for issuance under our equity incentive plans, (v) shares of common stock underlying the warrants to be issued to the underwriters in connection with this offering, and (vi) shares of common stock issuable upon the exercise of the underwriters' over-allotment option.

(2)

A $1.00 increase or decrease in the assumed public offering price per share would increase or decrease our pro forma cash and cash equivalents, additional paid-in capital, total stockholders' equity and total capitalization by approximately $ assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the underwriting discount and estimated offering expenses payable by us.

DILUTION

The historical net tangible book value (deficit) of our common stock as of December 31, 2016 was ($8,383,418), or $0.27 per share based upon shares of common stock outstanding on such date. Historical net tangible book value (deficit) per share represents the amount of our total tangible assets reduced by the amount of our total liabilities, divided by the total number of shares of common stock outstanding.

Our pro forma net tangible book value (deficit) of our common stock as of December 31, 2016 was ($8,383,418), or $0.11 per share. Pro forma net tangible book value (deficit) represents total tangible assets less total liabilities. Pro forma net tangible book value (deficit) per share represents pro forma net tangible book value divided by the total number of shares outstanding as of December 31, 2016, after giving effect to (i) the issuance of advances from the Revolving Note in the amount of $750,000 in January and February 2017, (iii) the conversion of 300 shares of Series D Preferred Stock into approximately 750,000 shares of common stock, the conversion of 86,570 shares of Series G Preferred Stock into approximately 865,700 shares of common stock, the conversion of 10,000 shares of Series H Preferred Stock into approximately 1,000,000 shares of common stock, the conversion of 21 shares of Series H2 Preferred Stock into approximately 2,100,000 shares of common stock, the conversion of 3,521 shares of Series J Preferred Stock into approximately 3,521,000 shares of common stock and the conversion of 6,816 shares of Series K Preferred Stock into approximately 6,816,000 shares of common stock, and (iv) the conversion of $7,803,045 of outstanding convertible notes (including convertible debentures) into approximately 26,733,955 shares of common stock.

After giving effect to the sale of shares of our common stock at an assumed public offering price of $0.31 per share of common stock (the last reported sale price of our common stock on the OTCQB on April 7 , 2017), and $ per warrant, after deducting the underwriting discounts and commissions and estimated offering costs payable by us, our as adjusted net tangible book value as of December 31, 2016, would have been approximately $ million, or $ per share of common stock. This represents an immediate increase in as adjusted net tangible book value of $ per share to existing stockholders and an immediate dilution of $ per share to investors purchasing shares of common stock in this offering at the assumed public offering price.

The following table illustrates this dilution on a per share basis to new investors:

	As of December 31, 2016	Pro Forma [1]
Assumed public offering price per share		
Net tangible book value per share as of December 31 , 2016	$ 0.27	$
Increase in pro forma net tangible book value per share attributable to new investors		$
Pro forma net tangible book value per share after giving effect to this offering		

Dilution in net tangible book value per share to new investors

(1) Calculated on a pro forma basis, giving effect to the conversion of all our outstanding shares of preferred stock into common stock.

The information above is as of December 31 , 2016 and excludes the following:

; and

If the underwriter's overallotment option is exercised, our adjusted pro forma net tangible book value following the offering will be $ per share, and the dilution to new investors in the offering will be $ per share.

A $1.00 increase or decrease in the assumed public offering price per share would increase or decrease our pro forma as adjusted net tangible book value after this offering by approximately $, and dilution per share to new investors by approximately $ for an increase of $1.00, or $( ) for a decrease of $1.00, after deducting the underwriting discount and estimated offering expenses payable by us.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements. Forward-looking statements give our current expectations or forecasts of future events. You can identify these statements by the fact that they do not relate strictly to historical or current facts. Forward-looking statements involve risks and uncertainties and include statements regarding, among other things, our projected revenue growth and profitability, our growth strategies and opportunity, anticipated trends in our market and our anticipated needs for working capital. They are generally identifiable by use of the words "may," "will," "should," "anticipate," "estimate," "plans," "potential," "projects," "continuing," "ongoing," "expects," "management b believe," "we intend" or the negative of these words or other variations on these words or comparable terminology. These statements may be found under the sections entitled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Business," as well as in this prospectus generally. In particular, these include statements relating to future actions, prospective products, market acceptance, future performance or results of current and anticipated products, sales efforts, expenses, and the outcome of contingencies such as legal proceedings and financial results. Such forward-looking statements include, without limitation, statements regarding:

- our need for, and our ability to raise, additional equity or debt financing on acceptable terms, if at all;
- our need to take additional cost reduction measures, cease operations or sell our operating assets, if we are unable to obtain sufficient additional financing;
- our belief that we have sufficient liquidity to finance normal operations;
- the options we may pursue in light of our financial condition;
- the amount of cash necessary to operate our business;
- the anticipated uses of grant revenue and the potential for increased grant revenue in future periods;
- our plans and expectations with respect to our continued operations;
- our belief that pressure cycling technology ("PCT") has achieved initial market acceptance in the mass spectrometry and other markets;
- the expected increase in the number of PCT and constant pressure based units installed and the increase in revenues from the sale of consumable products and extended service contracts;
- the expected development and success of new instrument and consumables product offerings;
- the potential applications for our instrument and consumables product offerings;
- the expected expenses of, and benefits and results from, our research and development efforts;
- the expected benefits and results from our collaboration programs, strategic alliances and joint ventures;

our expectation of obtaining additional research grants from the government in the future;

our expectations of the results of our development activities funded by government research grants;

the potential size of the market for biological sample preparation;

35

general economic conditions;

the anticipated future financial performance and business operations of our company;

our reasons for focusing our resources in the market for genomic, proteomic, lipidomic and small molecule sample preparation;

the importance of mass spectrometry as a laboratory tool;

the advantages of PCT over other current technologies as a method of biological sample preparation in biomarker discovery, forensics, and histology and for other applications;

the capabilities and benefits of our PCT sample preparation system, consumables and other products;

our belief that laboratory scientists will achieve results comparable with those reported to date by certain research scientists who have published or presented publicly on PCT and our other products;

our ability to retain our core group of scientific, administrative and sales personnel; and

our ability to expand our customer base in sample preparation and for other applications of PCT and our other products.

We operate in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for us to predict all of those risks, nor can we assess the impact of all of those risks on our business or the extent to which any factor may cause actual results to differ materially from those contained in any forward-looking statement. The forward-looking statements in this prospectus are based on assumptions management believes are reasonable. However, due to the uncertainties associated with forward-looking statements, you should not place undue reliance on any forward-looking statements. Further, forward-looking statements speak only as of the date they are made, and unless required by law, we expressly disclaim any obligation or undertaking to publicly update any of them in light of new information, future events, or otherwise.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis of the financial condition and results of our operations should be read in conjunction with our consolidated financial statements and the notes to those statements appearing elsewhere in this prospectus. This discussion and analysis contains forward-looking statements reflecting our management's current expectations that involve risks, uncertainties and assumptions. Our actual results and the timing of events may differ materially from those described in or implied by these forward-looking statements due to a number of factors, including those discussed below and elsewhere in this prospectus, particularly on page 16 entitled "Risk Factors".

Overview

We are focused on solving the challenging problems inherent in biological sample preparation, a crucial laboratory step performed by scientists worldwide working in biological life sciences research. Sample preparation is a term that refers to a wide range of activities that precede most forms of scientific analysis. Sample preparation is often complex, time-consuming and, in our belief, one of the most error-prone steps of scientific research. It is a widely-used laboratory undertaking – the requirements of which drive what we believe is a large and growing worldwide market. We have developed and patented a novel, enabling technology platform that can control the sample preparation process. It is based on harnessing the unique properties of high hydrostatic pressure. This process, which we refer to as PCT, uses alternating cycles of hydrostatic pressure between ambient and ultra-high levels i.e., 20,000 psi or greater to safely, conveniently and reproducibly control the actions of molecules in biological samples, such as cells and tissues from human, animal, plant and microbial sources.

PCT is an enabling platform technology based on a physical process that had not previously been used to control bio-molecular interactions. PCT uses internally developed instrumentation that is capable of cycling pressure between ambient and ultra-high levels at controlled temperatures and specific time intervals, to rapidly and repeatedly control the interactions of bio-molecules, such as proteins, DNA, RNA, lipids and small molecules. Our laboratory instrument family, the Barocycler®®, and our internally developed consumables product line, which include our unique MicroTubes, MicroCaps, MicroPestles, BaroFlex and PULSE® (Pressure Used to Lyse Samples for Extraction) Tubes, and application specific kits (containing consumable products and reagents), together make up our PCT SPS.

In 2015, together with an investment bank, we formed a subsidiary called Pressure BioSciences Europe ("PBI Europe") in Poland. We have 49% ownership interest with the investment bank retaining 51%. As of now, PBI Europe does not have any operating activities and we cannot reasonably predict when operations will commence. Therefore, we do not have control of the subsidiary and did not consolidate in our financial statements. PBI Europe did not have any operations in 2016 or in 2015.

Patents

PBI has 14 United States granted patents and 1 foreign granted patent (Japan: 5587770, EXTRACTION AND PARTITIONING OF MOLECULES) covering multiple applications of PCT in the life sciences field. PBI also has 19 pending patents in the USA, Canada, Europe, Australia, China, and Taiwan PCT employs a unique approach that we believe has the potential for broad use in a number of established and emerging life sciences areas, which include, but are not limited to:

biological sample preparation – including but not limited to sample extraction, homogenization, and digestion - in such study areas as genomic, proteomic, lipidomic, metabolomic and small molecule;

pathogen inactivation;

protein purification;

control of chemical reactions, particularly enzymatic; and

immunodiagnostics.

We are also the exclusive distributor, throughout the Americas, for CS cell disruption equipment, parts, and consumables. CS, a British company located several hours northwest of London, England, has been providing niche biomedical equipment, related consumable products, and services to a global client base since 1989. CS designs, develops, and manufactures high pressure cell disruption equipment required by life sciences laboratories worldwide, particularly disruption systems for the extraction of proteins. The CS equipment provides a constant and controlled cell disruptive environment, giving the user superior, constant, and reproducible results whatever the application. CS has over 900 units installed in over 40 countries worldwide. The CS cell disruption equipment has proven performance in the extraction of cellular components, such as protein from yeast, bacteria, mammalian cells, and other sample types.

The CS pressure-based cell disruption equipment and our PCT-based instrumentation complement each other in several important ways. While both the CS and our technologies are based on high pressure, each product line has fundamental scientific capabilities that the other does not offer. Our PCT Platform uses certain patented pressure mechanisms to achieve small-scale, molecular level effects. CS's technology uses different, proprietary pressure mechanisms for larger-scale, non-molecular level processing. In a number of routine laboratory applications, such as protein extraction, both effects can be critical to success. Therefore, for protein extraction and a number of other important scientific applications, we believe laboratories will benefit by using the CS and our products, either separately or together.

Primary Fields of Use and Application for PCT

Sample preparation is widely regarded as a significant impediment to research and discovery and sample extraction is generally regarded as one of the key parts of sample preparation. The process of preparing samples for genomic, proteomic, lipidomic, and small molecule studies includes a crucial step called sample extraction or sample disruption. This is the process of extracting biomolecules such as nucleic acid i.e., DNA and/or RNA, proteins, lipids, or small molecules from the plant or animal cells and tissues that are being studied. Our current commercialization efforts are based upon our belief that pressure cycling technology provides a superior solution for sample extraction when compared to other available technologies or procedures and thus might significantly improve the quality of sample preparation, and thus the quality of the test result.

Within the broad field of biological sample preparation, in particular sample extraction, we focus the majority of our PCT and constant pressure ("CP") product development efforts in three specific areas: biomarker discovery (primarily through mass spectrometric analysis), forensics and histology. We believe that our existing PCT and CP-based instrumentation and related consumable products fill an important and growing need in the sample preparation market for the safe, rapid, versatile, reproducible and quality extraction of nucleic acids, proteins, lipids, and small molecules

from a wide variety of plant, animal, and microbiological cells and tissues.

Biomarker Discovery - Mass Spectrometry

A biomarker is any substance (e.g., protein, DNA) that can be used as an indicator of the presence or absence of a particular disease-state or condition, and/or to measure the progression and effects of therapy. Biomarkers can help in the diagnosis, prognosis, therapy, prevention, surveillance, control, and cure of diseases and medical conditions.

A mass spectrometer is a laboratory instrument used in the analysis of biological samples, often focused on proteins, in life sciences research. It is frequently used to help discover biomarkers. According to a recently published market report by Transparency Market Research, “Spectrometry Market (Atomic, Molecular and Mass Spectrometry) - Global Scenario, Trends, Industry Analysis, Size, Share & Forecast 2011 – 2017,” the global spectrometry market was worth $10.2 billion in 2011 and is expected to reach $15.2 billion in 2017, growing at a compound annual growth rate of 6.9% from 2011 to 2017. In the overall global market, the North American market is expected to maintain its lead position in terms of revenue until 2017 and is expected to have approximately 36.2% of the market revenue share in 2017, followed next by Europe. We believe PCT and CP-based products offer significant advantages in speed and quality compared with current techniques used in the preparation of samples for mass spectrometry analysis.

Forensics

The detection of DNA has become a part of the analysis of forensic samples by laboratories and criminal justice agencies worldwide in their efforts to identify the perpetrators of violent crimes and missing persons. Scientists from the University of North Texas and Florida International University have reported improvements in DNA yield from forensic samples (e.g., bone and hair) when using the PCT platform in the sample preparation process. We believe that PCT may be capable of differentially extracting DNA from sperm cells and female epithelial cells captured in swabs collected from rape victims and subsequently stored in rape kits. We also believe that there are many completed rape kits that remain untested for reasons such as cost, time and quality of results. We further believe that the ability to differentially extract DNA from sperm and not epithelial cells could reduce the cost of such testing, while increasing the quality, safety and speed of the testing process.

Histology

The most commonly used technique worldwide for the preservation of cancer and other tissues for subsequent pathology evaluation is FFPE. We believe that the quality and analysis of FFPE tissues is highly problematic, and that PCT offers significant advantages over current processing methods, including standardization, speed, biomolecule recovery, and safety.

Our customers include researchers at academic laboratories, government agencies, biotechnology companies, pharmaceutical companies and other life science institutions in the United States, Europe, and in Asia. Our goal is to continue aggressive market penetration in these target groups. We also believe that there is a significant opportunity to sell and/or lease additional Barocycler® instrumentation to additional laboratories at current customer institutions.

If we are successful in commercializing PCT in applications beyond our current focus area of genomic, proteomic, lipidomic, and small molecule sample preparation, and if we are successful in our attempts to attract additional capital, our potential customer base could expand to include hospitals, reference laboratories, pharmaceutical manufacturing plants and other sites involved in each specific application. If we are successful in forensics, our potential customers could be forensic laboratories, military and other government agencies. If we are successful in histology (extraction of biomolecules from FFPE tissues), our potential customers could be pharmaceutical companies, hospitals, and laboratories focused on drug discovery or correlation of disease states.

We have experienced negative cash flows from operations with respect to our pressure cycling technology business since our inception. As of December 31 , 2016, we did not have adequate working capital resources to satisfy our current liabilities and as a result we have substantial doubt about our ability to continue as a going concern. Based on our current projections, including equity financing subsequent to December 31 , 2016, we believe we will have the

cash resources that will enable us to continue to fund normal operations into the foreseeable future.

The audit report issued by our independent registered public accounting firm on our audited consolidated financial statements for the fiscal year ended December 31, 2016 , contains an explanatory paragraph regarding our ability to continue as a going concern. The audit report issued by our independent registered public accounting firm for our financial statements for the fiscal year ended December 31, 2016 states that our auditing firm has substantial doubt in our ability to continue as a going concern due to the risk that we may not have sufficient cash and liquid assets to cover our operating and capital requirements for the next twelve-month period; and, if sufficient cash cannot be obtained, we would have to substantially alter, or possibly even discontinue, operations. The accompanying financial statements do not include any adjustments that might result from the outcome of this uncertainty.

The conditions described above could adversely affect our ability to obtain additional financing on favorable terms, if at all, and may cause investors to have reservations about our long-term prospects, and may adversely affect our relationships with customers. There can be no assurance that our auditing firm will not issue the same opinion in the future. If we cannot successfully continue as a going concern, our stockholders may lose their entire investment in us.

Results of Operations

Comparison for the year ended December 31, 2016 and 2015

Revenue

We had total revenue of $1,976,487, in the year ended December 31, 2016 as compared with $1,797,691 in the prior year, a 10% increase. The increase was due to product sales growth.

Products, Services, and Other. Revenue from the sale of products and services was $1,794,749 in the year ended December 31, 2016 compared with $1,409,991 in the year ended December 31, 2015, a 27% increase. Revenue included sales of both PBI and CS's pressure-based products. Sales of instrumentation increased in 2016 by $369,909, or 44%, from $835,611 for fiscal year 2015 to $1,205,520 for fiscal year 2016. Sales of consumables were $199,873 for the year ended December 31, 2016 compared to $146,408 for the same period in 2015, an increase of $53,465 or 37%. Products, Services, and Other Revenue included $63,956 from non-cash transactions in the current year while the prior year included non-cash transactions of $78,743. Revenue from non-cash transactions was recognized on the fair value of the assets involved per ASC 845.

Grant Revenue. During 2016, we recorded $181,738 of grant revenue as compared with $387,700 in 2015. In December 2014, the Company was awarded a $1,020,969 SBIR Phase II grant (2R44HG007136) from the National Human Genome Research Institute of the NIH. Entitled "High Pressure Sample Preparation Instrumentation for DNA Sequencing", this grant is helping to fund the development of an automated, high-throughput, high pressure system (instrument and consumables) to enable significantly better control of DNA fragmentation - a critical step in the preparation of samples for Next Generation Sequencing platforms. This system will be based on significant technological advancements over the classic hydrodynamic DNA shearing approach that has been successfully and widely used in the field of DNA sequencing for many years.

Cost of Products and Services

The cost of products and services was $834,012 for the year ended December 31, 2016, compared with $609,054 in 2015. Our gross profit margin on products and services was 58% for fiscal year 2016 vs. 66% for fiscal year 2015. The current year margin was affected by the transfer of personnel to operations from sales and marketing. The relationship between the cost of products and services and revenue depends greatly on the mix of instruments we sell, the quantity of such instruments, and the mix of consumable products and instrument accessories that we sell in a

given period.

Research and Development

Research and development expenditures were $1,183,011 for 2016 compared to $1,105,295 in 2015, an increase of $77,716 or 7%. This increase resulted primarily from the addition of a Ph.D. level electrical engineer, costs related to the continued development of an enhanced rape kit test based on the PCT Platform, and a rent increase related to additional R&D space. Research and development expense also included $65,500 and $50,617 of non-cash, stock-based compensation in 2016 and 2015, respectively.

Selling and Marketing

Selling and marketing expenses were $872,365 in 2016 compared to $745,574 in 2015, an increase of $126,791, or 17%. This increase is primarily attributed to an increase in employee staffing, collaboration activities, and rental space for product demonstrations. Selling and marketing expense included $42,314 and $32,704 of non-cash stock based compensation expense in 2016 and 2015, respectively.

General and Administrative

General and administrative costs were $2,822,752 in the year ended December 31, 2016, as compared with $2,902,950 in 2015, a decrease of $80,198 or 3%. This decrease was due primarily to credits received from charges incurred with a former professional service provider offset by additional stock-based compensation. During the years ended December 31, 2016 and 2015, general and administrative expense included $272,150 and $125,668 of non-cash, stock-based compensation expense, respectively.

Operating Loss

Our operating loss was $3,735,653 for the year ended December 31, 2016 as compared to $3,565,182 for the prior year, an increase of $170,471 or 5%. This increase in operating loss was due primarily to increases in R&D and Sales and Marketing expenses, off-set to a certain extent by an increase in total revenue.

Other income (expense), net

Interest Expense. Net interest expense totaled $4,501,186 for the year ended December 31, 2016 as compared to interest expense of $4,146,416 for the year ended December 31, 2015. In connection with loans issued in 2015 and 2016, we are amortizing deferred financing costs and imputed interest against the debt discount on loans.

Other income (expense) net

We recognized $1,112 in expense during 2016, compared to $36,879 of expense from the initial fair value calculation on the conversion option on our convertible debt instruments in 2015.

Impairment loss on investment

The value of our investment in the common stock of Everest Investments Holdings S.A. (“Everest”) has declined since the date of receipt of the stock in 2015. We evaluated the decline and considered it as an “other than temporary impairment” reduction. Thus, the impairment loss was recognized as a charge in the consolidated statements of operations. During 2016, we recorded total impairment losses related to $373,682 which represented the reduction in value of these securities.

Gain on extinguishment of embedded derivative liabilities

In connection with full payments of convertible debt, we recorded non-cash gains of $2,555,180 on short-term loans relating to the conversion options issued with the loans in 2015.

Change in fair value of derivative liabilities

During the year ended December 31, 2016, we recorded non-cash income of $5,904,649 from warrant and conversion option liability revaluations in our consolidated statements of operations due to a decrease in the fair value of the derivative warrants and the conversion option liabilities on our debt. This decrease in fair value was primarily due to a decrease in the price per share of our common stock. During the year ended December 31, 2015, we recorded non-cash charges of $2,222,001 for warrant and conversion option liability revaluations due to an increase in fair value of the liabilities.

Income Taxes

We did not record an income tax benefit or provision for the years ended December 31, 2016 or 2015.

Net Loss

During the year ended December 31, 2016, we recorded a net loss applicable to common stockholders of $2,706,984 or $(0.10) per share, as compared with $7,438,492 or $(0.36) per share during the year ended December 31, 2015. This decrease in net loss is primarily attributable to the current year non-cash income from warrant and conversion option liability revaluations.

LIQUIDITY AND CAPITAL RESOURCES

We have experienced negative cash flows from operations with respect to our pressure cycling technology business since our inception. As of December 31, 2016, we did not have adequate working capital resources to satisfy our current liabilities. We have been successful in raising cash through debt and equity offerings in the past. We issued a promissory note in the aggregate principal amount of up to $2,000,000 in October 2016 that we could draw funds from, and, through March 1, 2017, we have drawn down the entire $2 million ($750,000 subsequent to December 31, 2016). We have efforts in place to continue to raise cash through debt and equity offerings.

We will need substantial additional capital to fund our operations in future periods. In the event that we are unable to obtain financing on acceptable terms, or at all, we will likely be required to cease our operations, pursue a plan to sell our operating assets, or otherwise modify our business strategy, which could materially harm our future business prospects.

41

Net cash used in operating activities was $3,805,851 for the year ended December 31, 2016 as compared with $3,819,746 for the year ended December 31, 2015. Our accounts payable balance was $407,249 as of December 31, 2016, as compared with $941,389 as of December 31, 2015, a decrease of 57% from 2015. Accounts payable should continue to become more current as we continue to secure more capital and funds from operations; this should allow for more timely payments to our vendors.

We invested $7,203 in fixed assets during the year ended December 31, 2016 as compared with $9,412 investment in fixed assets in the prior year.

Net cash provided by financing activities for the year ended December 31, 2016 was $3,834,634 as compared with $3,471,993 in the prior year.

In 2016,

A $2,105,420 in aggregate net proceeds were raised from sales of convertible debentures and $107,000 payments were made for convertible debt.

B Loans in the aggregate amount of $1,022,784 were received during the year and we made payments on new and existing debt of $947,702.

C From August 29 through December 31, 2016, we completed five tranches of a private placement, pursuant to which we sold and issued an aggregate of 1,525,000 shares of common stock, with a purchase price of $0.40 per share, resulting in net proceeds to us of $530,965.

D $1,133,500 in aggregate net proceeds were drawn down from a revolving note facility.

E $116,667 net proceeds were received from related party debt and we made payments of $20,000.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements as of December 31 , 2016 and December 31, 2015.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

While our significant accounting policies are more fully described in Note 3 to our audited financial statements appearing elsewhere in this prospectus, we believe that the following accounting policies are the most critical for fully understanding and evaluating our financial condition and results of operations.

Use of Estimates

To prepare our consolidated financial statements in conformity with accounting principles generally accepted in the United States of America, we are required to make significant estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. In addition, significant estimates were made in projecting future cash flows to quantify impairment of assets, deferred tax assets, the costs associated with fulfilling our warranty obligations for the instruments that we sell, and the estimates employed in our calculation of fair value of stock options awarded. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results could differ from the estimates and assumptions used.

Revenue Recognition

We recognize revenue in accordance with FASB ASC 605, *Revenue Recognition*. Revenue is recognized when realized or when realizable and earned when all the following criteria have been met: persuasive evidence of an arrangement exists; goods were shipped, delivery of service has occurred and risk of loss has passed to the customer; the seller’s price to the buyer is fixed or determinable; and collectability is reasonably assured.

Our current Barocycler® instruments require a basic level of instrumentation expertise to set-up for initial operation. To support a favorable first experience for our customers, upon customer request, and for an additional fee, will send a highly trained technical representative to the customer site to install Barocycler®s that we sell, lease, or rent through our domestic sales force. The installation process includes uncrating and setting up the instrument, followed by introductory user training. Product revenue related to current Barocycler® instrumentation and Constant Systems products is recognized upon shipment of the unit. In the case where the customer requests installation and training, the additional revenue related to the installation and training is recognized upon the completion of the installation and introductory training process of the instrumentation at the customer location. Product revenue related to sales of PCT instrumentation to our foreign distributors is recognized upon shipment through a common carrier. We provide for the expected costs of warranty upon the recognition of revenue for the sales of our instrumentation. Our sales arrangements do not provide our customers with a right of return. Product revenue related to our consumable products such as PULSE® Tubes, MicroTubes, and application specific kits is recorded upon shipment through a common carrier. Shipping costs are included in sales and marketing expense. Any shipping costs billed to customers are recognized as revenue.

42

We apply ASC 845, “Accounting for Non-Monetary Transactions”, to account for products and services sold through non-cash transactions based on the fair values of the products and services involved, where such values can be determined. Non-cash exchanges would require revenue to be recognized at recorded cost or carrying value of the assets or services sold if any of the following conditions apply:

a) The fair value of the asset or service involved is not determinable.

b) The transaction is an exchange of a product or property held for sale in the ordinary course of business for a product or property to be sold in the same line of business to facilitate sales to customers other than the parties to the exchange.

c) The transaction lacks commercial substance.

We currently record revenue for its non-cash transactions at recorded cost or carrying value of the assets or services sold.

In accordance with FASB ASC 840, *Leases*, we account for our lease agreements under the operating method. We record revenue over the life of the lease term and we record depreciation expense on a straight-line basis over the thirty-six month estimated useful life of the Barocycler® instrument. The depreciation expense associated with assets under lease agreement is included in the “Cost of PCT products and services” line item in our accompanying consolidated statements of operations. Many of our lease and rental agreements allow the lessee to purchase the instrument at any point during the term of the agreement with partial or full credit for payments previously made. We pay all maintenance costs associated with the instrument during the term of the leases.

Revenue from government grants is recorded when expenses are incurred under the grant in accordance with the terms of the grant award.

Revenue from the sale of CS’ cell disruption equipment, parts, and consumables is recognized when products are shipped.

Deferred revenue represents amounts received from grants and service contracts for which the related revenues have not been recognized because one or more of the revenue recognition criteria have not been met. Revenue from service contracts is recorded ratably over the length of the contract.

Our transactions sometimes involve multiple elements i.e., products and services. Revenue under multiple element arrangements is recognized in accordance with FASB ASC 605-25 *Multiple-Element Arrangements (“ASC 605”).* When vendor specific objective evidence or third party evidence of selling price for deliverables in an arrangement

cannot be determined, we Company develop a best estimate of the selling price to separate deliverables, and allocates arrangement consideration using the relative selling price method. Additionally, this guidance eliminates the residual method of allocation. If an arrangement includes undelivered elements that are not essential to the functionality of the delivered elements, we defer the fair value of the undelivered elements with the residual revenue allocated to the delivered elements. Fair value is determined based upon the price charged when the element is sold separately. If there is not sufficient evidence of the fair value of the undelivered elements, no revenue is allocated to the delivered elements and the total consideration received is deferred until delivery of those elements for which objective and reliable evidence of the fair value is not available. We provide certain customers with extended service contracts with revenue recognized ratably over the life of the contract.

Warrant Derivative Liability

The warrants issued in November 2011 in connection with the registered direct offering of Series D Convertible Preferred Stock (the “Series D Warrants”) and the warrants issued in 2015 and 2016 in connection with the $6.3 million PIPE convertible debentures (the “Debenture Warrants”) are measured at fair value and liability-classified because the Series D Warrants Debenture Warrants contained “down-round protection” and therefore, did not meet the scope exception for treatment as a derivative under ASC 815, *Derivatives and Hedging*. Since “down-round protection” is not an input into the calculation of the fair value of the warrants, the warrants cannot be considered indexed to the Company’s own stock which is a requirement for the scope exception as outlined under ASC 815. The estimated fair value of the warrants was determined using the binomial model, resulting in an allocation of the gross proceeds of $283,725 to the warrants issued in the Series D registered direct offering.

In connection with the sale of convertible debentures in 2015 and 2016, the estimated fair value of the warrants was determined using the binomial model, resulting in an allocation of the gross proceeds of $2,847,624 to the warrants issued with convertible debentures. The fair value will be affected by changes in inputs to that model including our stock price, expected stock price volatility, the contractual term, and the risk-free interest rate. We will continue to classify the fair value of the warrants as a liability until the warrants are exercised, expire or are amended in a way that would no longer require these warrants to be classified as a liability, whichever comes first.

The down-round protection for the Debenture Warrants and Series D Warrants survives for the life of the Warrants. The down-round protection for the Series D Warrants ends in May 2017.

Conversion Option Liability

We have signed convertible notes and have determined that conversion options are embedded in the notes and it is required to bifurcate the conversion option from the host contract under ASC 815 and account for the derivatives at fair value. The estimated fair value of the conversion options was determined using the binomial model. The fair value of the conversion options will be classified as a liability until the debt is converted by the note holders or paid back by the Company. The fair value will be affected by changes in inputs to that model including our stock price, expected stock price volatility, the contractual term, and the risk-free interest rate. We will continue to classify the fair value of the conversion options as a liability until the conversion options are exercised, expire or are amended in a way that would no longer require these conversion options to be classified as a liability, whichever comes first. We have adopted a sequencing policy that reclassifies contracts (from equity to liabilities) with the most recent inception date first. Thus any available shares are allocated first to contracts with the most recent inception dates.

Accounts Receivable and Allowance for Doubtful Accounts

We maintain allowances for estimated losses resulting from the inability of our customers to make required payments. Judgments are used in determining the allowance for doubtful accounts and are based on a combination of factors. Such factors include historical collection experience, credit policy and specific customer collection issues. In circumstances where we are aware of a specific customer’s inability to meet its financial obligations to us (e.g., due to a bankruptcy filing), we record a specific reserve for bad debts against amounts due to reduce the net recognized receivable to the amount we reasonably believe will be collected. We perform ongoing credit evaluations of our customers and continuously monitor collections and payments from our customers. While actual bad debts have historically been within our expectations and the provisions established, we cannot guarantee that we will continue to experience the same bad debt rates that we have in the past. A significant change in the liquidity or financial position of any of our customers could result in the uncollectability of the related accounts receivable and could adversely impact our operating cash flows in that period.

Inventories

Inventories are valued at the lower of cost (average cost) or market (sales price). The cost of Barocyclers consists of the cost charged by the contract manufacturer. The cost of manufactured goods includes material, freight-in, direct labor, and applicable overhead. In assessing the ultimate realization of inventories, management judgment is required to determine the reserve for obsolete or excess inventory. Inventory on hand may exceed future demand either because the product is obsolete, or because the amount on hand is more than can be used to meet future needs. We provide for the total value of inventories that we determine to be obsolete or excess based on criteria such as customer demand and changing technologies. We historically have not experienced significant inaccuracies in computing our reserves for obsolete or excess inventory.

Equity Transactions

We evaluate the proper classification of our equity instruments that embody an unconditional obligation requiring the issuer to redeem it by transferring assets at a determinable date or that contain certain conditional obligations, typically classified as equity, be classified as a liability. We record financing costs associated with our capital raising efforts in our statements of operations. These include amortization of debt issue costs such as cash, warrants and other securities issued to finders and placement agents, and amortization of preferred stock discount created by in-the-money conversion features on convertible debt and allocates the proceeds amongst the securities based on relative fair values or based upon the residual method. We based our estimates and assumptions on the best information available at the time of valuation; however, changes in these estimates and assumptions could have a material effect on the valuation of the underlying instruments.

Stock-Based Compensation

We account for employee and non-employee director stock-based compensation using the fair value method of accounting. Compensation cost arising from stock options to employees and non-employee directors is recognized using the straight-line method over the vesting period, which represents the requisite service or performance period. The calculation of stock-based compensation requires us to estimate several factors, most notably the term, volatility and forfeitures. We estimate the option term using historical terms and estimate volatility based on historical volatility of our common stock over the option’s expected term. Expected forfeitures based on historical forfeitures are used in calculating the expense related to stock-based compensation associated with stock awards. Our estimates and assumptions are based on the best information available at the time of valuation; however, changes in these estimates and assumptions could have a material effect on the valuation of the underlying instruments.

BUSINESS

We were incorporated in the Commonwealth of Massachusetts in August 1978 as Boston Biomedica, Inc. In September 2004, we completed the sale of Boston Biomedica's core business units and began to focus exclusively on the development and commercialization of the PCT platform. Following this change in business strategy, Boston Biomedica, Inc.'s name was changed to Pressure BioSciences, Inc. Operations began as PBI in February 2005, research and development activities in April 2006, early marketing and selling activities of our initial Barocycler® instrument in late 2007, and earnest marketing and selling of our PCT-based instrument platform in 2012.

During its early development, under the legacy business of Boston Biomedica, Inc., our scientists were researching and developing applications of the PCT platform in many areas of the life sciences, including proteomics, genomics, lipidomics, and small molecule sample preparation. The data generated during these early years, combined with the data generated since we began focusing on PCT operations in February 2005, form the basis of knowledge that we believe will allow us to successfully commercialize the PCT platform both within and outside of the sample preparation market.

We are focused on solving the challenging problems inherent in biological sample preparation, a crucial laboratory step performed by scientists worldwide working in biological life sciences research. Sample preparation is a term that refers to a wide range of activities that precede most forms of scientific analysis. Sample preparation is often complex, time-consuming and, in our belief, one of the most error-prone steps of scientific research. It is a widely-used laboratory undertaking – the requirements of which drive what we believe is a large and growing worldwide market. We have developed and patented a novel, enabling technology platform that can control the sample preparation process. It is based on harnessing the unique properties of high hydrostatic pressure. This process, called PCT, uses alternating cycles of hydrostatic pressure between ambient and ultra-high levels i.e., 20,000 psi or greater to safely, conveniently and reproducibly control the actions of molecules in biological samples, such as cells and tissues from human, animal, plant and microbial sources.

PCT is an enabling platform technology based on a physical process that had not previously been used to control bio-molecular interactions. PCT uses internally developed instrumentation that is capable of cycling pressure between ambient and ultra-high levels at controlled temperatures and specific time intervals, to rapidly and repeatedly control the interactions of bio-molecules, such as proteins, DNA), RNA, lipids and small molecules. Our laboratory instrument family, the Barocycler®®, and our internally developed consumables product line, which include our unique MicroTubes, MicroCaps, MicroPestles, BaroFlex and PULSE® (Pressure Used to Lyse Samples for Extraction) Tubes, and application specific kits (containing consumable products and reagents), together make up our PCT SPS.

In 2015, together with an investment bank, we formed a subsidiary called Pressure BioSciences Europe ("PBI Europe") in Poland. We have 49% ownership interest with the investment bank retaining 51%. PBI Europe did not have any

operating activities in 2016 and we cannot reasonably predict when operations will commence. Because we don't have control of the subsidiary, we did not consolidate them in our financial statements.

Patents

PBI has 14 United States granted patents and 1 foreign granted patent (Japan: 5587770, EXTRACTION AND PARTITIONING OF MOLECULES) covering multiple applications of PCT in the life sciences field. PBI also has 19 pending patents in the USA, Canada, Europe, Australia, China, and Taiwan PCT employs a unique approach that we believe has the potential for broad use in a number of established and emerging life sciences areas, which include, but are not limited to:

biological sample preparation – including but not limited to sample extraction, homogenization, and digestion - in such study areas as proteomics, genomics, lipidomics, metabolomics, and small molecules;

pathogen inactivation;

protein purification;

control of chemical reactions, particularly enzymatic;

immunodiagnostics.

Primary Fields of Use and Applications for PCT

Sample preparation is widely regarded as a significant impediment to research and discovery and sample extraction is generally regarded as one of the key parts of sample preparation. The process of preparing samples for genomic, proteomic, lipidomic, and small molecule studies includes a crucial step called sample extraction or sample disruption. This is the process of extracting biomolecules such as nucleic acid i.e., DNA and/or RNA, proteins, lipids, or small molecules from the plant or animal cells and tissues that are being studied. Our current commercialization efforts are based upon our belief that pressure cycling technology provides a superior solution for sample extraction when compared to other available technologies or procedures and thus might significantly improve the quality of sample preparation, and thus the quality of the test result.

Within the broad field of biological sample preparation, in particular sample extraction, we focus the majority of our PCT and CP product development efforts in three specific areas: biomarker discovery (primarily through mass spectrometric analysis), forensics and histology. We believe that our existing PCT and CP-based instrumentation and related consumable products fill an important and growing need in the sample preparation market for the safe, rapid, versatile, reproducible and quality extraction of nucleic acids, proteins, lipids, and small molecules from a wide variety of plant, animal, and microbiological cells and tissues.

Biomarker Discovery - Mass Spectrometry

A biomarker is any substance (e.g., protein, DNA) that can be used as an indicator of the presence or absence of a particular disease-state or condition, and/or to measure the progression and effects of therapy. Biomarkers can help in the diagnosis, prognosis, therapy, prevention, surveillance, control, and cure of diseases and medical conditions.

A mass spectrometer is a laboratory instrument used in the analysis of biological samples, often focused on proteins, in life sciences research. It is frequently used to help discover biomarkers. According to a recently published market report by Transparency Market Research, “Spectrometry Market (Atomic, Molecular and Mass Spectrometry) - Global Scenario, Trends, Industry Analysis, Size, Share & Forecast 2011 – 2017,” the global spectrometry market was worth $10.2 billion in 2011 and is expected to reach $15.2 billion in 2017, growing at a compound annual growth rate of 6.9% from 2011 to 2017. In the overall global market, the North American market is expected to maintain its lead position in terms of revenue until 2017 and is expected to have approximately 36.2% of the market revenue share in

2017, followed next by Europe. We believe PCT and CP-based products offer significant advantages in speed and quality compared with current techniques used in the preparation of samples for mass spectrometry analysis.

Forensics

The detection of DNA has become a part of the analysis of forensic samples by laboratories and criminal justice agencies worldwide in their efforts to identify the perpetrators of violent crimes and missing persons. Scientists from the University of North Texas and Florida International University have reported improvements in DNA yield from forensic samples (e.g., bone and hair) when using the PCT platform in the sample preparation process. We believe that PCT may be capable of differentially extracting DNA from sperm cells and female epithelial cells captured in swabs collected from rape victims and subsequently stored in rape kits. We also believe that there are many completed rape kits that remain untested for reasons such as cost, time and quality of results. We further believe that the ability to differentially extract DNA from sperm and not epithelial cells could reduce the cost of such testing, while increasing the quality, safety and speed of the testing process.

Histology

The most commonly used technique worldwide for the preservation of cancer and other tissues for subsequent pathology evaluation is FFPE. We believe that the quality and analysis of FFPE tissues is highly problematic, and that PCT offers significant advantages over current processing methods, including standardization, speed, biomolecule recovery, and safety.

Other Fields of Use and Applications for PCT

Our research and development efforts have shown that, in addition to genomic, proteomic, lipidomic, and small molecule sample preparation, PCT is potentially beneficial in a number of other areas of the life sciences, including pathogen inactivation, protein purification, control of chemical (particularly enzymatic) reactions, and immunodiagnostics. Other applications in the sample preparation market include forensics and histology, as discussed above. Our pursuit of these markets, however, depends on a number of factors, including our success in commercializing PCT in the area of sample preparation, our judgment regarding the investment required to be successful in these areas, the value of these markets to PBI, and the availability of sufficient financial resources. Below is a brief explanation of each of these additional potential applications and a short description of why we believe PCT can be used to improve scientific studies in these areas.

Pathogen Inactivation

Biological products intended for human use, such as blood, vaccines and drugs, are put through rigorous processing protocols in an effort to minimize the potential of that product to transmit disease. These protocols may include methods to remove infectious materials such as pre-processing testing, filtration or chromatography, or methods to inactivate infectious agents that are not captured in the removal steps such as pasteurization, irradiation and solvent detergent inactivation. Notwithstanding current diligence in both the removal and inactivation steps, significant concern remains that some pathogens (e.g., bacteria and viruses) capable of transmitting infection to recipients may not be removed or inactivated with current procedures. In addition, some removal and inactivation methods may not be useful because of cost, safety, ease-of-use or other practical concerns. To that end, we believe that a new inactivation method is needed that can safely, rapidly and inexpensively inactivate pathogens in blood, vaccines and drugs without the need for chemical or other potentially toxic additives. We believe we have successfully generated proof-of-concept that PCT can satisfy this need. We believe that compared with current procedures, a process that uses PCT has the potential to increase safety and yield, lower cost and decrease the potential side effects of current methods. We have been issued U.S. patents for this PCT-dependent inactivation technology.

Protein Purification

Many vaccines and drugs are comprised of proteins. These proteins need to be purified from complex mixtures as part of the manufacturing process. Current purification techniques often result in the loss of a significant amount of the protein. Therefore, any method that could increase the amount of protein being recovered in the purification step, could subsequently lead to a reduction in cost to the manufacturer. We believe we have successfully generated proof-of-concept that PCT can satisfy this need. We believe that compared with current purification procedures, a process that uses PCT has the potential to increase protein recovery, increase the quality of the product, and lower production costs. We have been issued U.S. and in this area.

Control of Chemical (Particularly Enzymatic) Reactions

Chemical reactions encompass many important interactions in nature. Methods used to control chemical reactions could have a positive effect on the quality, speed, and overall result of the reaction. The control and detection of chemical reactions is particularly useful in the biotechnology field for synthesizing and characterizing such molecules as nucleic acids and polypeptides. We believe that PCT offers distinct advantages in controlling chemical reactions over current methods, since PCT can provide precise, automated control over the timing and synchronization of chemical reactions, particularly enzymatic reactions. We have been issued U.S patents in this area.

Immunodiagnostics

Many tests used in the clinical laboratory today are based on the formation of a complex between two proteins, such as an antigen and an antibody. Such "immunodiagnostic" methods are used for the detection of infectious agents such as the human immunodeficiency virus ("*HIV*"), hepatitis viruses, West Nile virus, and others, as well as for endocrine, drug testing and cancer diagnostics. We have generated proof-of-concept that PCT may be used to control biomolecular interactions between proteins, such as antigens and antibodies. We believe this capability may provide a greater degree of sensitivity and quantitative accuracy in immunodiagnostic testing than that offered by methods that are available today. We have been issued U.S. patents in this area.

Company Products

We believe our PCT and CP products allow researchers to improve scientific research studies in the life sciences field. Our products are developed with the expectation of meeting or exceeding the needs of research scientists while enhancing the safety, speed and quality that is available to them with existing sample preparation methods.

Barocycler® Instrumentation

Our Barocycler® product line consists of laboratory instrumentation that subjects a sample to cycles of pressure from ambient to ultra-high levels (20,000 psi or greater) and then back to ambient, in a precisely controlled manner.

Our instruments (the 2320EXT, the Barozyme-HT48, the Barocycler® NEP3229, the HUB440 and the HUB880) use cycles of high, hydrostatic pressure to quickly and efficiently break up the cellular structures of a specimen to release proteins, nucleic acids, lipids and small molecules from the specimen into our consumable processing tubes, referred to as our PULSE® Tubes and MicroTubes. Our instruments have temperature control options (on-board heating or chilling and heating via external circulating water-bath), automatic fill and dispensing valves, and an integrated micro-processor keypad or a laptop computer. The microprocessor or laptop computer are capable of saving specific PCT protocols, so the researcher can achieve maximum reproducibility for the preparation of nucleic acids, proteins, lipids, or small molecules from various biological samples. Our Barocycler® instruments and our consumable products make up our PCT Sample Preparation System.

Barocycler® 2320EXT - The Barocycler® 2320EXT weighs approximately 80lbs, has a maximum pressure of 45,000 psi, and can process either up to 16 MicroTubes simultaneously or 1 PULSE® Tube. The working temperature range is 4 – 95ºC and is controlled via an on-board electric heating jacket or external circulating water bath. All tests are

entered and recorded on a touch screen interface. Information from each test runs (pressure profile, cycle number, and temperature) is recorded and can be stored on the instrument, on a USB drive, or networked into the user's lab. Pressure profiles can be manipulated in a number of ways, including static high pressure holds and pressure ramp programs. The Barocycler® 2320EXT is pneumatic, and requires an input air source of 100psi to reach and cycle at high pressure.

The Barocycler® 2320EXT was developed to support the PCT-HD/PCT-SWATH application. PCT-HD enables faster, less cumbersome and higher quality processing of biopsy tissues. With homogenization, extraction, and digestion of proteins occurring in a single PCT MicroTube under high pressure. This protocol can yield analytical results in under 4 hours from the start of processing tissues. PCT-HD was developed by our scientists and engineers in collaboration with Professor Ruedi Aebersold and Dr. Tiannan Guo of the Institute of Molecular Systems Biology, ETH Zurich, and the University of Zurich, both in Zurich, Switzerland. Drs. Aebersold and Guo combined PCT-HD with SCIEX's SWATH-Mass Spectrometry – calling the resulting method "PCT-SWATH".

Barocycler® NEP3229 – The Barocycler® NEP3229 contains two units – a user interface and a power source – comprised primarily of a 1.5 horsepower motor and pump assembly (hydraulic). Combined, the two components of the NEP3229 weigh approximately 350 pounds. The Barocycler® NEP3229 is capable of processing up to three samples simultaneously using our specially designed, single-use PULSE® Tubes and up to 48 samples simultaneously using our specially-designed MicroTubes.

Barozyme HT48 - The Barozyme HT48 is a high throughput, bench-top instrument designed for accelerated enzymatic digestion of proteins at high pressure. A typical protein digestion time using the enzyme trypsin (a common yet important laboratory procedure) can be reduced from often requiring an overnight incubation to get to completion to under one hour when the digestion procedure is carried out under PCT. The Barozyme HT48 uses an air-pressure-to-liquid-pressure proprietary intensifier system, with a pressure amplification ratio of 160:1, to reach an output pressure of 20,000 psi. The Barozyme HT48 is capable of processing up to 48 samples at a time in six single-use BaroFlex 8-well Strips in the Barozyme Sample Carrier.

Barocycler® HUB440 –We believe the Barocycler® HUB440 is the first portable, ready to use, “plug-and-play” high pressure generator for the laboratory bench. The Barocycler® HUB440 is capable of creating and controlling hydrostatic pressure from 500 psi to 58,000 psi. It is computer controlled and runs on software that was specially-written by us in LabVIEW (software from National Instruments Corporation). We own the rights and have a license to use the specialty LabVIEW software. We believe that over the coming years, the Barocycler® HUB440 may become the main instrument in our pressure-based instrument line.

Barocycler® HUB880 - The Barocycler® HUB880 is one of our new instruments; it is expected to be available for sale during the first six months of 2017. It is a compact, portable, bench-top, ultra-high pressure generator that uses an air pressure-to-liquid pressure intensifier allowing the user to generate fluid pressure as high as 90,000 psi with input air pressure of just 126 psi. The HUB880 can be operated through a simple front panel or controlled using an optional external Data Acquisition and Control Module for dynamic pressure control. We believe that the HUB880 will be well accepted by scientists that need to achieve super high pressure, such as those working in the food safety and vaccine industries.

The Shredder SG3 –The Shredder SG3 is a low shear mechanical homogenization system for use with tough, fibrous and other difficult-to-disrupt tissues and organisms. The Shredder SG3 System uses a variety of Shredder PULSE® Tubes to directly and rapidly grind a biological sample which, when combined with selected buffers, can provide effective extraction of proteins, DNA, RNA, lipids and small molecules from tissues and organisms. The Shredder SG3 is also used to isolate intact and functional mitochondria from tissues. The Shredder SG3 features a three position force setting lever, which enables the operator to select and apply reproducible force to the sample during the shredding process and eliminates the need for the operator to exert force for long periods when processing one or more samples.

Barocycler® Consumable Products

PCT MicroTubes – PCT MicroTubes are made from a unique fluoropolymer, fluorinated ethylene propylene (FEP). FEP is highly inert and retains its integrity within an extremely wide temperature range (-200ºC to +100ºC). MicroTubes hold a maximum total volume of 150 microliters. PCT MicroTubes must be used with either PCT-MicroCaps or PCT-MicroPestles.

PCT-MicroCaps – PCT MicroCaps are made from polytetraflouroethylene (PTFE). The PCT MicroCaps are available in three sizes to accommodate total sample volume: 50, 100 and 150uL. 50uL MicroCaps are used with samples ≤50uL, 100uL MicroCaps are used with samples between 50-100uL, and 150uL MicroCaps are used with samples between 100-150uL.

PCT-Micro-Pestle - PCT µPestles are made from Polytetrafluoroethylene (PTFE), a synthetic fluoropolymer of tetrafluoroethylene, also known as Teflon (by DuPont Co). PTFE is practically inert; the only chemicals known to affect it are certain alkali metals and most highly-reactive fluorinating agents. PCT µPestles, in conjunction with PCT MicroTubes, are designed to enhance the extraction of protein, DNA, RNA and small molecules from minute amounts (0.5 – 3.0 mg) of solid tissue in extraction reagent volumes as low as 20-30 µL. PCT MicroTubes and PCT µPestles use Pressure Cycling Technology (PCT) to effectively disrupt soft tissues and lyse their cells. As a result, the tissue sample trapped between the MicroTube end and the µPestles tip is crushed on every pressure cycle. This mechanical action, combined with the extraction ability of the buffer under high pressure, results in highly effective tissue homogenization and extraction.

PCT µPestles and PCT MicroTubes, together with a PBI Barocycler®, comprise the PCT Micro-Pestle System, which provides a fast, safe, and efficient means of extraction from extremely small amounts of solid samples such as soft animal tissues or biopsies. The PCT µPestle System can be used in any PBI Barocycler®.

BaroFlex 8-well Processing Strips - BaroFlex 8-well Strips are used in the Barozyme HT48 (for pressure-enhanced enzymatic digestion at 20,000 psi). BaroFlex 8-well Strips are made of special high density polyethylene (HDPE) and hold up to 140µl when capped with the BaroFlex Cap Strips or Mats. BaroFlex 8-Cap Strips and BaroFlex 24-Cap Mats are made of silicone. These single-use caps are designed to seal BaroFlex 8-well Strips tightly and to prevent fluid exchange between the sample and the Barozyme chamber fluid during pressure cycling. The silicone caps are available as strips of 8, or mats of 24 caps.

We believe our development of these various consumable products has helped, and will continue to help, drive the adoption of PCT within the life sciences market.

Extended Service Contracts

We offer extended service contracts on our laboratory instrumentation to all of our customers. These service contracts allow a customer who purchases a Barocycler® instrument to receive on-site scheduled preventative maintenance, on-site repair and replacement of all worn or defective component parts, and telephone support, all at no incremental cost for the life of the service contract. We offer one-year and four-year extended service contracts to customers who purchase Barocycler® instruments.

Manufacturing and Supply of Our Products

CBM Industries (Taunton, MA) has recently become the manufacturer of the Barocycler® 2320EXT. CBM is ISO 13485:2003 and 9001:2008 Certified. CBM provides us with precision manufacturing services that include management support services to meet our specific application and operational requirements. Among the services provided by CBM to us are:

- CNC Machining
- Contract Assembly & Kitting
- Component and Subassembly Design
- Inventory Management
- ISO certification

At this time, we believe that outsourcing the manufacturing of our new Barocycler® 2320EXT to CBM is the most cost-effective method for us to obtain ISO Certified, CE and CSA Marked instruments. CBM's close proximity to our South Easton, MA facility is a significant asset enabling interactions between our Engineering, R&D, and Manufacturing groups and their counterparts at CBM. CBM was instrumental in helping PBI achieve CE Marking on our Barocycler 2320EXT, as announced on February 2, 2017.

Although we currently manufacture and assemble the Barozyme HT48, Barocycler® HUB440, the SHREDDER SG3, and most of our consumables at our South Easton, MA facility, we plan to take advantage of the established relationship with CBM and transfer manufacturing of the entire Barocycler® product line, future instrument, and other products to CBM.

The Barocycler® NEP3229, launched in 2008, and manufactured by the BIT Group, will be phased out over the next several years and replaced by the new state-of-the-art Barocycler® HUB and Barozyme HT product lines.

Constant Systems, Ltd.

We are the exclusive distributor, throughout the Americas, for CS cell disruption equipment, parts, and consumables. CS, a British company located about 90 minutes northwest of London, England, has been providing niche biomedical equipment, related consumable products, and services to a global client base since 1989. CS designs, develops, and manufactures high pressure cell disruption equipment required by life sciences laboratories worldwide, particularly disruption systems for the extraction of proteins. The CS equipment provides a constant and controlled cell disruptive environment, giving the user superior, constant, and reproducible results whatever the application. CS has over 900 units installed in over 40 countries worldwide. The CS cell disruption equipment has proven performance in the extraction of cellular components, such as protein from yeast, bacteria, mammalian cells, and other sample types.

The CS pressure-based cell disruption equipment and our PCT-based instrumentation complement each other in several important ways. While both the CS and our technologies are based on high pressure, each product line has fundamental scientific capabilities that the other does not offer. Our PCT Platform uses certain patented pressure mechanisms to achieve small-scale, molecular level effects. CS's technology uses different, proprietary pressure mechanisms for larger-scale, non-molecular level processing. In a number of routine laboratory applications, such as protein extraction, both effects can be critical to success. Therefore, for protein extraction and a number of other important scientific applications, we believe laboratories will benefit by using the CS and our products, either separately or together.

Research and Development

Our research and development activities are split into two functional areas: Applications Development and Engineering.

1. *Applications Development R&D*: Our highly educated and trained staff has years of experience in molecular and cellular biology, virology, and proteomics. Our team of scientists focuses on the development and continued improvement of the PCT Sample Preparation System and on PCT-dependent genomic, proteomic, and small molecule sample preparation applications. Dr. Alexander Lazarev, our vice president of Research & Development, meets regularly with our sales, marketing, and engineering staff to discuss market needs and trends. Our applications research and development team is responsible for the technical review of all scientific collaborations, for the support of our marketing and sales departments through the generation of internal data in a number of areas of market interest, and in the development of commercially-viable PCT-dependent products.

2. *Engineering R&D:* Our engineering research and development team is focused on the design and development of new and improved instrumentation and consumable products to support the commercialization of PCT. Our engineering department is led by Dr. Edmund Ting, our senior vice president of engineering. The primary focus of our engineering group is to develop and continually improve our line of PCT-based instruments and consumables, ensure seamless production processes, perform installations and field service, and work with our application scientists to enhance our PCT-based systems for the mass spectrometry and other markets.

Collaboration Program

Our collaboration program is an important element of our business strategy. Initiating a collaboration with a researcher involves the installation of a Barocycler® instrument for an agreed upon period of time of approximately three to twelve months, and the execution of an agreed upon work plan. Our primary objectives for entering into a collaboration agreement include:

- the development of a new application for PCT and CP in sample preparation;

- the advancement and validation of our understanding of PCT and CP within an area of life sciences in which we already offer products;

- the demonstration of the effectiveness of PCT and CP by specific research scientists, particularly Key Opinion Leaders ("*KOLs*"), who we believe can have a positive impact on market acceptance of PCT; and

- the expectation of peer-reviewed publications and/or presentations at scientific meetings by a third party, especially a KOL, on the merits of PCT and CP.

Since we initiated our collaboration program, third party researchers have cited the use of our PCT platform in multiple publications and presentations. We believe that this program has provided and continues to provide us with independent and objective data about PCT from well-respected laboratories in the United States and throughout the rest of the world.

Government Grants and Contracts

We view federal agency grants to be an important part of our business plan. These types of grants allow us to bill the federal agency for work that we are planning to perform as part of the development and commercialization of our technology. We generally start by submitting initial grant requests that are in response to requests for proposals ("*RFPs*") from the federal government through their Small Business Innovation Research ("*SBIR*") program. Initial ("*SBIR Phase I*") grants are meant to fund approved research projects for six months, and generally have budgets of approximately $100,000 to $150,000. Because our work in SBIR Phase I grants has been successful, we have applied, and may in the future apply for larger National Institutes of Health ("NIH") SBIR Phase II grants. Such larger grants are typically for a two-year period and can offer as much as $1,000,000 to support significant research projects in areas we would otherwise expect to support with internal funds should SBIR Phase II grants not be awarded. To date, we have been awarded five NIH SBIR Phase I grants and three SBIR Phase II grants. The data on three of the NIH SBIR Phase I grants were the basis for the submission, and subsequent award. Of the three NIH SBIR Phase II grants awarded to us: one was in the approximate amount of $845,000 in August 2008, the second was in the approximate amount of $850,000 in September 2011, and the third award was in the approximate amount of $1,020,000 awarded in November 2014. All five of the NIH SBIR Phase I grants and the August 2008 and September 2011, NIH SBIR Phase II grants have been completed.

The 2008 SBIR Phase II grant (2R44GM079059) was awarded to us by the NIH for work in the area of using PCT to extract proteins, sub-cellular molecular complexes, and organelles, with the expectation that these studies might ultimately lead to the release of a new, commercially available PCT-based system, with validated protocols, end-user kits, and other consumables intended for the extraction of clinically important protein biomarkers, sub-cellular molecular complexes, and organelles from human and animal tissues. The 2011 SBIR II contract (W81XWH-10-C-0-175) was awarded to us by the U.S. Army for the development of a universal method for the inactivation, extraction, and enrichment of pathogens in diagnostic samples, including arthropod hosts of military importance. The work covered by this grant was significant in helping us develop the Barozyme HT48 High Throughput System. The 2014 SBIR Phase II grant (2R44HG007136) was awarded to us by the National Human Genome Research Institute of the NIH. Entitled "High Pressure Sample Preparation Instrumentation for DNA Sequencing", this grant allowed us to develop the Barocycler HUB880, an automated, high-throughput, high pressure system (instrument and consumables), to enable significantly better control of DNA fragmentation - a critical step in the preparation of samples for Next Generation Sequencing platforms. This system was based on significant technological advancements over the classic hydrodynamic DNA shearing approach that has been successfully and widely used in the field of DNA sequencing for many years.

Customers

Our customers include researchers at academic laboratories, government agencies, biotechnology companies, pharmaceutical companies and other life science institutions in the United States, Europe, and in Asia. Our goal is to continue aggressive market penetration in these target groups. We also believe that there is a significant opportunity to sell and/or lease additional Barocycler® instrumentation to additional laboratories at current customer institutions.

If we are successful in commercializing PCT in applications beyond our current focus area of genomic, proteomic, lipidomic, and small molecule sample preparation, and if we are successful in our attempts to attract additional capital, our potential customer base could expand to include hospitals, reference laboratories, pharmaceutical manufacturing plants and other sites involved in each specific application. If we are successful in forensics, our potential customers could be forensic laboratories, military and other government agencies. If we are successful in histology (extraction of biomolecules from FFPE tissues), our potential customers could be pharmaceutical companies, hospitals, and laboratories focused on drug discovery or correlation of disease states.

Competition

We compete with companies that have existing technologies for the extraction of nucleic acids, proteins and small molecules from cells and tissues, including methods such as mortar and pestle grinding, sonication, rotor-stator homogenization, French Press, bead beating, freezer milling, enzymatic digestion and chemical dissolution. We believe that there are a number of significant issues related to the use of these methods, including: complexity, sample containment, possibility of cross-contamination, shearing of biomolecules of interest, and limited applicability to different sample types, ease-of-use, reproducibility, and cost. We believe that our PCT Sample Preparation System offers a number of significant advantages over these methods, including:

labor reduction	versatility
temperature control	efficiency
precision	simplicity
reproducibility	safety

To be competitive in the industry, we believe we must be able to clearly and conclusively demonstrate to potential customers that our products provide these improved performance capabilities. We strongly believe that our PCT Sample Preparation System is a novel and enabling system for genomic, proteomic, lipidomic, and small molecule sample preparation. As such, many users of current manual techniques may be willing to challenge their existing methods of sample preparation and invest time to evaluate a method that could change their overall workflow in the sample preparation process, prior to adopting our technology.

Further, we are aware that the cost of the PCT Sample Preparation System may be greater than the cost of many of the other sample preparation methods currently employed. Consequently, we are focusing our sales efforts on those product attributes that we believe will be most important and appealing to potential customers, namely versatility, reproducibility, quality and safety.

Product Pipeline

The following instruments are in our research and development pipeline:

Barocycler® FFPE Protein Extraction Instrument System - A PCT-based system offering the enhanced extraction of proteins from FFPE samples using a modified Barocycler® instrument that combines the advantages of pressure cycling, high temperature and certain reagents. We estimate that it will take approximately 18 months following the completion of this offering and $500,000 in costs to complete the acquisition of the intellectual property needed for pressure-based FFPE extraction and complete the research and development to get this product ready for production and sale.

XstreamPCT™ HPLC Digestion Module - For automated, in-line, on-demand PCT-enhanced protein digestion; the first module in our PCT-based HPLC platform. We have secured the trademark for this product and we have filed patents with regard to this product in the U.S., Canada, and China. We estimate that it will take approximately two years following the completion of this offering and $1,500,000 in costs to get this product ready for production and sale.

Sales and Marketing

Our marketing and sales function is led by Dr. Nathan Lawrence, our vice president of Marketing and Sales. Dr. Lawrence oversees and directs marketing and sales activities such as trade show attendance and sponsorship, on-line advertising, website maintenance and improvement, search engine optimization, creation and dissemination of a PCT newsletter, market research initiatives, the arrangement of on-location seminars, lectures, and demonstrations of PCT capabilities, and the supervision of our one-person sales force. Dr. Lawrence is also responsible for the overall coordination of our collaboration programs, from initial set-up, research plan design, and training, service, and data analysis. Some of these responsibilities are shared with other departments such as Research and Development, but marketing and sales drives the collaborative process. Dr. Lawrence is also responsible for the continued coordination and support of our foreign distribution partners.

Our sales and marketing efforts are centered on using the independent data developed and disseminated by our collaboration partners to help drive the installed base of our PCT Sample Preparation System. The development of scientific data by our partners and our internal researchers provides our sales and marketing staff with additional tools that are essential in selling a paradigm-shifting, new technology such as PCT.

Sales

Direct US Sales Force

Our domestic sales force currently consists of three full-time sales director s and one part-time salesperson. We have committed to a plan to increase the number of full-time sales professionals in late 2016 and early 2017 by a minimum of two additional full-time staff. We expect to hire additional sales and marketing personnel throughout 2017, with a goal that our sales and marketing department will have a minimum of six staff focused on sales and two on marketing before the end of 2017.

Marketing Strategy

We recognize that our enabling pressure cycling technology (PCT) is novel. Consequently, the power of PCT is not yet generally known by researchers. Our first goal is to greatly broaden the awareness of PCT and its applications among scientists and to ensure they know that this technology exists through our Barocycler® family of high-pressure instruments and requisite consumables. To accomplish this expansion of knowledge about PCT and the subsequent adoption of our PCT-based products, we have developed and are implementing a multi-faceted approach to marketing the PCT platform.

Key Opinion Leaders and Publications

To initially reach scientists, we have established collaborations with key opinion leaders (KOL) that recognized early the potential for PCT and went on to report their discoveries in peer reviewed journals. Among the KOLs working with us is Dr. Ruedi Aebersold (Head of the Department of Biology, ETH, Zurich). Dr. Aebersold, a pioneer in proteomics, worked with our scientist and engineers to develop PCT-SWATH (aka PCT-HD), a superior method for the extraction and preparation of proteins for the downstream analysis by mass spectrometry. Other KOLs include, Dr. Jennifer van Eyk (Director of *Advanced Clinical Biosystems Institute in the Department of Biomedical Sciences* Cedar Sinai, Los Angeles, CA) and Dr. Wayne Hubble (Jules Stein Professor at the University of California, LA). Dr. van Eyk is a recognized expert in the causes of heart disease and is using PCT in her attempt to discover cardiac disease biomarkers. Dr. Hubble, a member of the National Academy of Science, is a leader in the field of electron paramagnetic resonance (EPR). He uses PCT in his studies of protein-protein interactions, so very important in the discovery of drugs and drug design. The publications and presentations of these and other world class scientists have been invaluable in gaining initial entry of PCT in several areas of research. In addition to publications by our KOLs, there are also many peer reviewed publications from dozens of other scientists discussing the advantages of the PCT platform in bio-molecule sample preparation. To this end, we do all we can to disseminate the work of these scientists in an effort to increase the exposure of PCT to the worldwide research community.

Broadcasting PCT and Our Products

1. We attend, exhibit, and present at top scientific meetings such as the American Society of Mass Spectrometry (ASMS) and both the US and International meetings of the Human Proteome Organization (HUPO). These meetings are an opportunity to present our technology and to showcase our products to scientists who require sample preparation in their research studies.

2. Routine and timely “blast” emails to scientists in our database. Topics include new PCT-related publications, announcements of meetings, product advertisements, and a monthly newsletter. The database we use is proprietary, as it has been built from attending scientific meetings and searching the internet for relevant publications and contact information.

3. We manage our database with SalesForce, a state-of-the-art Customer Relationship Management (CRM) system. Through SalesForce, we employ the marketing automation software Pardot to manage our email blasts. Pardot enables us to assess open rate, level of interest, and create automatic and constant contact with potential clients.

4. We use social media platforms like LinkedIn, Twitter and Facebook to broadcast publications, webinars, our presence at scientific meetings, and press releases. Social media enables us to easily reach scientists world-wide.

5. In 2016, we significantly upgraded our website. The upgraded website contains a state-of-the art search engine that enables researchers to rapidly find PCT-related publications and products.

6. The website contains videos of our products. In 2016, we contracted with BioCompare to produce a high quality video showing PCT-HD and the uses of our Barocycler® 2320EXT and the MicroTube System.

7. Our scientists regularly present their findings and discuss our products at scientific sessions at regional, national, and international scientific conferences, and at corporate, government, and academic laboratories.

8. In addition to electronic advertising, we have used and will continue to use print media to showcase our products.

In 2017, we plan to expand our Marketing team to support these and additional initiatives.

Foreign Distributor Network

Exclusive Agreements

Currently, we have distribution arrangements covering China, Poland, 24 countries in Europe, and Japan. We expect the following agreements will be extended during 2017 for a minimum of at least two additional years.

In May of 2014, we entered into a three-year distribution agreement with Powertech Technology Co, Ltd., of China, pursuant to which we were granted Powertech Technology exclusive distribution rights to all of our products in China.

In February 2016, we entered into a three-year distribution agreement with *bioanalytic* of Poland, pursuant to which PBI granted *bioanalytic* exclusive distribution rights to all of our products in Poland.

In September of 2016, we entered into a three-year distribution agreement with Vita Co. of Japan, pursuant to which we were granted Vita Co. exclusive distribution rights to all of our products in Japan.

In September of 2016, we entered into a distribution agreement with I&L GmbH, of Germany pursuant, to which were granted I&L, exclusive distribution rights to all of our products in the countries designated as Western Europe (Andorra, Austria, Belgium, Denmark, Finland, France, Germany, Gibraltar, Greece, Iceland, Italy, Ireland, Liechtenstein, Luxembourg, Malta, Monaco, Norway, Netherlands, Portugal, San Marino, Spain, Sweden, Switzerland, and the United Kingdom)

Non-Exclusive and Other Distribution Agreements

In November 2011, we entered into a distributor agreement with OROBOROS Instruments Corp. ("*OROBOROS*") of Austria pursuant to which we were granted OROBOROS non-exclusive world-wide distribution rights to our Shredder SG3 System and related products.

In June 2013, CS and PBI signed an expanded Distribution Agreement that made us the exclusive distributor of CS products throughout all of the Americas until 2019.

In January 2016, SCIEX, a global leader in life science analytical technologies, announced an exclusive two-year co-marketing agreement with PBI. In their press release, SCIEX stated that the relationship with us will uniquely position SCIEX to address a major challenge in complex sample preparation by marketing a complete solution to increase the depth, breadth, and reproducibility of protein extraction, digestion, and quantitation in all tissue types, including challenging samples like tumors. Under the agreement, PBI and SCIEX will promote PCT Sample Preparation Systems such as PCT-HD with SWATH® Acquisition-based next generation proteomics, TripleTOF® Systems, QTRAP® Systems, and Triple Quad Systems. This focus on improved sample preparation, a crucial step performed in research laboratories worldwide, will enable scientists to extract more proteins reproducibly from complex sample types, potentially yielding superior biological insights and discoveries.

Competitive Advantages/Operational Strengths

Our platforms are based on our patented and proprietary Pressure Cycling Technology (PCT). We believe the PCT platform provides distinct and important competitive advantages over other sample preparation methods, as it:

is proprietary to PBI

has been shown to extract more classes of proteins from tissues and cells than many other current sample preparation methods. We believe this claim is supported by several publications and presentations available on our website, most notably by Dr. R. Aebersold, Professor at the Institute of Molecular Systems Biology, ETH-Zurich. Dr. Aebersold's publications include:

can accelerate enzymatic digestion of proteins for analysis by mass spectrometry from overnight to under an hour. We believe this claim is supported by several experiments. For example, Dr. A. Ivanov published a paper available on our website.

enables efficient sample prep workflows for processing minute amounts of tissue with excellent yields and reproducibility for researchers in the growing precision and translational medicine fields.

Summary of Growth Strategy

Our growth strategy includes:

Expanding our United States salesforce.

Aggressively promoting the PCT-HD System, which includes the Barocycler® 2320EXT, MicroTube System, and MicroPestles.

Expanding our number of international distributers.

Actively promoting our other Barocycler® products, accessories, and consumables, including but not limited to, the Barozyme, the HUB440, and HUB880.

Development of new applications for the Barocycler® 2320EXT, such as, but not limited to, clinical applications.

Development of new high-pressure applications for industries outside of biotechnology, such as, but not limited to, food science.

Development of new high-pressure instruments, devices, and consumables to meet the growing demand for pressure-based technology.

Intellectual Property

We believe that protection of our patents and other intellectual property is essential to our business. Subject to the availability of sufficient financial resources, our practice is to file patent applications to protect technology, inventions, and improvements to inventions that are important to our business development. We also rely on trade secrets, know-how, and technological innovations to develop and maintain our potential competitive position.

PBI has 14 United States granted patents and 1 foreign granted patent (Japan: 5587770, EXTRACTION AND PARTITIONING OF MOLECULES) covering multiple applications of PCT in the life sciences field. Our issued patents expire between 2017 and 2032. PBI also has 19 pending patents in the USA, Canada, Europe, Australia, China, and Taiwan. Our failure to obtain and maintain adequate patent protection may adversely affect our ability to enter into, or affect the terms of, any arrangement for the marketing or sale of any of our PCT products. It may also allow our competitors to duplicate our products without our permission and without compensation.

License Agreements Relating to Pressure Cycling Technology

BioMolecular Assays, Inc.

In 1996, we acquired our initial equity interest in BioSeq, Inc., which at the time was developing our original pressure cycling technology. BioSeq, Inc. acquired its pressure cycling technology from BioMolecular Assays, Inc. under a technology transfer and patent assignment agreement. In 1998, we purchased all of the remaining outstanding capital stock of BioSeq, Inc., and at such time, the technology transfer and patent assignment agreement was amended to require us to pay BioMolecular Assays, Inc., a 5% royalty on our sales of products or services that incorporate or utilize the original pressure cycling technology that BioSeq, Inc. acquired from BioMolecular Assays, Inc. We are also required to pay BioMolecular Assays, Inc. 5% of the proceeds from any sale, transfer or license of all or any portion of the original pressure cycling technology. These payment obligations terminated March 7, 2016. During the years ended December 31, 2016 and 2015, we incurred approximately $6,963 and $31,301, respectively, in royalty expense associated with our obligation to BioMolecular Assays, Inc.

In connection with our acquisition of BioSeq, Inc., we licensed certain limited rights to the original pressure cycling technology back to BioMolecular Assays, Inc. This license is non-exclusive and limits the use of the original pressure cycling technology by BioMolecular Assays, Inc. solely for molecular applications in scientific research and development and in scientific plant research and development. BioMolecular Assays, Inc. is required to pay us a royalty equal to 20% of any license or other fees and royalties, but not including research support and similar payments, it receives in connection with any sale, assignment, license or other transfer of any rights granted to BioMolecular Assays, Inc. under the license. BioMolecular Assays, Inc. must pay us these royalties until the expiration in March 2016 of the patents held by BioSeq, Inc. since 1998. We have not received any royalty payments from BioMolecular Assays, Inc. under this license.

Battelle Memorial Institute

In December 2008, we entered into an exclusive patent license agreement with the Battelle Memorial Institute ("*Battelle*"). The licensed technology is the subject of a patent application filed by Battelle in 2008 and relates to a method and a system for improving the analysis of protein samples, including through an automated system utilizing pressure and a pre-selected agent to obtain a digested sample in a significantly shorter period of time than current methods, while maintaining the integrity of the sample throughout the preparatory process. In addition to royalty payments on net sales on "licensed products," we are obligated to make minimum royalty payments for each year that we retain the rights outlined in the patent license agreement and we are required to have our first commercial sale of the licensed products within one year following the issuance of the patent covered by the licensed technology. After re-negotiating the terms of the contract in 2013, the minimum annual royalty was $1,200 in 2014 and $2,000 in 2015; the minimum royalties are $3,000 in 2016, $4,000 in 2017 and $5,000 in 2018 and each calendar year thereafter during the term of the agreement.

Regulation

Many of our activities are subject to regulation by governmental authorities within the United States and similar bodies outside of the United States. The regulatory authorities may govern the collection, testing, manufacturing, safety, efficacy, labeling, storage, record keeping, transportation, approval, advertising, and promotion of our products, as well as the training of our employees.

Currently, all of our commercialization efforts are focused in the area of genomic, proteomic, lipidomic, and small molecule sample preparation. We do not believe that our current Barocycler® products used in sample preparation are considered "medical devices" under the United States Food, Drug and Cosmetic Act (the "*FDA Act*") and we do not believe that we are subject to the law's general control provisions that include requirements for registration, listing of devices, quality regulations, labeling and prohibitions against misbranding and adulteration. We also do not believe that we are subject to regulatory inspection and scrutiny. If, however, we are successful in commercializing PCT in applications beyond our current focus area of genomic, proteomic, lipidomic, and small molecule sample preparation,

such as protein purification, pathogen inactivation and immunodiagnostics, our products may be considered “medical devices” under the FDA Act, at which point we would be subject to the law’s general control provisions and regulation by the FDA that include requirements for registration listing of devices, quality regulations, labeling, and prohibitions against misbranding and adulteration. The process of obtaining approval to market these devices in the other potential applications of PCT would be costly and time consuming and could prohibit us from pursuing such markets.

Some of our devices may also become subject to the European Pressure Equipment Directive, which requires certain pressure equipment meet certain quality and safety standards. We do not believe that we are currently subject to this directive because our Barocycler® instruments are below the threshold documented in the text of the directive. If our interpretation were to be challenged, we could incur significant costs defending the challenge, and we could face production and selling delays, all of which could harm our business.

We self-certified that our Barocycler® instrumentation was electromagnetically compatible, or “CE” compliant, which means that our Barocycler® instruments meet the essential requirements of the relevant European health, safety and environmental protection legislation. In order to maintain our CE Marking, a requirement to sell equipment in many countries of the European Union, we are obligated to uphold certain safety and quality standards. Due to outsourcing manufacturing to CBM, an ISO certified contract manufacturer, we believe compliance with CE and other required marks and certifications is well controlled.

Employees

At December 31 , 2016, we had nine (9) full-time employees and four (4) part-time employees. All employees enter into confidentiality agreements intended to protect our proprietary information. We believe that our relations with our employees are good. None of our employees are represented by a labor union. Our performance depends on our ability to attract and retain qualified professional, scientific and technical staff. The level of competition among employers for skilled personnel is high. Subject to our limited financial resources, we attempt to maintain employee benefit plans to enhance employee morale, professional commitment and work productivity and provide an incentive for employees to remain with us.

Properties

Our corporate office is currently located at 14 Norfolk Avenue, South Easton, Massachusetts 02375. We are currently paying $4,800 per month, on a lease extension, signed on December 29, 2016, that expires December 31, 2017, for our corporate office.

On November 1, 2014 we signed a lease for lab space in Medford, MA. We subsequently expanded our space in Medford. The lease expires December 30, 2017 and requires monthly payments of $5,385 subject to annual cost of living increases.

Legal Proceedings

We are not currently involved in any litigation that we believe could have a material adverse effect on our financial condition or results of operations. There is no action, suit, or proceeding by any public board, government agency, self-regulatory organization or body pending or, to the knowledge of our executive officers, threatened against or affecting us, our common stock, our subsidiary or any officers or directors in their capacities as such, in which an adverse decision could have a material adverse effect.

DIRECTORS AND EXECUTIVE OFFICERS

As of the date of this prospectus, our directors and executive officers are as follows:

Name	Age	Position	Board Committees	Term of office expires:
Richard T. Schumacher	66	President, Chief Executive Officer, Treasurer, Clerk and Director		2017
Jeffrey N. Peterson	61	Chairman of the Board	Audit, Compensation, Nominating	2018
Dr. Mickey Urdea	64	Director	Scientific Advisory Board	2018
Vito J. Mangiardi	68	Director	Audit, Compensation, Nominating	2019
Kevin A. Pollack	46	Director	Audit, Compensation, Nominating	2019

60

The following noteworthy experience, qualifications, attributes and skills for each Board member, together with the biographical information for each nominee described below, led to our conclusion that the person should serve as a director in light of our business and structure:

Mr. Richard T. Schumacher, the founder of the Company, has served as a director of the Company since 1978. He has served as the Company's Chief Executive Officer since April 16, 2004 and President since September 14, 2004. He previously served as Chief Executive Officer and Chairman of the Board of the Company from 1992 to February 2003. From July 9, 2003 until April 14, 2004 he served as a consultant to the Company pursuant to a consulting agreement. He served as President of the Company from 1978 to August 1999. Mr. Schumacher served as the Director of Infectious Disease Services for Clinical Sciences Laboratory, a New England-based medical reference laboratory, from 1986 to 1988. From 1972 to 1985, Mr. Schumacher was employed by the Center for Blood Research, a nonprofit medical research institute associated with Harvard Medical School. Mr. Schumacher received a B.S. in Zoology from the University of New Hampshire.

Mr. Jeffrey N. Peterson has served as a director of the Company since July 2011 and as Chairman of the Board starting in 2012. Since 1999, he has served as the chief executive officer of Target Discovery, Inc. ("TDI"), a personalized medicine diagnostics (PMDx) company. Mr. Peterson also serves as Chairman of TDI's majority-owned subsidiary, Veritomyx, Inc., which is completing development and commercialization of software tools for accurate peptide, protein and isoform identification and characterization. Prior to incorporating and joining TDI, Mr. Peterson served as CEO of Sharpe, Peterson, Ocheltree & Associates, an international business development consulting firm assisting Fortune 500 and many smaller firms in business expansion and strategy. Prior to that, he spent 9 years in key management roles in Abbott Laboratories' Diagnostics and International (Pharmaceuticals, Hospital Products, Nutritionals, and Consumer) businesses, last serving as CEO and General Manager of Abbott South Africa. Mr. Peterson's experience prior to Abbott Laboratories included 11 years with General Electric's Engineered Materials and Plastics businesses, spanning roles in strategic planning, business development, technology licensing, marketing and sales, operations, quality control and R&D. Mr. Peterson holds BSChE and MSChE (Chemical Engineering) degrees from MIT, as well as 6 issued US and many related international patents, and has authored articles in peer-reviewed scientific journals. Mr. Peterson is Chair Emeritus of the BayBio Institute, a non-profit organization serving the regional life science community. He served for 12 years on the Board of BayBio, the trade association for the life sciences industry in Northern California. He was a cofounder of the Coalition for 21st Century Medicine, and of BIO's Personalized Medicine & Diagnostics Working Group, and served on the board of Advisors for the Center for Professional Development and Entrepreneurship at the University of Texas MD Anderson Cancer Center. Mr. Peterson has lived and worked overseas for 18 years, in the Middle East, Europe and Africa, and is Chair Emeritus of the American International School of Johannesburg.

Mr. Vito J. Mangiardi has served as a director of the Company since July 2012. Mr. Mangiardi is an accomplished senior executive with proven experience as a President, CEO and COO in the Life Sciences and Bio Energy product and service sectors. Mr. Mangiardi has held positions as a Research Chemist for Bio-Rad Laboratories, Inc.; Sales & Marketing Director for Baxter Travenol, Inc.; Executive VP and COO for Quintiles Transnational Corp.; President and CEO of Diagnostics Laboratories, Inc., Clingenix, Inc., and Bilcare, Inc.; and President of AAI Pharma, Inc. More recently he was the COO/Deputy Director of Operations and Production at the University of California Lawrence Berkeley National Laboratory Joint Genome Institute. Mr. Mangiardi has experience with three start-ups, two midsize,

and several mature companies, and has international experience leading and managing organizations on four continents. He has experience in leading alliances, acquisitions, due diligence, and post-acquisition assimilation. Mr. Mangiardi has been on the Board of Directors of three companies and has proven success in working with both national and international investment groups to raise funds. Mr. Mangiardi earned a BS in Biology/Chemistry from Eastern Illinois University and two MBA degrees from Golden Gate University - in General Management and in Marketing. Mr. Mangiardi is listed as an inventor on four patents and has published articles in various publications in protein separation techniques in the area of metabolism, thyroid, anemia/hematology and cancer, and is a member of numerous professional organizations. In March of 2011 Mr. Mangiardi became founding partner, President and CEO of Marin Bay Partners, LLC (MBP), a consulting firm focused on life sciences, pharmaceutical development and clinical diagnostics.

Mr. Kevin A. Pollack has served as a director of the Company since July 2012. Mr. Pollack has been the Chief Financial Officer of Opiant Pharmaceuticals, Inc. (OPNT-OTCQB), a specialty pharmaceutical company developing pharmacological treatments for substance use, addictive, and eating disorders since November 2012. He has been an investment banker and securities attorney at Banc of America Securities LLC and Sidley Austin LLP (formerly Brown & Wood LLP), respectively, and has previous asset management experience at Paragon Capital LP since October of 2007. Mr. Pollack is a magna cum laude graduate of the Wharton School of the University of Pennsylvania and holds J.D. and M.B.A. degrees from Vanderbilt University, where he graduated with Beta Gamma Sigma honors. Currently, he presently sits on the Boards of Directors of Opiant Pharmaceuticals, Inc. and MagneGas Corporation (MNGA-NASDAQ), an alternative energy company. Mr. Pollack also is President of Short Hills Capital LLC.

Dr. Michael S. "Mickey" Urdea has served as a director of the Company since February 8, 2013. Dr. Urdea is a Founder and Partner for Halteres Associates, a biotechnology consulting firm since June 2011. He also founded and served as Chief Executive Officer of Tethys Bioscience, a proteomics-based diagnostics company involved in preventative personalized medicine. Additionally, Dr. Urdea is a founder and the Chairman of Catalysis Foundation for Health, an organization addressing gaps in global healthcare caused by inefficiencies in disease diagnosis and monitoring. He serves as an expert consultant to the life sciences industry and is on the scientific advisory boards and boards of directors of a number of biotechnology, diagnostics, venture capital and philanthropic organizations. Prior to his current business activities, Dr. Urdea founded the Nucleic Acid Diagnostics group at Chiron Corporation, and with colleagues, invented branched DNA molecules for amplification of signal in nucleic acid complexes. Application of this technology resulted in the first commercial products for quantification of human hepatitis B, hepatitis C, and human immunodeficiency viruses (HBV, HCV and HIV, respectively). He then became business head of the Molecular Diagnostics group and Chief Scientific Officer at Bayer Diagnostics. He continues to serve as a diagnostics industry, product development and scientific advisor to the Bill and Melinda Gates Foundation, acted as co-chair of two of the Grand Challenges grant review committees, and served as a member of its Diagnostic Forum. Dr. Urdea is an author on nearly 200 peer-reviewed scientific publications, nearly 300 abstracts and international scientific presentations, and more than 100 issued and pending patents. He received his BS in Biology and Chemistry from Northern Arizona University in Flagstaff and his Ph.D. in Biochemistry from Washington State University.

Family Relationships

There are no family relationships among any of our directors or executive officers.

Board Composition and Director Independence As of the date of this prospectus, our board of directors consists of five members: Richard T. Schumacher, Jeffrey N. Peterson, Vito J. Mangiardi, Kevin A. Pollack and Dr. Michael S. "Mickey" Urdea. The directors will serve until our next annual meeting and until their successors are duly elected and qualified.

In making the determination of whether a member of the board is independent, our board considers, among other things, transactions and relationships between each director and his immediate family and the Company, including those reported under the caption "Related Party Transactions". The purpose of this review is to determine whether any such relationships or transactions are material and, therefore, inconsistent with a determination that the directors are independent. On the basis of such review and its understanding of such relationships and transactions, our board affirmatively determined that each of Messrs. Peterson, Mangiardi, Pollack, and Dr. Urdea are independent and that none of them have any material relationship with us that might interfere with his or her exercise of independent judgment. We define "independent" as that term is defined in Rule 5605(a)(2) of the NASDAQ listing standards.

Board Committees

We have established an audit committee and a compensation committee. The Board intends for each committee to have its own charter prior to the effectiveness of the registration statement of which this prospectus forms a part. Upon effectiveness of the registration statement of which this prospectus forms a part, each of the board committees will have the composition and responsibilities described below.

Audit Committee

The Audit Committee was established in accordance with Section 3(a)(58)(A) of the Securities Exchange Act of 1934. Messrs. Pollack (chairman), Mangiardi and Peterson are currently the members of the Audit Committee.

The Board of Directors has determined that Mr. Pollack qualifies as an “audit committee financial expert” as defined in Item 407(d)(5) of Regulation S-K and is “independent” as defined by SEC and OTC Market rules.

The Audit Committee operates pursuant to a written charter (the "*Audit Committee Charter*"), a current copy of which is publicly available on the investor relations portion of our website. Under the provisions of the Audit Committee Charter, the primary functions of the Audit Committee are to assist the Board of Directors with the oversight of (i) our financial reporting process, accounting functions, and internal controls, and (ii) the qualifications, independence, appointment, retention, compensation, and performance of our independent registered public accounting firm. The Audit Committee is also responsible for the establishment of "whistle-blowing" procedures, and the oversight of other compliance matters.

Compensation Committee

The Board of Directors has a Compensation Committee, consisting of Messrs. Peterson, Pollack and Mangiardi. The Compensation Committee's duties include (i) reviewing and approving our executive compensation, (ii) reviewing the recommendations of the president and chief executive officer regarding the compensation of our executive officers, (iii) evaluating the performance of the president and chief executive officer, (iv) overseeing the administration and approval of grants of stock options and other equity awards under our equity incentive plans, and (v) recommending compensation for our board of directors and each committee thereof for review and approval by the board of directors. The Compensation Committee operates pursuant to a written charter, a current copy of which is publicly available on the investor relations portion of our website.

Involvement in Certain Legal Proceedings

To the best of our knowledge, none of our directors or executive officers has, during the past ten years:

- been convicted in a criminal proceeding or been subject to a pending criminal proceeding (excluding traffic violations and other minor offenses);
- had any bankruptcy petition filed by or against the business or property of the person, or of any partnership, corporation or business association of which he was a general partner or executive officer, either at the time of the bankruptcy filing or within two years prior to that time;
- been subject to any order, judgment, or decree, not subsequently reversed, suspended or vacated, of any court of competent jurisdiction or federal or state authority, permanently or temporarily enjoining, barring, suspending or otherwise limiting, his involvement in any type of business, securities, futures, commodities, investment, banking, savings and loan, or insurance activities, or to be associated with persons engaged in any such activity;
- been found by a court of competent jurisdiction in a civil action or by the Securities and Exchange Commission or the Commodity Futures Trading Commission to have violated a federal or state securities or commodities law, and the judgment has not been reversed, suspended, or vacated;

been the subject of, or a party to, any federal or state judicial or administrative order, judgment, decree, or finding, not subsequently reversed, suspended or vacated (not including any settlement of a civil proceeding among private litigants), relating to an alleged violation of any federal or state securities or commodities law or regulation, any law or regulation respecting financial institutions or insurance companies including, but not limited to, a temporary or permanent injunction, order of disgorgement or restitution, civil money penalty or temporary or permanent cease-and-desist order, or removal or prohibition order, or any law or regulation prohibiting mail or wire fraud or fraud in connection with any business entity; or

been the subject of, or a party to, any sanction or order, not subsequently reversed, suspended or vacated, of any self-regulatory organization (as defined in Section 3(a)(26) of the Exchange Act), any registered entity (as defined in Section 1(a)(29) of the Commodity Exchange Act), or any equivalent exchange, association, entity or organization that has disciplinary authority over its members or persons associated with a member.

Except as set forth in our discussion below in “Certain Relationships and Related Transactions,” none of our directors or executive officers has been involved in any transactions with us or any of our directors, executive officers, affiliates or associates which are required to be disclosed pursuant to the rules and regulations of the Commission.

EXECUTIVE COMPENSATION

Executive Officer Compensation

Summary Compensation Table

The Summary Compensation Table below sets forth the total compensation paid or earned for the fiscal years ended December 31, 2016 and 2015 for: (i) each individual serving as our chief executive officer ("*CEO*") or acting in a similar capacity during any part of fiscal 2016; and (ii) the other two most highly paid executive officers (collectively, the "*Named Executive Officers*") who were serving as executive officers at the end of fiscal 2016 .

Name and Principal Position	Fiscal Year	Salary[1]	Bonus	Stock Awards	Option Awards[2]	Non-Qualified Deferred Compensation Earning	All other Compensation[3]	Total
Richard T. Schumacher	2016	$ 308,963	$ -	$ -	$ -	$ -	$ 40,832	$ 349,795
President, CEO	2015	294,250	-	-	343,000	-	16,098	653,348
Edmund Ting, Ph.D	2016	207,100	-	-	-	-	1,261	208,361
Senior Vice President of Engineering	2015	197,600	-	-	35,672	-	1,216	234,488
Alexander Lazarev, Ph.D	2016	173,561	-	-	-	-	7,736	181,297
Vice President of Research and Development	2015	165,600	-	-	31,556	-	7,656	204,812

(1) Salary refers to base salary compensation paid through our normal payroll process. No cash bonus was paid to any named executive officer for 2016 or 2015.

(2) Amounts shown do not reflect cash received by the Named Executive Officers. Instead, the amounts shown are the aggregate grant date fair value of option awards as determined pursuant to FASB ASC 718, Compensation-Stock

Compensation. Please refer to Note 2, xiii, “Accounting for Stock-Based Compensation” in the accompanying Notes to Consolidated Financial Statements for the fiscal year ended December 31, 2016 , for the relevant assumptions used to determine the valuation of stock option grants.

(3) “All Other Compensation” includes our Company match to the executives’ 401(k) contribution and premiums paid on life insurance for the executives. Both of these benefits are available to all of our employees. In the case of Mr. Schumacher, “All Other Compensation” also includes $8,474 in premiums we paid for a life insurance policy to which Mr. Schumacher’s wife is the beneficiary. In 2016, Mr. Schumacher received $29,708 for unused earned time off. “All Other Compensation” for Dr. Lazarev includes $6,000 paid to Dr. Lazarev in lieu of his participation in the medical benefit plan offered by the Company.

Outstanding Equity Awards at Fiscal Year End

The following table sets forth certain information regarding outstanding stock options awards for each of the Named Executive Officers as of December 31, 2016 .

	Option Awards				
Name	**Number of Securities Underlying Unexercised Options Exercisable**	**Number of Securities Underlying Unexercised Options Unexercisable [1]**		**Option Exercise Price ($)**	**Option Expiration Date**
Richard T. Schumacher	75,000	-		$ 0.60	3/12/2019
President, CEO	15,000	-		$ 1.00	9/9/2021
	30,000	-		$ 0.60	3/13/2022
	75,000	-		$ 0.40	5/14/2023
	225,003	74,997	(2)	$ 0.30	9/24/2024
	416,667	833,833	(3)	$ 0.40	12/31/2025
Edmund Y. Ting, Ph.D	12,000	-		$ 1.00	9/25/2018
Senior Vice President of Engineering	42,000	-		$ 0.60	3/12/2019
	15,000	-		$ 1.00	9/9/2021
	17,500	-		$ 0.60	3/13/2022
	54,000	-		$ 0.40	5/14/2023
	150,002	49,998	(2)	$ 0.30	9/24/2024
	43,333	86,667	(3)	$ 0.40	12/31/2025
Alexander V. Lazarev, Ph.D	10,000	-		$ 1.00	9/25/2018
Vice President of Research & Development	35,000	-		$ 0.60	3/12/2019
	15,000	-		$ 1.00	9/9/2021
	15,000	-		$ 0.60	3/13/2022
	45,000	-		$ 0.40	5/14/2023
	112,502	37,498	(2)	$ 0.30	9/24/2024
	38,333	76,667	(3)	$ 0.40	12/31/2025

(1) All unvested stock options listed in this column were granted to the Named Executive Officer pursuant to our 2005 Equity Incentive Plan, 2013 Equity Incentive Plan and 2015 Nonqualified Incentive Plan. All options expire ten years after the date of grant. Unvested stock options become fully vested and exercisable upon a change of control of our Company.

(2)

Options to purchase shares of common stock were granted on September 24, 2014 to each of the Named Executive Officers, of which 1/6th of the stock options will vest six months from the date of grant while the remainder will vest monthly over the remaining three year vesting period.

(3) Options to purchase shares of common stock were granted on December 31, 2015 to each of the Named Executive Officers, of which the stock options will vest monthly from the date of grant over the three year vesting period.

Retirement Plan

All employees, including the named executive officers, may participate in our 401(k) Plan. Under the 401(k) Plan, employees may elect to make before tax contributions of up to 60% of their base salary, subject to current Internal Revenue Service limits. The 401(k) Plan does not permit an investment in our common stock. We match employee contributions up to 50% of the first 2% of the employee's earnings. Our contribution is 100% vested immediately.

Severance Arrangements

Each of Mr. Schumacher, Dr. Ting, Dr. Lazarev, and Dr. Lawrence, executive officers of the Company, are entitled to receive a severance payment if terminated by us without cause. The severance benefits would include a payment in an amount equal to one year of such executive officer's annualized base salary compensation plus accrued paid time off. Additionally, the officer will be entitled to receive medical and dental insurance coverage for one year following the date of termination.

Change-in-Control Arrangements

Pursuant to severance agreements with each of Mr. Schumacher, Dr. Ting, Dr. Lazarev and Dr. Lawrence, each such executive officers, is entitled to receive a change of control payment in an amount equal to one year (other than Mr. Schumacher) of such executive officer's annualized base salary compensation, accrued paid time off, and medical and dental coverage, in the event of a change of control of our Company. In the case of Mr. Schumacher, his payment is equal to two years of annualized base salary compensation, accrued paid time off, and two years of medical and dental coverage.

Pursuant to our equity incentive plans, any unvested stock options held by a named executive officer will become fully vested upon a change in control (as defined in the 2005 Equity Incentive Plan) of our Company.

Director Compensation and Benefits

The following table sets forth certain information regarding compensation earned or paid to our directors during fiscal 2016 .

Name	Fees Earned or Paid in Cash [1]	Stock Awards (1)	Option Awards [2][3]	Total
Vito J. Mangiardi	40,000	-	-	40,000
Jeffrey N. Peterson	60,000	-	-	60,000
Kevin A. Pollack	40,000	-	-	40,000
Michael S. Urdea, Ph. D.	50 ,000	-	-	50,000

Our non-employee directors receive the following compensation for service as a director:

(1) Each director currently earns a quarterly stipend of $10,000 for attending meetings of the full board of directors (whether telephonic or in-person) and attending committee meetings in 2016 . Mr. Peterson currently earns $15,000 per quarter as chairman of the board of directors and Dr. Urdea receives $15,000 annually for serving on the scientific advisory committee. There is no limit to the number of board of directors or committee meetings that may be called.

(2) Amounts shown do not reflect compensation received by the directors. Instead, the amounts shown are the aggregate grant date fair value as determined pursuant to FASB ASC 718, Compensation-Stock Compensation. Please refer to Note 2, xiii, “Accounting for Stock-Based Compensation” in the accompanying Notes to the Consolidated Financial Statements for the fiscal year ended December 31, 2016 , for the relevant assumptions used to determine the valuation of stock option grants.

(3) The following table shows the total number of outstanding stock options as of December 31, 2016 that have been issued as director compensation.

Name	Aggregate Number of Stock Options Outstanding
Vito J. Mangiardi	258,000
Jeffrey N. Peterson	452,250
Kevin A. Pollack	258,000
Michael S. Urdea, Ph. D.	220,500

Report from Compensation Committee

General

Messrs. Peterson, Pollack and Mangiardi are currently the members of the Compensation Committee. The Compensation Committee operates pursuant to a written charter, a current copy of which is publicly available on the investor relations portion of our website. The primary functions of the Compensation Committee include (i) reviewing and approving our executive compensation, (ii) reviewing the recommendations of the president and chief executive officer regarding the compensation of our executive officers, (iii) evaluating the performance of the president and chief executive officer, (iv) overseeing the administration and approval of grants of stock options and other equity awards under our equity incentive plans, and (v) recommending compensation for our board of directors and each committee thereof for review and approval by the board of directors.

The Compensation Committee may form and delegate authority to one or more subcommittees as it deems appropriate from time to time under the circumstances (including (a) a subcommittee consisting of a single member and (b) a subcommittee consisting of at least two members, each of whom qualifies as a “non-employee director,” as such term is defined from time to time in Rule 16b-3 promulgated under the Securities Exchange Act of 1934, and an “outside director,” as such term is defined from time to time in Section 162(m) of the Internal Revenue Code of 1986, as amended, and the rules and regulations there under).

Compensation Objectives

In light of the relatively early stage of commercialization of our products, we recognize the importance of attracting and retaining key employees with sufficient experience, skills, and qualifications in areas vital to our success, such as operations, finance, sales and marketing, research and development, engineering, and individuals who are committed to our short- and long-term goals. The Compensation Committee has designed our executive compensation programs with the intent of attracting, motivating, and retaining experienced executives and, subject to our limited financial

resources, rewarding them for their contributions by offering them a competitive base salary, potential for annual cash incentive bonuses, and long-term equity-based incentives, typically in the form of stock options. The Compensation Committee strives to balance the need to retain key employees with financial prudence given our history of operating losses, limited financial resources and the early stage of our commercialization.

Executive Officers and Director Compensation Process

The Compensation Committee considers and determines executive compensation according to an annual objective setting and measurement cycle. Specifically, corporate goals for the year are initially developed by our executive officers and are then presented to our board of directors and Compensation Committee for review and approval. Individual goals are intended to focus on contributions that facilitate the achievement of the corporate goals. Individual goals are first proposed by each executive officer, other than the president and CEO, then discussed by the entire senior executive management team and ultimately compiled and prepared for submission to our board of directors and the Compensation Committee, by the president and chief executive officer. The Compensation Committee sets and approves the goals for the president and chief executive officer. Generally, corporate and individual goals are set during the first quarter of each calendar year. The objective setting process is coordinated with our annual financial planning and budgeting process so our board of directors and Compensation Committee can consider overall corporate and individual objectives in the context of budget constraints and cost control considerations. Annual salary increases, bonuses, and equity awards, such as stock option grants, if any, are tied to the achievement of these corporate and individual performance goals as well as our financial position and prospects.

Under the annual performance review program, the Compensation Committee evaluates individual performance against the goals for the recently completed year. The Compensation Committee's evaluation generally occurs in the first quarter of the following year. The evaluation of each executive (other than the president and chief executive officer) begins with a written self-assessment submitted by the executive to the president and chief executive officer. The president and chief executive officer then prepares a written evaluation based on the executive's self-assessment, the president and chief executive officer's evaluation, and input from others within the Company. This process leads to a recommendation by the president and chief executive officer for a salary increase, bonus, and equity award, if any, which is then considered by the Compensation Committee. In the case of the president and chief executive officer, the Compensation Committee conducts his performance evaluation and determines his compensation, including salary increase, bonus, and equity awards, if any. We generally expect, but are not required, to implement salary increases, bonuses, and equity awards, for all executive officers, if and to the extent granted, by April 1 of each year.

Non-employee director compensation is set by our board of directors upon the recommendation of the Compensation Committee. In developing its recommendations, the Compensation Committee is guided by the following goals: compensation should be fair relative to the required services for directors of comparable companies in our industry and at our Company's stage of development; compensation should align directors' interests with the long-term interest of stockholders; the structure of the compensation should be simple, transparent, and easy for stockholders to understand; and compensation should be consistent with the financial resources, prospects, and competitive outlook for the Company.

In evaluating executive officer and director compensation, the Compensation Committee considers the practices of companies of similar size, geographic location, and market focus. In order to develop reasonable benchmark data, the Compensation Committee has referred to publicly available sources such as www.salary.com (we do not intend for this website address to be an active link or to otherwise incorporate by reference the contents of the website into this prospectus) and the BioWorld Survey. While the Compensation Committee does not believe benchmarking is appropriate as a stand-alone tool for setting compensation due to the unique aspects of our business objectives and current stage of development, the Compensation Committee generally believes that gathering this compensation information is an important part of its compensation-related decision making process.

The Compensation Committee has the authority to hire and fire advisors and compensation consultants as needed and approve their fees. No advisors or compensation consultants were hired or fired in fiscal 2016 . The Compensation Committee is also authorized to delegate any of its responsibilities to sub committees or individuals as it deems appropriate. The Compensation Committee did not delegate any of its responsibilities in fiscal 2016.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth certain information as of April 7, 2017 concerning the beneficial ownership of Common Stock for: (i) each director and director nominee, (ii) each named executive officer in the Summary Compensation Table under “Executive Compensation” below, (iii) all executive officers and directors as a group, and (iv) each person (including any “group” as that term is used in Section 13(d)(3) of the Exchange Act) known by us to be the beneficial owner of 5% or more of our Common Stock. Except as indicated below, the address for each of the persons below who are beneficial owners of 5% or more of our Common Stock is our corporate address at 14 Norfolk Avenue, South Easton, MA 02375.

Beneficial ownership has been determined in accordance with the rules of the SEC and is calculated based on 31,809,839 shares of our Common Stock issued and outstanding as of April 7, 2017. Shares of Common Stock subject to options, warrants, preferred stock or other securities convertible into Common Stock that are currently exercisable or convertible, or exercisable or convertible within 60 days of April 7, 2017 are deemed outstanding for computing the percentage of the person holding the option, warrant, preferred stock, or convertible security but are not deemed outstanding for computing the percentage of any other person.

Except as indicated by the footnotes below, we believe, based on the information furnished to it, that the persons and entities named in the table below have sole voting and investment power with respect to all shares of Common Stock that they beneficially own.

Name of Beneficial Owner	Amount and Nature of Beneficially Ownership (1)	Percent of Class	
Richard T. Schumacher (2)	2,467,112	7.39	%
Jeffrey N. Peterson (3)	1,160,830	3.56	%
Kevin A. Pollack (4)	1,049,992	3.24	%
Michael S. Urdea (5)	852,351	2.64	%
Vito J. Mangiardi (6)	670,532	2.09	%
Edmund Y. Ting, Ph.D. (7)	404,123	1.26	%
Alexander V. Lazarev, Ph.D. (8)	319,947	1.00	%
All other officers	325,635	1.01	%
All Executive Officers and Directors as a Group (9)	7,250,522	19.84	%

1) The terms of our Series D Convertible Preferred Stock and Series D warrants; Series G Convertible Preferred Stock; Series H Convertible Preferred Stock; Series J Convertible Preferred Stock; Series K Convertible Preferred Stock, and various Common Stock warrants issued in connection with our fundraising efforts contain a limitation on conversion which prevents the holder from converting shares of Series D, Series G, Series H, Series J, and Series K Convertible Preferred Stock into, or exercise of the warrants and various Common Stock warrants for, shares of Common Stock if, after giving effect to the conversion or exercise, as the case may be, the holder would beneficially own more than 4.99% of the outstanding shares of Common Stock. The holder may elect to increase this limitation to 9.99%, 14.99% or 19.99%, upon not less than 61 days prior written notice to us.

2) Includes (i) 1,051,946 shares of Common Stock issuable upon exercise of options; (ii) 63,000 shares of Common Stock issuable upon conversion of Series G Convertible Preferred Stock; (iii) 65,800 shares of Common Stock issuable upon conversion of Series J Convertible Preferred Stock; (iv) 78,571 shares of Common Stock issuable upon conversion of Convertible Debentures; (v) 314,793 shares of Common Stock issuable upon the exercise of warrants; and (vi) 893,001 shares of Common Stock. Does not include 20,162 shares of Common Stock held by Mr. Schumacher’s minor son as his wife exercises all voting and investment control over such shares.

3) Includes (i) 452,250 shares of Common Stock issuable upon exercise of options; (ii) 165,000 shares of Common Stock issuable upon conversion of Convertible Debentures; (iii) 151,000 shares of Common Stock issuable upon the exercise of warrants; and (iv) 392,580 shares of Common Stock.

4)

Includes (i) 258,000 shares of Common Stock issuable upon exercise of options; (ii) 183,335 shares of Common Stock issuable upon conversion of Convertible Debentures; (iii) 143,334 shares of Common Stock issuable upon the exercise of warrants; and (iv) 465,323 shares of Common Stock.

5) Includes (i) 220,500 shares of Common Stock issuable upon exercise of options; (ii) 180,714 shares of Common Stock issuable upon conversion of Convertible Debentures; (iii) 92,143 shares of Common Stock issuable upon the exercise of warrants; and (iv) 358,994 shares of Common Stock.

6) Includes (i) 258,000 shares of Common Stock issuable upon exercise of options; (ii) 39,286 shares of Common Stock issuable upon conversion of Convertible Debentures; (iii) 27,857 shares of Common Stock issuable upon the exercise of warrants; and (iv) 345,389 shares of Common Stock.

7) Includes (i) 379,668 shares of Common Stock issuable upon exercise of options; and (ii) 24,455 shares of Common Stock.

8) Includes (i) 307,640 shares of Common Stock issuable upon exercise of options; and (ii) 12,307 shares of Common Stock.

9) Includes (i) 3,230,921 shares of Common Stock issuable upon exercise of options; (ii) 646,906 shares of Common Stock issuable upon conversion of Convertible Debentures; (iii) 729,127 shares of Common Stock issuable upon the exercise of warrants; and (iv) 2,514,767 shares of Common Stock.

Equity Compensation Plan Information

We maintain a number of equity compensation plans for employees, officers, directors and other entities and individuals whose efforts contribute to our success. The table below sets forth certain information as of our fiscal year ended December 31, 2016 regarding the shares of our common stock available for grant or granted under our equity compensation plans.

Plan Category	Number of securities to be issued upon exercise of outstanding options	Weighted-average exercise price of outstanding options	Number of securities remaining available for future issuance under equity compensation plans
Equity compensation plans approved by security holders (1)	3,201,250	$ 0. 43	1,538,750
Equity compensation plans adopted by the Board of Directors (2)	2,068,000	0. 40	2,932,000

(1) Includes the following plans: 2005 Equity Incentive Plan and 2013 Equity Incentive Plan.

(2) Includes the following plan: 2015 Nonqualified Stock Option Plan.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

The following is a summary of transactions since January 1, 2016 to which we have been or will be a party in which the amount involved exceeded or will exceed $17,000 (one percent of the average of our total assets at year-end for our last two completed fiscal years) and in which any of our directors, executive officers or beneficial holders of more than 5% of any class of our capital stock, or any immediate family member of, or person sharing a household with, any of these individuals, had or will have a direct or indirect material interest, other than compensation arrangements that are described under the section of this prospectus captioned “Executive compensation.”

During the year ended December 31, 2016, we received advances from certain officers of ours amounting to $20,000 and we repaid the loans. These advances were non-interest bearing and were payable on demand.

On March 10, 2016, a relative of Mr. Schumacher invested $50,000 into the Company's 2015/2016 convertible debenture financing. The loan remains outstanding. The Holder was paid a 10% original investment discount ("OID") for the first year, and will earn 10% annual interest during the second year. The loan can be converted into common stock at any time by the Holder, at a fixed price of $0.28 per share. The loan is due two years after the loan origination date.

On March 23, 2016, Mr. Pollack invested $46,549 into the Company's 2015/2016 convertible debenture financing. The loan remains outstanding. The Holder was paid a 10% OID for the first year, and will earn 10% annual interest during the second year. The loan can be converted into common stock at any time by the Holder, at a fixed price of $0.28 per share. The loan is due two years after the loan origination date.

On March 31, 2016, Mr. Peterson invested $42,000 into the Company's 2015/2016 convertible debenture financing. The loan remains outstanding. The Holder was paid a 10% OID for the first year, and will earn 10% annual interest during the second year. The loan can be converted into common stock at any time by the Holder, at a fixed price of $0.28 per share. The loan is due two years after the loan origination date.

On March 31, 2016, Mr. Mangiardi invested $10,000 into the Company's 2015/2016 convertible debenture financing. The loan remains outstanding. The Holder was paid a 10% OID for the first year, and will earn 10% annual interest during the second year. The loan can be converted into common stock at any time by the Holder, at a fixed price of $0.28 per share. The loan is due two years after the loan origination date.

On March 31, 2016, Mr. Schumacher invested $20,000 into the Company's 2015/2016 convertible debenture financing. The loan remains outstanding. The loan was paid a 10% OID for the first year, and will earn 10% annual interest during the second year. The loan can be converted into common stock at any time by the Holder, at a fixed price of $0.28 per share. The loan is due two years after the loan origination date.

On March 31, 2016, a relative of Mr. Schumacher invested $30,000 into the Company's 2015/2016 convertible debenture financing. The loan remains outstanding. The loan was paid a 10% OID for the first year, and will earn 10% annual interest during the second year. The loan can be converted into common stock at any time by the Holder, at a fixed price of $0.28 per share. The loan is due two years after the loan origination date.

On March 31, 2016, Dr. Urdea invested $46,000 into the Company's 2015/2016 convertible debenture financing. The loan remains outstanding. The loan was paid a 10% OID for the first year, and will earn 10% annual interest during the second year. The loan can be converted into common stock at any time by the Holder, at a fixed price of $0.28 per

share. The loan is due two years after the loan origination date.

DESCRIPTION OF CAPITAL STOCK

Authorized Capital

As of December 31, 2016, we were authorized to issue 100,000,000 shares of common stock, $0.01 par value, and 1,000,000 shares of preferred stock, $0.01 par value. Of the 1,000,000 shares of preferred stock, 20,000 shares were designated as Series A Junior Participating Preferred Stock, 313,960 shares as Series A Convertible Preferred Stock, 279,256 shares as Series B Convertible Preferred Stock, 88,098 shares as Series C Convertible Preferred Stock, 850 shares as Series D Convertible Preferred Stock, 500 shares as Series E Convertible Preferred Stock, 240,000 shares as Series G Convertible Preferred Stock, 10,000 shares as Series H Convertible Preferred Stock, 21 shares as Series H2 Convertible Preferred Stock, 6,250 shares as Series J Convertible Preferred Stock and 15,000 shares as Series K Convertible Preferred Stock.

As of December 31 , 2016, there were 30, 999 ,839 shares of common stock issued and outstanding. Similarly, at such time, there were no shares of Series A Junior Participating Preferred Stock; Series A Convertible Preferred Stock; Series B Convertible Preferred Stock; Series C Convertible Preferred Stock; Series E Convertible Preferred Stock. As of December 31, 2016 there were 300 shares of Series D Convertible Preferred Stock issued and outstanding and convertible into 750,000 shares of common stock, 86,570 shares of Series G Convertible Preferred Stock issued and outstanding convertible into 865,700 shares of common stock, 10,000 shares of Series H Convertible Preferred Stock issued and outstanding convertible into 1,000,000 shares of common stock, 21 shares of Series H2 Convertible Preferred Stock issued and outstanding convertible into 2,100,000 shares of common stock, 3,521 shares of Series J Convertible Preferred Stock issued and outstanding convertible into 3,521,000 shares of common stock, and 6,816 shares of Series K Convertible Preferred Stock issued and outstanding convertible into 6,816,000 shares of common stock.

The transfer agent and registrar for our common stock is Computershare Trust Company.

Approximate Number of Equity Security Holders

As of April 7, 2017 , there were approximately 217 stockholders of record. Because shares of our common stock are held by depositaries, brokers and other nominees, the number of beneficial holders of our shares is substantially larger than the number of stockholders of record.

Dividends

We have never declared or paid any cash dividends on common stock and do not plan to pay any cash dividends on common stock in the foreseeable future.

As of December 31, 2016 , dividends issued or to be issued on convertible preferred stock for the years ended December 31, 2016 and 2015 are outlined in the table below.

Dividends paid in common stock or cash			**Dividends payable**		
For The Year Ended December 31,			**For The Year Ended December 31,**		
	2016	**2015**		**2016**	**2015**
Series D	$ -	$ -	Series D	$ -	$ -
Series E	-	-	Series E	-	-
Series G	-	-	Series G	1,200	1,200
Series H	-	-	Series H	-	-
Series H2	-	-	Series H2	-	-
Series J	442	-	Series J	83,484	83,926
Series K	63,413	14,894	Series K	108,620	170,607
	$ 63,855	$ 14,894		$ 193,304	$ 255,733

SHARES ELIGIBLE FOR FUTURE SALE

Future sales of substantial amounts of our common stock in the public market, including shares issued upon exercise of outstanding options and warrants, or the anticipation of these sales, could adversely affect prevailing market prices from time to time and could impair our ability to raise equity capital in the future.

Based on the number of shares of common stock outstanding as of , 2017 , after giving pro forma effect to the closing of this offering we will have shares of common stock outstanding, assuming (1) no exercise of the underwriters' option to purchase additional shares of common stock and (2) no exercise of outstanding options or warrants. Of those shares, all of the shares sold in this offering will be freely tradable, except that any shares held by our "affiliates," as that term is defined in Rule 144 under the Securities Act, or Rule 144, may only be sold in compliance with the limitations described below.

Rule 144

In general, under Rule 144, any person who is not our affiliate and has held their shares for at least six months, including the holding period of any prior owner other than one of our affiliates, may sell shares without restriction, subject to the availability of current public information about us. In addition, under Rule 144, any person who is not an affiliate of ours and has held their shares for at least one year, including the holding period of any prior owner other than one of our affiliates, would be entitled to sell an unlimited number of shares without regard to whether current public information about us is available. A person who is our affiliate or who was our affiliate at any time during the preceding three months, and who has beneficially owned restricted securities for at least six months, including the holding period of any prior owner other than one of our affiliates, is entitled to sell a number of shares within any three-month period that does not exceed the greater of:

- 1% of the number of shares of our common stock then outstanding, which will equal approximately [ ] shares immediately after this offering; or
- the average weekly trading volume of our common stock on the NASDAQ Capital Market during the four calendar weeks preceding the filing of a notice on Form 144 with respect to the sale.

Sales under Rule 144 by our affiliates are also subject to manner of sale provisions and notice requirements, and to the availability of current public information about us.

Warrants Offered Hereby

The following summary of certain terms and provisions of the warrants offered hereby is not complete and is subject to, and qualified in its entirety by, the provisions of the form of the warrant, which is filed as an exhibit to the registration statement of which this prospectus is a part of. Prospective investors should carefully review the terms and provisions set forth in the form of warrant.

Exercisability. The warrants are exercisable immediately upon issuance and at any time up to the date that is five years from the date of issuance. The warrants will be 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 (except in the case of a cashless exercise as discussed below). Unless otherwise specified in the warrant, the 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.

Cashless Exercise. In the event that a registration statement covering shares of common stock underlying the warrants, or an exemption from registration, is not available for the resale of such shares of common stock underlying the warrants, the holder may, in its sole discretion, exercise the warrant in whole or in part and, in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, elect instead to receive upon such exercise the net number of shares of common stock determined according to the formula set forth in the warrant. In no event shall we be required to make any cash payments or net cash settlement to the registered holder in lieu of issuance of common stock underlying the warrants.

Certain Adjustments. The exercise price and the number of shares of common stock purchasable upon the exercise of the warrants are subject to adjustment upon the occurrence of specific events, including stock dividends, stock splits, combinations and reclassifications of our common stock.

Transferability. Subject to applicable laws, the warrants may be transferred at the option of the holders upon surrender of the warrants to us together with the appropriate instruments of transfer.

Warrant Agent and Exchange Listing. The warrants will be issued in registered form under a warrant agency agreement between Computershare Trust Company, as warrant agent, and us.

Fundamental Transactions. If, at any time while the warrants are outstanding, (1) we consolidate or merge with or into another corporation and we are not the surviving corporation, (2) we sell, lease, license, assign, transfer, convey or otherwise dispose of all or substantially all of our assets, (3) any purchase offer, tender offer or exchange offer (whether by us or another individual or entity) is completed pursuant to which holders of our shares of common stock are permitted to sell, tender or exchange their shares of common stock for other securities, cash or property and has been accepted by the holders of 50% or more of our outstanding shares of common stock, (4) we effect any reclassification or recapitalization of our shares of common stock or any compulsory share exchange pursuant to which our shares of common stock are converted into or exchanged for other securities, cash or property, or (5) we consummate a stock or share purchase agreement or other business combination with another person or entity whereby such other person or entity acquires more than 50% of our outstanding shares of common stock, each a "Fundamental Transaction," then upon any subsequent exercise of the warrants, the holder thereof will have the right to receive the same amount and kind of securities, cash or property as it would have been entitled to receive upon the occurrence of such Fundamental Transaction if it had been, immediately prior to such Fundamental Transaction, the holder of the number of warrant shares then issuable upon exercise of the warrant, and any additional consideration payable as part of the 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.

Governing Law. The warrants and the warrant agency agreement are governed by New York law.

UNDERWRITING

Joseph Gunnar & Co., LLC is acting as representative of the underwriters (the "Representative"). Subject to the terms and conditions of an underwriting agreement between us and the Representative, 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 set forth on the cover page of this prospectus, the number of shares of common stock and warrants listed next to its name in the following table:

Name of Underwriter	Number of Shares	Number of Warrants
Joseph Gunnar & Co., LLC		
Total		

The underwriters are committed to purchase all the shares of common stock and warrants offered by us if they purchase any shares of common stock and warrants. The underwriting agreement also provides that if an underwriter defaults, the purchase commitments of non-defaulting underwriters may be increased or the offering may be terminated. The underwriters are not obligated to purchase the shares of common stock and/or warrants covered by the underwriters' over-allotment option described below. The underwriters are offering the shares of common stock 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 contained in the underwriting agreement, such as the receipt by the underwriters of officer's certificates and legal opinions. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

Discounts and Commissions

The underwriters propose initially to offer the shares of common stock and warrants to the public at the public offering price set forth on the cover page of this prospectus and to dealers at those prices less a concession not in excess of $ per share of common stock and warrant. If all of the shares of common stock 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 supplement to this prospectus.

The following table shows the public offering price, underwriting discounts and commissions and proceeds before expenses to us. The information assumes either no exercise or full exercise of the over-allotment option we granted to the representatives of the underwriters.

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

We have agreed to pay a non-accountable expense allowance to the representative of the underwriters equal to 1% of the gross proceeds received at the closing of the offering. The non-accountable expense allowance of 1% is not payable with respect to the shares sold upon exercise of the underwriters' over-allotment option. We have paid an expense deposit of $25,000 to the representative, which will be applied against the out-of-pocket accountable expenses that will be paid by us to the underwriters in connection with this offering, and will be reimbursed to us to the extent not actually incurred in compliance with FINRA Rule 5110(f)(2)(C).

We have also agreed to pay the representative's expenses relating to the offering, including (a) all actual filing fees incurred in connection with the review of this offering by the Financial Industry Regulatory Authority, or FINRA; (b) all fees, expenses and disbursements relating to background checks of our officers and directors in an amount not to exceed $15,000 in the aggregate; (c) the costs associated with bound volumes of the public offering materials as well as commemorative mementos and lucite tombstones not to exceed $2,000; (d) the fees and expenses of the representative's legal counsel not to exceed $75,000; (e) $29,500 for the underwriters' use of Ipreo's book-building, prospectus tracking and compliance software for this offering; and (f) up to $20,000 of the representative's actual accountable road show expenses for the offering.

The total estimated expenses of the offering, including registration, filing and listing fees, printing fees and legal and accounting expenses, but excluding underwriting discounts, commissions and expenses, are approximately $ and are payable by us.

Over-Allotment Option

We have granted a 45-day option to the representative of the underwriters to purchase up to additional shares of our common stock at a public offering price of $ per share and/or warrants to purchase shares of our common stock at a public offering price of $ per warrant, solely to cover over-allotments, if any. The underwriters may exercise this option for 45 days from the date of this prospectus solely to cover sales of shares of common stock and/or warrants by the underwriters in excess of the total number of shares of common stock and/or warrants set forth in the table above. If any of these additional shares and/or warrants are purchased, the underwriters will offer the additional shares and/or warrants on the same terms as those on which the shares and warrants are being offered. We will pay the expenses associated with the exercise of the over-allotment option.

74

Representatives' Warrants

We have agreed to issue to the representative the representative's warrants to purchase up to shares of common stock (5% of the shares of common stock and shares of common stock underlying warrants sold in this offering). We are registering hereby the issuance of the representative's warrants and the shares of common stock issuable upon exercise of the warrants. The representative's warrants will be exercisable at any time, and from time to time, in whole or in part, during the four-year period commencing one year from the effective date of the registration statement at a per share exercise price equal to 125% of the public offering price per share of common stock in the offering. The representative's warrants and the shares of common stock underlying the warrants have been deemed compensation by FINRA and are, therefore, subject to a 180-day lock-up pursuant to Rule 5110(g)(1) of FINRA. The representatives (or permitted assignees under the Rule) will not sell, transfer, assign, pledge or hypothecate these warrants or the securities underlying these warrants, nor will it engage in any hedging, short sale, derivative, put or call transaction that would result in the effective economic disposition of these warrants or the underlying securities for a period of 180 days after the effective date. 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.

Lock-Up Agreements

Pursuant to "lock-up" agreements, we, our executive officers and directors, and any other 5% or greater holder of our outstanding common stock, have agreed, without the prior written consent of the Representative not to directly or indirectly, offer to sell, sell, pledge or otherwise transfer or dispose of any of shares of (or enter into any transaction or device that is designed to, or could be expected to, result in the transfer or disposition by any person at any time in the future of) our common stock, enter into any swap or other derivatives transaction that transfers to another, in whole or in part, any of the economic benefits or risks of ownership of shares of our common stock, make any demand for or exercise any right or cause to be filed a registration statement, including any amendments thereto, with respect to the registration of any shares of common stock or securities convertible into or exercisable or exchangeable for common stock or any other securities of ours or publicly disclose the intention to do any of the foregoing, subject to customary exceptions, for a period of (i) six month after the date of this prospectus in the case of our directors and officers and (ii) three months after the date of this prospectus in the case of the Company and any other 5% or greater holder of our outstanding securities.

Right of First Refusal

Until eighteen (18) months from the effective date of this registration statement, the representative shall have an irrevocable right of first refusal to act as sole investment banker, sole book-runner, and/or sole placement agent, at the

Representative's sole discretion, for each and every future public and private equity and debt offering, including all equity linked financings on terms customary to the representative. The representative shall have the sole right to determine whether or not any other broker-dealer shall have the right to participate in any such offering and the economic terms of any such participation. The representative will not have more than one opportunity to waive or terminate the right of first refusal in consideration of any payment or fee.

Indemnification

We have agreed to indemnify the underwriters against certain liabilities that may be incurred in connection with this offering, including liabilities under the Securities Act, and to contribute to payments that the underwriters may be required to make for these liabilities.

OTCQB and NASDAQ

Our shares of common are quoted on the OTCQB under the symbol “PBIO.” We intend to apply to list our common stock and warrants on The NASDAQ under the symbols “PBIO” and “ ”, respectively, prior to the completion of this offering. No assurance can be given that such listings will be approved; however, it is a condition of the underwriters’ obligation that our shares of common stock and warrants have been approved for listing on The NASDAQ.

Price Stabilization, Short Positions and Penalty Bids

In order to facilitate the offering of our securities, the underwriters may engage in transactions that stabilize, maintain or otherwise affect the price of our securities. In connection with the offering, the underwriters may purchase and sell our securities in the open market. These transactions may include short sales, purchases on the open market to cover positions created by short sales and stabilizing transactions. Short sales involve the sale by the underwriters of a greater number of shares of securities than they are required to purchase in the offering. “Covered” short sales are sales made in an amount not greater than the underwriters’ option to purchase additional shares of securities in the offering. The underwriters may close out any covered short position by either exercising the over-allotment option or purchasing shares of securities in the open market. In determining the source of shares of securities to close out the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the over-allotment option. “Naked” short sales are sales in excess of the over-allotment option. The underwriters must close out any naked short position by purchasing securities in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of our securities in the open market after pricing that could adversely affect investors who purchase in the offering. Stabilizing transactions consist of various bids for or purchases of shares of securities made by the underwriters in the open market before the completion of the offering.

Similar to other purchase transactions, the underwriters’ purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our securities or preventing or retarding a decline in the market price of our securities. As result, the price of our securities may be higher than the price that might otherwise exist in the open market.

The underwriters have advised us that, pursuant to Regulation M under the Exchange Act, they may also engage in other activities that stabilize, maintain or otherwise affect the price of our securities, including the imposition of penalty bids. This means that if the representative of the underwriters purchases securities in the open market in stabilizing transactions or to cover short sales, the representative can require the underwriters that sold those shares as part of this offering to repay the underwriting discount received by them. The underwriters make no representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our securities. In addition, neither we nor the underwriters make any representation that the underwriters will engage

in these transactions or that these transactions, once commenced, will not be discontinued without notice.

Electronic Offer, Sale and Distribution of Shares

A prospectus in electronic format may be made available on the websites maintained by one or more underwriters or selling group members, if any, participating in the offering. The underwriters may agree to allocate a number of shares of securities to underwriters and selling group members for sale to their online brokerage account holders. Internet distributions will be allocated by the representative to underwriters and selling group members that may make internet distributions on the same basis as other allocations. Other than the prospectus in electronic format, the information on the underwriters' websites and any information contained in any other website maintained by the underwriters is not part of this prospectus or the registration statement of which this prospectus forms a part.

Other Relationships

From time to time, certain of the underwriters and their affiliates have provided, and may provide in the future, various advisory, investment and commercial banking and other services to us in the ordinary course of business, for which they have received and may continue to receive customary fees and commissions. However, except as disclosed in this prospectus, we have no present arrangements with any of the underwriters for any further services.

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 in any jurisdiction where action for that purpose is required. The securities offered by this prospectus may not be offered or sold, directly or indirectly, nor may this prospectus 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 comes are advised to inform themselves about and to observe any restrictions relating to the offering and the distribution of this prospectus. This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any securities offered by this prospectus 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 securities under this prospectus is only made to persons to whom it is lawful to offer the securities 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 securities sold to the offeree within 12 months after its transfer to the offeree under this prospectus.

Canada

The securities may be sold in Canada only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Any resale of the securities must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws. Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor. Pursuant to section 3A.3 of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the

underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

China

The information in this document does not constitute a public offer of the securities, 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 securities 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 securities will be made pursuant to an exemption under the Directive 2003/71/EC ("Prospectus Directive"), as implemented 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 securities 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 ours 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 securities shall result in a requirement for the publication by us 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 securities 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 securities 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 securities 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 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 securities 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 securities offered by this prospectus have not been approved or disapproved by the Israeli Securities Authority (the ISA), nor have such securities been registered for sale in Israel. The shares 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; nor has it authenticated the details included herein, confirmed their reliability or completeness, or rendered an opinion as to the quality of the securities being offered. Any resale in Israel, directly or indirectly, to the public of the securities offered by this prospectus 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 securities in the Republic of Italy has not been authorized by the Italian Securities and Exchange Commission (Commissione Nazionale per le Societ—$$—Aga e la Borsa, "CONSOB" pursuant to the Italian securities legislation and, accordingly, no offering material relating to the securities 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. 1197l") 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 securities or distribution of any offer document relating to the securities 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 securities 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 securities being declared null and void and in the liability of the entity transferring the securities for any damages suffered by the investors.

Japan

The securities 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 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 securities 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 securities may not resell them to any person in Japan that is not a Qualified Institutional Investor, and acquisition by any such person of securities 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 securities 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 securities 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 securities 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 securities 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 securities 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 securities 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 securities may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering material relating to the securities 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 securities will not be supervised by, the Swiss Financial Market Supervisory Authority (FINMA).

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

United Arab Emirates

Neither this document nor the securities have 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 Emirates, nor have we 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 securities 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 securities, 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 securities 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 securities. 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 securities 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 securities 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 us.

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.

LEGAL MATTERS

The validity of the securities offered hereby has been passed upon for us by Lucosky Brookman LLP. Certain legal matters in connection with this offering have been passed upon for the underwriters by Loeb & Loeb LLP, New York, New York.

EXPERTS

Our consolidated balance sheets as of December 31, 2016 and 2015 and the related consolidated statements of operations, comprehensive loss, changes in stockholders' deficit, and cash flows for the years then ended have been audited by MaloneBailey LLP, an independent registered public accounting firm, as set forth in its report appearing herein and are included 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 have filed with the SEC a registration statement on Form S-1 under the Securities Act with respect to the securities offered hereby. This prospectus, which constitutes a part of the registration statement, does not contain all of the information in the registration statement and the exhibits of 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, including the exhibits and schedules thereto.

You may read and copy the registration statement of which this prospectus is a part at the SEC's Public Reference Room, which is located at 100 F Street, N.E., Washington, D.C. 20549. You can request copies of the registration statement by writing to the SEC and paying a fee for the copying cost. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the SEC's Public Reference Room. In addition, the SEC maintains an Internet web site, which is located at *www.sec.gov*, which contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC. You may access the registration statement of which this prospectus is a part at the SEC's Internet web site. We are subject to the information reporting requirements of the Exchange Act, and we will file reports, proxy statements and other information with the SEC.

PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY

INDEX TO FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of

Pressure BioSciences, Inc. and Subsidiary

South Easton, Massachusetts

We have audited the consolidated balance sheets of Pressure BioSciences, Inc. and Subsidiary (collectively, the "Company") as of December 31, 2016 and 2015, and the related consolidated statements of operations, comprehensive loss, changes in stockholders' deficit, and cash flows for the years then ended. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform an audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. Our audit included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the consolidated financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Pressure BioSciences, Inc. and Subsidiary as of December 31, 2016 and 2015, and the results of their operations and their cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 2 to the consolidated financial statements, the Company has a working capital deficit and has incurred recurring net losses and negative cash flows from operations. These conditions raise substantial doubt about its ability to continue as a going concern. Management's plans regarding those matters are also described in Note 2. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

/s/ MaloneBailey LLP

Houston, Texas

March 22, 2017, except for Note 10 as to which the date is April 10, 2017

PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY

CONSOLIDATED BALANCE SHEETS
DECEMBER 31, 2016 AND 2015

	December 31, 2016	December 31, 2015
ASSETS		
CURRENT ASSETS		
Cash and cash equivalents	$ 138,363	$ 116,783
Accounts receivable, net of $28,169 reserve at December 31, 2016 and $0 at December 31, 2015	281,320	113,256
Inventories, net of $20,000 reserve at December 31, 2016 and $50,000 at December 31, 2015	905,284	1,038,371
Prepaid income taxes	7,405	7,381
Prepaid expenses and other current assets	258,103	213,926
Total current assets	1,590,475	1,489,717
Investment in available-for-sale equity securities	25,865	294,522
Property and equipment, net	9,413	20,149
TOTAL ASSETS	$ 1,625,753	$ 1,804,388
LIABILITIES AND STOCKHOLDERS' DEFICIT		
CURRENT LIABILITIES		
Accounts payable	$ 407,249	$ 941,389
Accrued employee compensation	249,596	176,009
Accrued professional fees and other	956,884	821,088
Deferred revenue	159,654	140,878
Revolving note payable, net of unamortized debt discounts of $637,030 and $0, respectively	612,970	-
Convertible debt, net of unamortized discounts of $2,235,839 and $0, respectively	4,005,702	100,000
Other debt, net of unamortized discounts of $380 and $3,041, respectively	238,157	151,628
Warrant derivative liabilities	1,685,108	3,295,976
Conversion option derivative liabilities	951,059	3,940,791
Total current liabilities	9,266,379	9,567,759
LONG TERM LIABILITIES		
Related party convertible debt, net of unamortized debt discounts of $165,611 and $0, respectively	125,523	-
Convertible debt, net of unamortized discounts of $740,628 and $5,223,658, respectively	529,742	177,342
Deferred revenue	87,527	36,935
TOTAL LIABILITIES	10,009,171	9,782,036
COMMITMENTS AND CONTINGENCIES (Note 7)		
STOCKHOLDERS' DEFICIT		
	3	3

Series D Convertible Preferred Stock, $.01 par value; 850 shares authorized; 300 shares issued and outstanding on December 31, 2016 and 2015, respectively (Liquidation value of $300,000)		
Series G Convertible Preferred Stock, $.01 par value; 240,000 shares authorized; 86,570 shares issued and outstanding on December 31, 2016 and 2015, respectively	866	866
Series H Convertible Preferred Stock, $.01 par value; 10,000 shares authorized; 10,000 shares issued and outstanding on December 31, 2016 and 2015, respectively	100	100
Series H2 Convertible Preferred Stock, $.01 par value; 21 shares authorized; 21 shares issued and outstanding on December 31, 2016 and 2015, respectively	-	-
Series J Convertible Preferred Stock, $.01 par value; 6,250 shares authorized; 3,521 and 3,546 shares issued and outstanding on December 31, 2016 and 2015, respectively	35	36
Series K Convertible Preferred Stock, $.01 par value; 15,000 shares authorized; 6,816 and 11,416 shares issued and outstanding on December 31, 2016 and 2015, respectively	68	114
Common stock, $.01 par value; 100,000,000 shares authorized; 30,999,839 and 23,004,898 shares issued and outstanding on December 31, 2016 and 2015, respectively	309,998	230,050
Warrants to acquire common stock	6,325,102	5,416,681
Additional paid-in capital	27,244,600	26,036,733
Accumulated other comprehensive loss	-	(105,025)
Accumulated deficit	(42,264,190)	(39,557,206)
Total stockholders' deficit	(8,383,418)	(7,977,648)
TOTAL LIABILITIES AND STOCKHOLDERS' DEFICIT	$ 1,625,753	$ 1,804,388

The accompanying notes are an integral part of these consolidated financial statements.

PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY

CONSOLIDATED STATEMENTS OF OPERATIONS

FOR THE YEARS ENDED DECEMBER 31, 2016 AND 2015

	For the Year Ended December 31,	
	2016	2015
Revenue:		
Products, services, other	$ 1,794,749	$ 1,409,991
Grant revenue	181,738	387,700
Total revenue	1,976,487	1,797,691
Costs and expenses:		
Cost of products and services	834,012	609,054
Research and development	1,183,011	1,105,295
Selling and marketing	872,365	745,574
General and administrative	2,822,752	2,902,950
Total operating costs and expenses	5,712,140	5,362,873
Operating loss	(3,735,653)	(3,565,182)
Other (expense) income:		
Interest expense	(4,501,186)	(4,146,416)
Other expense	(1,112)	(36,879)
Impairment loss on investment	(373,682)	-
Gain on extinguishment of embedded derivative liabilities	-	2,555,180
Change in fair value of derivative liabilities	5,904,649	(2,222,001)
Total other (expense) income	1,028,669	(3,850,116)
Net loss	(2,706,984)	(7,415,298)
Accrued dividends on convertible preferred stock	-	(23,194)
Net loss applicable to common shareholders	$ (2,706,984)	$ (7,438,492)
Net loss per share attributable to common stockholders - basic and diluted	$ (0.10)	$ (0.36)
Weighted average common stock shares outstanding used in the basic and diluted net loss per share calculation	27,339,362	20,726,205

The accompanying notes are an integral part of these consolidated financial statements.

F-4

PRESSURE BIOSCIENCES, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

FOR THE YEARS ENDED DECEMBER 31, 2016 AND 2015

	For the Year Ended December 31,	
	2016	**2015**
Comprehensive Loss		
Net loss	$ (2,706,984)	$ (7,415,298)
Other comprehensive loss		
Unrealized loss on marketable securities	105,025	(105,025)
Comprehensive loss	$ (2,601,959)	$ (7,520,323)

PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY

CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' DEFICIT

FOR THE YEARS ENDED DECEMBER 31, 2016 AND 2015

	Series D Preferred Stock		Series G Preferred Stock		Series H Preferred Stock		Series H(2) Preferred Stock	
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount
BALANCE, December 31, 2014	300	$ 3	86,570	$ 866	10,000	$ 100	21	$ -
Stock-based compensation	-	-	-	-	-	-	-	-
Issuance of common stock for services	-	-	-	-	-	-	-	-
Warrant revaluation	-	-	-	-	-	-	-	-
Stock exchange with Everest Investments	-	-	-	-	-	-	-	-
Issuance of warrants for services	-	-	-	-	-	-	-	-
Conversion of debt and interest for common stock	-	-	-	-	-	-	-	-
Dividends earned	-	-	-	-	-	-	-	-
Unrealized loss on investments, net of tax	-	-	-	-	-	-	-	-
Net loss	-	-	-	-	-	-	-	-
BALANCE, December 31, 2015	300	$ 3	86,570	$ 866	10,000	$ 100	21	$ -
Stock-based compensation	-	-	-	-	-	-	-	-
Issuance of common stock for services	-	-	-	-	-	-	-	-
Warrant revaluation	-	-	-	-	-	-	-	-
Warrant exercise	-	-	-	-	-	-	-	-
Stock exchange with Everest Investments	-	-	-	-	-	-	-	-
Issuance of warrants for services	-	-	-	-	-	-	-	-
Conversion of debt and interest for common stock	-	-	-	-	-	-	-	-
Issuance of common stock for dividends paid-in-kind	-	-	-	-	-	-	-	-
Conversion of Series J convertible preferred stock	-	-	-	-	-	-	-	-
Conversion of Series K convertible preferred stock	-	-	-	-	-	-	-	-
Common Stock offering	-	-	-	-	-	-	-	-

Offering costs for issuance of common stock	-	-	-	-	-	-	-	-
Stock issued with debt	-	-	-	-	-	-	-	-
Warrants issued with debt	-	-	-	-	-	-	-	-
Unrealized loss on investments, net of tax	-	-	-	-	-	-	-	-
Net loss	-	-	-	-	-	-	-	-
BALANCE, December 31, 2016	300	$ 3	86,570	$ 866	10,000	$ 100	21	$ -

The accompanying notes are an integral part of these consolidated financial statements

PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY

CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' DEFICIT (CONTINUED)

FOR THE YEARS ENDED DECEMBER 31, 2016 AND 2015

	Series J Preferred Stock		Series K Preferred Stock		Common Stock		Stock	Addition Paid-In
	Shares	Amount	Shares	Amount	Shares	Amount	Warrants	Capital
BALANCE, December 31, 2014	3,546	$ 36	11,416	$ 114	18,673,390	$ 186,734	$ 5,253,566	$ 24,61
Stock-based compensation	-	-	-	-	-	-	-	208,9
Issuance of common stock for services	-	-	-	-	1,755,091	17,551	-	439,4
Warrant revaluation	-	-	-	-	-	-	69,627	-
Stock exchange with Everest Investments	-	-	-	-	1,000,000	10,000	-	389,5
Issuance of warrants for services	-	-	-	-	-	-	93,488	-
Conversion of debt and interest for common stock	-	-	-	-	1,576,417	15,765	-	381,1
Dividends earned	-	-	-	-	-	-	-	-
Unrealized loss on investments, net of tax	-	-	-	-	-	-	-	-
Net loss	-	-	-	-	-	-	-	-
BALANCE, December 31, 2015	3,546	$ 36	11,416	$ 114	23,004,898	$ 230,050	$ 5,416,681	$ 26,03
Stock-based compensation	-	-	-	-	-	-	-	379,9
Issuance of common stock for services	-	-	-	-	755,000	7,550	-	325,1
Warrant exercise	-	-	-	-	22,996	230	(11,100)	10,87
Issuance of warrants for services	-	-	-	-	-	-	84,735	-
Conversion of debt and interest for	-	-	-	-	420,849	4,208	-	113,6

common stock								
Issuance of common stock for dividends paid-in-kind	-	-	-	-	248,547	2,485	-	61,37
Conversion of Series J convertible preferred stock	(25)	(1)	-	-	25,000	250	-	(249
Conversion of Series K convertible preferred stock	-	-	(4,600)	(46)	4,600,000	46,000	-	(45,9
Common stock offering	-	-	-	-	1,525,000	15,250	315,301	279,4
Offering costs for issuance of common stock	-	-	-	-	-	-	-	(79,0
Stock issued with debt	-	-	-	-	397,549	3,975	-	141,9
Warrants issued with debt	-	-	-	-	-	-	519,485	-
Beneficial conversion feature	-	-	-	-	-	-	-	20,72
Unrealized loss on investments, net of tax	-	-	-	-	-	-	-	-
Net loss	-	-	-	-	-	-	-	-
BALANCE, December 31, 2016	3,521	$ 35	6,816	$ 68	30,999,839	$ 309,998	$ 6,325,102	$ 27,24

The accompanying notes are an integral part of these consolidated financial statements.

PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY

CONSOLIDATED STATEMENTS OF CASH FLOWS

FOR THE YEARS ENDED DECEMBER 31, 2016 AND 2015

	For the Year Ended December 31,	
	2016	**2015**
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net loss	$ (2,706,984)	$ (7,415,298)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	17,939	25,288
Provision for bad debts	28,169	-
Accretion of interest and amortization of debt discount	4,003,485	2,989,765
Penalty interest added to debt principal	41,200	-
Gain on settlement of debt	(5,044)	-
Stock-based compensation expense	379,964	208,989
Warrant expense	84,735	163,115
Amortization of third party fees paid in common stock	332,696	457,030
Impairment loss on investment	373,682	-
Gain on extinguishment of embedded derivative liabilities	-	(2,555,180)
Change in fair value of derivative liabilities	(5,904,649)	2,222,001
Changes in operating assets and liabilities:		
Accounts receivable	(196,233)	158,766
Inventories	133,087	(187,820)
Prepaid expenses and other assets	(44,201)	(15,722)
Accounts payable	(534,140)	(94,392)
Accrued employee compensation	73,587	18,662
Deferred revenue and other accrued expenses	116,856	205,050
Net cash used in operating activities	(3,805,851)	(3,819,746)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Purchases of property plant and equipment	(7,203)	(9,412)
Net cash used in investing activities	(7,203)	(9,412)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Net proceeds from related party debt	116,667	6,300
Payment of related party debt	(20,000)	(12,300)
Net proceeds from revolving note payable	1,133,500	-
Net proceeds from convertible debt	2,105,420	5,558,537
Payments on convertible debt	(107,000)	(2,653,990)
Net proceeds from non-convertible debt	1,022,784	1,257,418
Payments on non-convertible debt	(947,702)	(587,949)
Net proceeds from the issuance of common stock	530,965	-

Payment of accrued prepayment penalty	-	(96,023)
Net cash provided by financing activities	3,834,634	3,471,993
NET INCREASE (DECREASE) IN CASH	21,580	(357,165)
CASH AT BEGINNING OF YEAR	116,783	473,948
CASH AT END OF PERIOD	$ 138,363	$ 116,783
SUPPLEMENTAL INFORMATION		
Interest paid in cash	$ 260,979	$ 1,072,900
Income taxes paid in cash	-	-
NON CASH TRANSACTIONS:		
Shares issued for conversion of debt and interest	117,837	396,919
Cashless exercise of warrants	11,100	-
Discount due to beneficial conversion feature	20,721	-
Discount due to warrants issued with debt	519,485	-
Common stock issued with debt	104,731	-
Common stock issued to settle non-convertible debt	41,200	-
Conversion of preferred stock and accrued dividends into common stock	63,902	-
Accrued dividends on preferred stock	-	23,194
Issuance of common stock for investment in available-for-sale equity securities	-	399,547
Unrealized loss from available-for-sale equity securities	-	105,025
Debt discount from derivative liability	1,304,049	6,819,730
Debt discount related to accrual of one-time interest	170,000	-
Extension fees added to principal	-	84,000
Prepayment penalty and accrued interest enrolled into debt principal	-	48,950
Reversal of accumulated other comprehensive income to impairment loss on investment	105,025	-

The accompanying notes are an integral part of these consolidated financial statements.

PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Pressure Biosciences, Inc. (“we”, “our”, “the Company”) is focused on solving the challenging problems inherent in biological sample preparation, a crucial laboratory step performed by scientists worldwide working in biological life sciences research. Sample preparation is a term that refers to a wide range of activities that precede most forms of scientific analysis. Sample preparation is often complex, time-consuming, and in our belief, one of the most error-prone steps of scientific research. It is a widely-used laboratory undertaking, the requirements of which drive what we believe is a large and growing worldwide market. We have developed and patented a novel, enabling technology platform that can control the sample preparation process. It is based on harnessing the unique properties of high hydrostatic pressure. This process, called pressure cycling technology, or PCT, uses alternating cycles of hydrostatic pressure between ambient and ultra-high levels (35,000 psi or greater) to safely, conveniently and reproducibly control the actions of molecules in biological samples, such as cells and tissues from human, animal, plant, and microbial sources.

Our pressure cycling technology uses internally developed instrumentation that is capable of cycling pressure between ambient and ultra-high levels - at controlled temperatures and specific time intervals - to rapidly and repeatedly control the interactions of bio-molecules, such as DNA, RNA, proteins, lipids, and small molecules. Our laboratory instrument, the Barocycler®®, and our internally developed consumables product line, including PULSE® (Pressure Used to Lyse Samples for Extraction) Tubes, other processing tubes, and application specific kits (which include consumable products and reagents) together make up our PCT Sample Preparation System, or PCT SPS.

In 2015, together with an investment bank, we formed a subsidiary called Pressure BioSciences Europe (“PBI Europe”) in Poland. We have 49% ownership interest with the investment bank retaining 51%. As of now, PBI Europe does not have any operating activities and we cannot reasonably predict when operations will commence. Therefore, we do not have control of the subsidiary and did not consolidate in our financial statements. PBI Europe did not have any operations in 2016 or in 2015.

(2) Going Concern

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern, which contemplates the realization of assets and the liquidation of liabilities in the normal course of business. However, we have experienced negative cash flows from operations with respect to our pressure cycling technology business since our inception. As of December 31, 2016, we do not have adequate working capital resources to satisfy our current liabilities and as a result, there is substantial doubt regarding our ability to continue as a going concern. We have been successful in raising cash through debt and equity offerings in the past and as described in Note 6,

completed debt financing subsequent to December 31, 2016. We have financing efforts in place to continue to raise cash through debt and equity offerings.

Management has developed a plan to continue operations. This plan includes obtaining equity or debt financing. During the year ended December 31, 2016 we received $4,378,371 net proceeds, in additional convertible and non-convertible debt. Although we have successfully completed financings and reduced expenses in the past, we cannot assure you that our plans to address these matters in the future will be successful.

We need substantial additional capital to fund normal operations in future periods. In the event that we are unable to obtain financing on acceptable terms, or at all, we will likely be required to cease our operations, pursue a plan to sell our operating assets, or otherwise modify our business strategy, which could materially harm our future business prospects. These financial statements do not include any adjustments that might result from this uncertainty.

(3) Summary of Significant Accounting Policies

i. Principles of Consolidation

The consolidated financial statements include the accounts of Pressure BioSciences, Inc., and its wholly-owned subsidiary PBI BioSeq, Inc. All intercompany accounts and transactions have been eliminated in consolidation.

ii. Use of Estimates

To prepare our consolidated financial statements in conformity with accounting principles generally accepted in the United States of America, we are required to make significant estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. In addition, significant estimates were made in projecting future cash flows to quantify impairment of assets, deferred tax assets, the costs associated with fulfilling our warranty obligations for the instruments that we sell, and the estimates employed in our calculation of fair value of stock options awarded, beneficial conversion features and derivative liabilities. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results could differ from the estimates and assumptions used.

iii. Revenue Recognition

Revenue is recognized when realized or when realizable and earned when all the following criteria have been met: persuasive evidence of an arrangement exists; goods were shipped, delivery of service has occurred and risk of loss has passed to the customer; the seller’s price to the buyer is fixed or determinable; and collectability is reasonably assured.

Our current instruments, the Barocycler NEP3229 and NEP2320, require a basic level of instrumentation expertise to set-up for initial operation. To support a favorable first experience for our customers, upon customer request and for an additional fee, we will send a highly trained technical representative to the customer site to install Barocyclers that we sell, lease, or rent through our domestic sales force. The installation process includes uncrating and setting up the instrument, followed by introductory user training. Product revenue related to current Barocycler instrumentation is recognized upon shipment of the unit, or in the case where the customer requests installation and training, the completion of the installation and introductory training process of the instrumentation at the customer location, for domestic installations. Product revenue related to sales of PCT instrumentation to our foreign distributors is recognized upon shipment through a common carrier. We provide for the expected costs of warranty upon the recognition of revenue for the sales of our instrumentation. Our sales arrangements do not provide our customers with a right of return. Product revenue related to the HUB440 and our consumable products such as PULSE Tubes, MicroTubes, and application specific kits is recorded upon shipment through a common carrier. Shipping costs are included in sales and marketing expense. Any shipping costs billed to customers are recognized as revenue.

The Company applies ASC 845, “Accounting for Non-Monetary Transactions”, to account for products and services sold through non-cash transactions based on the fair values of the products and services involved, where such values

can be determined. Non-cash exchanges would require revenue to be recognized at recorded cost or carrying value of the assets or services sold if any of the following conditions apply:

a) The fair value of the asset or service involved is not determinable.

b) The transaction is an exchange of a product or property held for sale in the ordinary course of business for a product or property to be sold in the same line of business to facilitate sales to customers other than the parties to the exchange.

c) The transaction lacks commercial substance.

The Company currently records revenue for its non-cash transactions at recorded cost or carrying value of the assets or services sold.

We account for our lease agreements under the operating method. We record revenue over the life of the lease term and we record depreciation expense on a straight-line basis over the thirty-six month estimated useful life of the Barocycler instrument. The depreciation expense associated with assets under lease agreement is included in the “Cost of PCT products and services” line item in our consolidated statements of operations. Many of our lease and rental agreements allow the lessee to purchase the instrument at any point during the term of the agreement with partial or full credit for payments previously made. We pay all maintenance costs associated with the instrument during the term of the leases.

Revenue from government grants is recorded when qualifying expenses are incurred under the grant in accordance with the terms of the grant award.

Deferred revenue represents amounts received from grants and the Company’s service contracts for which the related revenues have not been recognized because one or more of the revenue recognition criteria have not been met. The current portion of deferred revenue represents the amount to be recognized within one year from the balance sheet date based on the estimated performance period of the underlying deliverables. Revenue from service contracts is recorded ratably over the length of the contract.

Our transactions sometimes involve multiple elements (i.e., products and services). Revenue under multiple element arrangements is recognized in accordance with FASB ASC 605-25 *Multiple-Element Arrangements (“ASC 605”).* When vendor specific objective evidence or third party evidence of selling price for deliverables in an arrangement cannot be determined, the Company develops a best estimate of the selling price to separate deliverables and allocates arrangement consideration using the relative selling price method. If an arrangement includes undelivered elements that are not essential to the functionality of the delivered elements, we defer the fair value of the undelivered elements to such time as they are delivered. Fair value is determined based upon the price charged when the element is sold separately. If there is not sufficient evidence of the fair value of the undelivered elements the Company uses its best estimate of the value of those items and recognizes revenues based on the relative values of the delivered and

undelivered items. We provide certain customers with extended service contracts with revenue recognized ratably over the life of the contract.

iv. Cash and Cash Equivalents

Our policy is to invest available cash in short-term, investment grade interest-bearing obligations, including money market funds, and bank and corporate debt instruments. Securities purchased with initial maturities of three months or less are valued at cost plus accrued interest, which approximates fair value, and are classified as cash equivalents.

v. Research and Development

Research and development costs, which are comprised of costs incurred in performing research and development activities including wages and associated employee benefits, facilities, consumable products and overhead costs that are expensed as incurred. In support of our research and development activities we utilize our Barocycler instruments that are capitalized as fixed assets and depreciated over their expected useful life.

vi. Inventories

Inventories are valued at the lower of cost (average cost) or market (sales price). The cost of Barocyclers consists of the cost charged by the contract manufacturer. The cost of manufactured goods includes material, freight-in, direct labor, and applicable overhead. The composition of inventory as of December 31, is as follows:

	2016	**2015**
Raw materials	$ 326,228	$ 310,367
Finished goods	599,056	778,004
Inventory reserve	(20,000)	(50,000)
Total	$ 905,284	$ 1,038,371

vii. Property and Equipment

Property and equipment are stated at cost, less accumulated depreciation. For financial reporting purposes, depreciation is recognized using the straight-line method, allocating the cost of the assets over their estimated useful lives of three years for certain laboratory equipment, from three to five years for management information systems and office equipment, and three years for all PCT finished units classified as fixed assets.

viii. Intangible Assets

We have classified as intangible assets, costs associated with the fair value of acquired intellectual property. Intangible assets, including patents, are being amortized on a straight-line basis over sixteen years. We perform an annual review of our intangible assets for impairment. When impairment is indicated, any excess of carrying value over fair value is recorded as a loss. As of December 31, 2016 and 2015, the outstanding balance for intangible assets is zero.

ix. Long-Lived Assets

The Company's long-lived assets are reviewed for impairment in accordance with the guidance of the FASB ASC 360-10-05, *Property, Plant, and Equipment*, whenever events or changes in circumstances indicate that the carrying amount of the asset may not be recoverable. Recoverability of an asset to be held and used is measured by a comparison of the carrying amount of an asset to the future undiscounted cash flows expected to be generated by the asset. If such asset is considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the asset exceeds its fair value. Through December 31, 2016, the Company had not experienced impairment losses on its long-lived assets. While our current and historical operating losses and cash flow are indicators of impairment, we performed an impairment test at December 31, 2016 and determined that such long-lived assets were not impaired.

x. Concentrations

Credit Risk

Our financial instruments that potentially subject us to concentrations of credit risk consist primarily of cash, cash equivalents and trade receivables. We have cash investment policies which, among other things, limit investments to investment-grade securities. We perform ongoing credit evaluations of our customers, and the risk with respect to trade receivables is further mitigated by the fact that many of our customers are government institutions and university labs. Allowances are provided for estimated amounts of accounts receivable which may not be collected. At December 31, 2016 and 2015, we determined that no allowance against accounts receivable was necessary.

The following table illustrates the level of concentration of the below two groups within revenue as a percentage of total revenues during the years ended December 31:

	2016		**2015**	
Top Five Customers	29	%	38	%
Federal Agencies	3	%	23	%

The following table illustrates the level of concentration of the below two groups within accounts receivable as a percentage of total accounts receivable balance as of December 31:

	2016		2015	
Top Five Customers	82	%	93	%
Federal Agencies	1	%	1	%

Investment in Available-For-Sale Equity Securities

As of December 31, 2016, we held 601,500 shares of common stock of Everest, a Polish publicly traded company listed on the Warsaw Stock Exchange. We exchanged 1,000,000 shares of our common stock for the 601,500 shares from Everest. We account for this investment in accordance with ASC 320 *"Investments — Debt and Equity Securities"* as securities available for sale. On December 31, 2016, our consolidated balance sheet reflected the fair value of our investment in Everest to be $25,865, based on the closing price of Everest shares of $0.043 per share on that day. The carrying value of our investment in Everest common stock held will change from period to period based on the closing price of the common stock of Everest as of the balance sheet date. The change in market value since the receipt of stock amounting to $373,682 was determined to be other than temporary and was recorded by us as an impairment loss in 2016.

xi. Computation of Loss per Share

Basic loss per share is computed by dividing loss available to common shareholders by the weighted average number of common shares outstanding. Diluted loss per share is computed by dividing loss available to common shareholders by the weighted average number of common shares outstanding plus additional common shares that would have been outstanding if dilutive potential common shares had been issued. For purposes of this calculation, convertible preferred stock, common stock dividends, warrants to acquire preferred stock convertible into common stock, and warrants and options to acquire common stock, are all considered common stock equivalents in periods in which they have a dilutive effect and are excluded from this calculation in periods in which these are anti-dilutive. The following table illustrates our computation of loss per share for the years ended December 31:

	2016	2015
Numerator:		
Net loss	$ (2,706,984)	$ (7,415,298)
Preferred dividends accrued	-	(23,194)
Net loss applicable to common shareholders	$ (2,706,984)	$ (7,438,492)
Denominator for basic and diluted loss per share:		
Weighted average common shares outstanding	27,339,362	20,726,205
Loss per common share - basic and diluted	$ (0.10)	$ (0.36)

The following table presents securities that could potentially dilute basic loss per share in the future. For all periods presented, the potentially dilutive securities were not included in the computation of diluted loss per share because these securities would have been anti-dilutive for the years ended December 31:

	2016	2015
Stock options	5,269,250	5,571,250
Convertible debt	26,733,955	19,689,286
Common stock warrants	26,459,695	29,227,664
Convertible preferred stock:		
Series D Convertible Preferred	750,000	750,000
Series G Convertible Preferred	865,700	865,700
Series H Convertible Preferred	1,000,000	1,000,000
Series H2 Convertible Preferred	2,100,000	2,100,000
Series J Convertible Preferred	3,521,000	3,546,000
Series K Convertible Preferred	6,816,000	11,416,000
	73,515,600	74,165,900

xii. Accounting for Income Taxes

We account for income taxes under the asset and liability method, which requires recognition of deferred tax assets, subject to valuation allowances, and liabilities for the expected future tax consequences of events that have been included in the consolidated financial statements or tax returns. Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting and income tax purposes. The Company considers many factors when assessing the likelihood of future realization of our deferred tax assets, including recent cumulative earnings experience by taxing jurisdiction, expectations of future taxable income or loss, the carry-forward periods available to us for tax reporting purposes, and other relevant factors. A valuation allowance is established if it is more likely than not that all or a portion of the net deferred tax assets will not be realized. If substantial changes in the Company’s ownership should occur, as defined in Section 382 of the Internal Revenue Code, there could be significant limitations on the amount of net loss carry forwards that could be used to offset future taxable income.

Tax positions must meet a “more likely than not” recognition threshold at the effective date to be recognized. At December 31, 2016 and 2015, the Company did not have any uncertain tax positions. No interest and penalties related to uncertain tax positions were accrued at December 31, 2016 and 2015.

xiii. Accounting for Stock-Based Compensation

We maintain equity compensation plans under which incentive stock options and non-qualified stock options are granted to employees, independent members of our Board of Directors and outside consultants. We recognize equity compensation expense over the requisite service period using the Black-Scholes formula to estimate the fair value of the stock options on the date of grant. Employee awards are accounted for under ASC 718 where the awards are valued at grant date. Awards given to nonemployees are accounted for under ASC 505 where the awards are valued at earlier of commitment date or completion of services.

Determining Fair Value of Stock Option Grants

Valuation and Amortization Method - The fair value of each option award is estimated on the date of grant using the Black-Scholes pricing model based on certain assumptions. The estimated fair value of employee stock options is amortized to expense using the straight-line method over the vesting period, which generally is over three years.

Expected Term - The Company uses the simplified calculation of expected life, described in the FASB ASC 718, *Compensation-Stock Compensation*, as the Company does not currently have sufficient historical exercise data on which to base an estimate of expected term. Using this method, the expected term is determined using the average of the vesting period and the contractual life of the stock options granted.

Expected Volatility - Expected volatility is based on the Company's historical stock volatility data over the expected term of the award.

Risk-Free Interest Rate - The Company bases the risk-free interest rate used in the Black-Scholes valuation method on the implied yield currently available on U.S. Treasury zero-coupon issues with an equivalent remaining term.

Forfeitures - As required by FASB ASC 718, *Compensation-Stock Compensation*, the Company records stock-based compensation expense only for those awards that are expected to vest. The Company estimated a forfeiture rate of 5% for awards granted based on historical experience and future expectations of options vesting. We used this historical rate as our assumption in calculating future stock-based compensation expense.

The following table summarizes the assumptions we utilized for grants of stock options to the three sub-groups of our stock option recipients during the year ended December 31, 2015:

Assumptions	**Non-Employee Board Members**	**CEO, other Officers and Employees**
Expected life	6.0 (yrs)	6.0 (yrs)
Expected volatility	116.32%-141.15 %	116.32%-141.15 %
Risk-free interest rate	0.65%-2.54 %	0.65%-2.54 %
Forfeiture rate	5.00 %	5.00 %
Expected dividend yield	0.0 %	0.0 %

We recognized stock-based compensation expense of $379,964 and $208,989 for the years ended December 31, 2016 and 2015, respectively. The following table summarizes the effect of this stock-based compensation expense within each of the line items within our accompanying consolidated statements of operations for the years ended December 31:

	2016	2015
Research and development	$ 65,500	$ 50,617
Selling and marketing	42,315	32,704
General and administrative	272,149	125,668
Total stock-based compensation expense	$ 379,964	$ 208,989

During the years ended December 31, 2016 and 2015, the total fair value of stock options awarded was $0 and $598,582, respectively.

As of December 31, 2016, the total estimated fair value of unvested stock options to be amortized over their remaining vesting period was $369,224. The non-cash, stock based compensation expense associated with the vesting of these options will be $212,957 in 2017 and $156,267 in 2018.

xiv. Advertising

Advertising costs are expensed as incurred. We incurred $19,125 in 2016 and $12,291 in 2015 for advertising.

xv. Fair Value of Financial Instruments

Due to their short maturities, the carrying amounts for cash and cash equivalents, accounts receivable, accounts payable, and accrued expenses approximate their fair value. Short-term and long-term liabilities are primarily related to liabilities transferred under contractual arrangements with carrying values that approximate fair value.

xvi. Fair Value Measurements

The Company follows the guidance of FASB ASC Topic 820, "*Fair Value Measurements and Disclosures*" ("*ASC 820*") as it related to financial assets and financial liabilities that are recognized or disclosed at fair value in the consolidated financial statements on a recurring basis.

The Company generally defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (exit price). The Company uses a three-tier fair value hierarchy, which classifies the inputs used in measuring fair values. These tiers include: Level 1, defined as observable inputs such as quoted prices for identical instruments in active markets; Level 2, defined as inputs other than quoted prices in active markets that are either directly or indirectly observable; and Level 3, defined as unobservable inputs in which little or no market data exists, therefore requiring an entity to develop its own assumptions.

Financial assets and liabilities are classified in their entirety based on the lowest level of input that is significant to the fair value measurement. The Company has determined that its financial assets are currently classified within Level 1 and that its financial liabilities are currently all classified within Level 3 in the fair value hierarchy.

The following tables set forth the Company's financial assets and financial liabilities that were accounted for at fair value on a recurring basis as of December 31, 2016 and December 31, 2015. The development of the unobservable inputs for Level 3 fair value measurements and fair value calculations are the responsibility of the Company's

management.

		Fair value measurements at December 31, 2016 using:		
	December 31, 2016	**Quoted prices in active markets (Level 1)**	**Significant other observable inputs (Level 2)**	**Significant unobservable inputs (Level 3)**
Available-For-Sale Equity Securities	25,865	25,865	-	-
Total Financial Assets	$ 25,865	$ 25,865	$ -	$ -

	December 31, 2016	**Quoted prices in active markets (Level 1)**	**Significant other observable inputs (Level 2)**	**Significant unobservable inputs (Level 3)**
Series D Preferred Stock Purchase Warrants	$ 23,313	-	-	$ 23,313
Warrants Issued with Convertible Debt	1,661,795	-	-	1,661,795
Conversion Option Derivative Liabilities	951,059	-	-	951,059
Total Derivatives	$ 2,636,167	$ -	$ -	$ 2,636,167

	December 31, 2015	Fair value measurements at December 31, 2015 using: Quoted prices in active markets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)
Available-For-Sale Equity Securities	294,522	294,522	-	-
Total Financial Assets	$ 294,522	$ 294,522	$ -	$ -

	December 31, 2015	Quoted prices in active markets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)
Series D Preferred Stock Purchase Warrants	$ 173,526	-	-	$ 173,526
Warrants Issued with Convertible Debt	3,122,450	-	-	3,122,450
Conversion Option Derivative Liabilities	3,940,791	-	-	3,940,791
Total Derivatives	$ 7,236,767	$ -	$ -	$ 7,236,767

The following table provides a summary of the changes in fair value, including net transfers in and/or out, of the derivative financial instruments, measured at fair value on a recurring basis using significant unobservable inputs:

	January 1, 2016	Issuance fair value	Change in fair value	December 31, 2016
Series D Preferred Stock Purchase Warrants	$ 173,526	$ -	$ (150,213)	$ 23,313
Warrants Issued with Convertible Debt	3,122,450	1,094,432	(2,555,087)	1,661,795
Conversion Option Derivative Liabilities	3,940,791	1,547,127	(4,536,859)	951,059
Total Derivatives	$ 7,236,767	$ 2,641,559	$ (7,242,159)	$ 2,636,167

	January 1, 2015	Issuance fair value	Change in fair value	Gain on extinguishment of derivative liabilities	December 31, 2015
Series D Preferred Stock Purchase Warrants	$ 159,875	$ -	$ 13,651	$ -	$ 173,526
Warrants Issued with Convertible Debt	-	2,320,021	802,429	-	3,122,450
	590,341	5,305,185	600,445	(2,555,180)	3,940,791

Conversion Option Derivative Liabilities					
Total Derivatives	$ 750,216	$ 7,625,206	$ 1,416,525	$ (2,555,180)	$ 7,236,767

The issuance fair values for 2016 and 2015 include the “day 1” derivative losses on the conversion option derivative liabilities of $1,337,510 and $805,476, respectively, which are included in “change in fair value of derivative liabilities” in the consolidated statements of operations.

The fair value of the derivative liabilities was determined using a binomial pricing model. The assumptions for the binomial pricing model are represented in the table below for the warrants issued in the Series D private placement reflected on a per share common stock equivalent basis.

Assumptions	**November 10, 2011**	**Warrants revalued at December 31, 2015**	**Warrants revalued at December 31, 2016**
Expected life (in months)	60.0	11.0	5.0
Expected volatility	104.5 %	104.9 %	83.5 %
Risk-free interest rate	0.875 %	0.65 %	0.62 %
Exercise price	$ 0.81	$ 0.25	$ 0.25
Fair value per warrant	$ 0.54	$ 0.16	$ 0.02

The assumptions for the binomial pricing model are represented in the table below for the warrants issued with the Convertible Debt in 2015 and 2016 reflected on a per share common stock equivalent basis.

Assumptions	**At Issuance Fair value**	**Warrants revalued at December 31, 2015**	**Warrants revalued at December 31, 2016**
Expected life (in months)	60.0	55.0-60.0	43.0-51.0
Expected volatility	118.3-120.1 %	136.3-141.6 %	110.0-116.0 %
Risk-free interest rate	1.48-1.69 %	1.29-1.76 %	1.93 %
Exercise price	$ 0.40	$ 0.40	$ 0.40
Fair value per warrant	$ 0.19-$0.21	$ 0.30	$ 0.12-0.14

The assumptions for the binomial pricing model are represented in the table below for the conversion options reflected on a per share common stock equivalent basis.

Assumptions	**At Issuance fair value**	**At Settlement fair value**	**Conversion options revalued at December 31, 2015**	**Conversion options revalued at December 31, 2016**
Expected life (in months)	6.0-24.0	0-18.0	18-24	6.0-15.0
Expected volatility	104.2-153.8 %	86.9%-142.2 %	112.2-114.7 %	84.4-94.8 %

Risk-free interest rate	0.05-0.99	%	0.01-0.72	%	1.06	%	0.62-0.85 %
Exercise price	$ 0.10-$0.35		$ 0.10-$0.25		$ 0.28		$ 0.28
Fair value per conversion option	$ 0.09-$0.28		$ 0.07-$0.26		$ 0.14-$0.33		$ 0.03-$0.06

xvii. Recently Issued Accounting Standards

In April 2015, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update (“ASU”) No. 2015-03, “Simplifying the Presentation of Debt Issuance Costs” (“ASU 2015-03”). ASU 2015-03 requires that debt issuance costs be presented as a direct deduction from the carrying amount of the related debt liability, consistent with the presentation of debt discounts. Prior to the issuance of ASU 2015-03, debt issuance costs were required to be presented as deferred charge assets, separate from the related debt liability. ASU 2015-03 does not change the recognition and measurement requirements for debt issuance costs. The Company early-adopted ASU 2015-03 as of the end of its Fiscal 2015, and applied its provisions retrospectively. The adoption of ASU 2015-03 resulted in the reclassification of approximately $888,000 unamortized debt issuance costs related to the Company’s Senior Notes (see Note 8) from other non-current assets to long-term debt within its consolidated balance sheets as of December 31, 2015. Other than this reclassification, the adoption of ASU 2015-03 and other new pronouncements that have been issued did not have an impact on the Company’s consolidated financial statements.

(4) Property and Equipment, net

Property and equipment as of December 31, 2016 and 2015 consisted of the following components:

	December 31, 2016	2015
Laboratory and manufacturing equipment	$ 226,326	$ 226,081
Office equipment	165,832	158,872
Leasehold improvements	8,117	8,117
PCT collaboration, demonstration and leased systems	461,858	461,858
Total property and equipment	862,133	854,928
Less accumulated depreciation	(852,720)	(834,779)
Net book value	$ 9,413	$ 20,149

Depreciation expense for the years ended December 31, 2016 and 2015 was $17,939 and $25,288, respectively.

(5) Retirement Plan

We provide all of our employees with the opportunity to participate in our retirement savings plan. Our retirement savings plan has been qualified under Section 401(k) of the Internal Revenue Code. Eligible employees are permitted to contribute to the plan through payroll deductions within statutory limitations and subject to any limitations included in the plan. During 2016 and 2015 we contributed $22,627 and $22,098, respectively, in the form of discretionary Company-matching contributions.

(6) Income Taxes

Tax positions must meet a “more likely than not” recognition threshold at the effective date to be recognized. At December 31, 2016 and 2015, the Company did not have any uncertain tax positions. No interest and penalties related to uncertain tax positions were accrued at December 31, 2016 and 2015. Our tax returns for fiscal years 2013, 2014 and 2015 are open to examination.

We did not record an income tax benefit or provision for the years ended December 31, 2016 and 2015.

Significant items making up the deferred tax assets and deferred tax liabilities as of December 31, 2016 and 2015 are as follows:

	2016	2015
Current deferred taxes		
Inventories	$ 7,856	$ 19,640
Accounts receivable allowance	17,253	-
Other accruals	33,399	23,714
Less: valuation allowance	(58,508)	(43,354)
Total current deferred tax assets	$ -	$ -
Long term deferred taxes:		
Accelerated tax depreciation	$ 14,582	$ 14,134
Non-cash, stock-based compensation, nonqualified	711,676	562,426
Impairment loss on investment	146,782	-
Goodwill and intangibles	-	-
Operating loss carry forwards and tax credits	13,561,012	12,028,900
Less: valuation allowance	(14,434,052)	(12,605,460)
Total long term deferred tax assets (liabilities), net	-	-
Total net deferred tax liabilities	$ -	$ -

A valuation allowance is established if it is more likely than not that all or a portion of the deferred tax asset will not be realized. Accordingly, a valuation allowance was established in 2016 and 2015 for the full amount of our deferred tax assets due to the uncertainty of realization. We believe based on our projection of future taxable operating income for the foreseeable future, it is more likely than not that we will not be able to realize the benefit of the deferred tax asset at December 31, 2016.

We have net operating loss carry-forwards for federal income tax purposes of $30,471,000 as of December 31, 2016. Included in these numbers are loss carry-forwards that were obtained through the acquisition of BioSeq, Inc. and are subject to Section 382 NOL limitations. These net operating loss carry-forwards expire at various dates from 2018 through 2037.

We had net operating loss carry-forwards for state income tax purposes of approximately $21,547,000 at December 31, 2016. These net operating loss carry-forwards expire at various dates from 2030 through 2037.

We have research and development tax credit carry-forwards for federal income tax purposes of approximately $1,039,000 as of December 31, 2016 and research and development tax credit carry-forwards for state income tax purposes of approximately $207,000 as of December 31, 2016. The federal credit carry-forwards expire at various dates from 2017 through 2037. The state credit carry-forwards expire at various dates from 2023 through 2032.

In addition, we have federal alternative minimum tax credit carry-forwards for federal income tax purposes of approximately $217,000 as of December 31, 2016. These credits do not expire.

Our effective income tax (benefit) provision rate was different than the statutory federal income tax (benefit) provision rate as follows for the years ended December 31:

	2016	2015
Federal tax provision rate	34 %	34 %
Permanent differences	24 %	(12)%
State tax expense	0 %	0 %
Refundable AMT and R&D tax credit	0 %	0 %
Net operating loss carry back	0 %	0 %
Valuation allowance	(58)%	(23)%
Effective income tax provision	0 %	0 %

(7) Commitments and Contingencies

Operating Leases

Our corporate office is currently located at 14 Norfolk Avenue, South Easton, Massachusetts 02375. We are currently paying $4,800 per month, on a lease extension, signed on December 29, 2016, that expires December 31, 2017, for our corporate office.

On November 1, 2014 we signed a lease for lab space in Medford, MA. We subsequently expanded our space in Medford. The lease expires December 30, 2017 and requires monthly payments of $5,385 subject to annual cost of living increases.

Following is a schedule by years of future minimum rental payments required under operating leases with initial or remaining non-cancelable lease terms in excess of one year as of December 31, 2016:

2017	$ 122,220
Thereafter	-
Total minimum payments required	$ 122,220

Royalty Commitments

BioMolecular Assays, Inc.

In 1996, we acquired our initial equity interest in BioSeq, Inc., which at the time was developing our original pressure cycling technology. BioSeq, Inc. acquired its pressure cycling technology from BioMolecular Assays, Inc. under a technology transfer and patent assignment agreement. In 1998, we purchased all of the remaining outstanding capital stock of BioSeq, Inc., and at such time, the technology transfer and patent assignment agreement was amended to require us to pay BioMolecular Assays, Inc., a 5% royalty on our sales of products or services that incorporate or utilize the original pressure cycling technology that BioSeq, Inc. acquired from BioMolecular Assays, Inc. We are also required to pay BioMolecular Assays, Inc. 5% of the proceeds from any sale, transfer or license of all or any portion of the original pressure cycling technology. These payment obligations terminated on March 7, 2016. During the years ended December 31, 2016 and 2015, we incurred approximately $6,963 and $31,301, respectively, in royalty expense associated with our obligation to BioMolecular Assays, Inc.

In connection with our acquisition of BioSeq, Inc., we licensed certain limited rights to the original pressure cycling technology back to BioMolecular Assays, Inc. This license is non-exclusive and limits the use of the original pressure cycling technology by BioMolecular Assays, Inc. solely for molecular applications in scientific research and development and in scientific plant research and development. BioMolecular Assays, Inc. is required to pay us a royalty equal to 20% of any license or other fees and royalties, but not including research support and similar payments, it receives in connection with any sale, assignment, license or other transfer of any rights granted to BioMolecular Assays, Inc. under the license. BioMolecular Assays, Inc. was required to pay us these royalties until the expiration in March 2016 of the patents held by BioSeq, Inc. since 1998. We have not received any royalty payments from BioMolecular Assays, Inc. under this license.

Battelle Memorial Institute

In December 2008, we entered into an exclusive patent license agreement with the Battelle Memorial Institute ("*Battelle*"). The licensed technology is the subject of a patent application filed by Battelle in 2008 and relates to a method and a system for improving the analysis of protein samples, including through an automated system utilizing pressure and a pre-selected agent to obtain a digested sample in a significantly shorter period of time than current methods, while maintaining the integrity of the sample throughout the preparatory process. In addition to royalty payments on net sales on "licensed products," we are obligated to make minimum royalty payments for each year that we retain the rights outlined in the patent license agreement and we are required to have our first commercial sale of the licensed products within one year following the issuance of the patent covered by the licensed technology. After re-negotiating the terms of the contract in 2013, the minimum annual royalty was $1,200 in 2014 and $2,000 in 2015; the minimum royalties are $3,000 in 2016, $4,000 in 2017 and $5,000 in 2018 and each calendar year thereafter during the term of the agreement.

Target Discovery Inc.

In March 2010, we signed a strategic product licensing, manufacturing, co-marketing, and collaborative research and development agreement with Target Discovery Inc. ("*TDI*"). Under the terms of the agreement, we have been licensed by TDI to manufacture and sell a highly innovative line of chemicals used in the preparation of tissues for scientific analysis ("*TDI reagents*"). The TDI reagents were designed for use in combination with our pressure cycling technology. The companies believe that the combination of PCT and the TDI reagents can fill an existing need in life science research for an automated method for rapid extraction and recovery of intact, functional proteins associated with cell membranes in tissue samples. We did not incur any royalty obligation under this agreement in 2015 or 2014.

In April 2012, we signed a non-exclusive license agreement with TDI to grant the non-exclusive use of our pressure cycling technology. We recorded $20,000 and $22,000 of minimum royalty income in 2016 and 2015, respectively. We executed an amendment to this agreement on October 1, 2016 wherein we agreed to pay a monthly fee of $1,400 for the use of a lab bench, shared space and other utilities, and $2,000 per day for technical support services as needed.

Severance and Change of Control Agreements

Each of Mr. Schumacher, and Drs. Ting, Lazarev, and Lawrence, executive officers of the Company, are entitled to receive a severance payment if terminated by us without cause. The severance benefits would include a payment in an amount equal to one year of such executive officer's annualized base salary compensation plus accrued paid time off. Additionally, the officer will be entitled to receive medical and dental insurance coverage for one year following the

date of termination.

Each of these executive officers, other than Mr. Schumacher, is entitled to receive a change of control payment in an amount equal to one year of such executive officer's annualized base salary compensation, accrued paid time off, and medical and dental coverage, in the event of a change of control of the Company. In the case of Mr. Schumacher, this payment would be equal to two years of annualized base salary compensation, accrued paid time off, and two years of medical and dental coverage. The severance payment is meant to induce the aforementioned executives to remain in the employ of the Company, in general; and particularly in the occurrence of a change in control, as a disincentive to the control change.

(8) Convertible Debt and Other Debt

Senior Secured Convertible Debentures and Warrants

We entered into Subscription Agreements (the "Subscription Agreement") with various individuals (each, a "Purchaser") between July 23, 2015 and March 31, 2016, pursuant to which the Company sold Senior Secured Convertible Debentures (the "Debentures") and warrants to purchase shares of common stock equal to 50% of the number of shares issuable pursuant to the subscription amount (the "Warrants") for an aggregate purchase price of $6,329,549 (the "Purchase Price").

The Company issued a principal aggregate amount of $6,962,504 in Debentures which includes a 10% original issue discount on the Purchase Price. The Debenture does not accrue any additional interest during the first year it is outstanding but accrues interest at a rate equal to 10% per annum for the second year it is outstanding. The Debenture has a maturity date of two years from issuance. The Debenture is convertible any time after its issuance date. The Purchaser has the right to convert the Debenture into shares of the Company's common stock at a fixed conversion price equal to $0.28 per share, subject to applicable adjustments. In the second year that the Debenture is outstanding, any interest accrued shall be payable quarterly in either cash or common stock, at the Company's discretion.

At any time after the Issuance Date, the Company has the option, subject to certain conditions, to redeem some or all of the then outstanding principal amount of the Debenture for cash in an amount equal to the sum of (i) 120% of the then outstanding principal amount of the Debenture, (ii) accrued but unpaid interest and (iii) any liquidated damages and other amounts due in respect of the Debenture.

The Company issued warrants exercisable into a total of 11,302,766 shares of our common stock. The Warrants issued in this transaction are immediately exercisable at an exercise price of $0.40 per share, subject to applicable adjustments including full ratchet anti-dilution in the event that we issue any securities at a price lower than the exercise price then in effect. The Warrants have an expiration period of five years from the original issue date. The

Warrants are subject to adjustment for stock splits, stock dividends or recapitalizations and also include anti-dilution price protection for subsequent equity sales below the exercise price.

Subject to the terms and conditions of the Warrants, at any time commencing six months from the Final Closing, the Company has the right to call the Warrants for cancellation if the volume weighted average price of its Common Stock on the OTCQB (or other primary trading market or exchange on which the Common Stock is then traded) equals or exceeds three times the per share exercise price of the Warrants for 15 out of 20 consecutive trading days.

In connection with the Subscription Agreement and Debenture, the Company entered into Security Agreements with the Purchasers whereby the Company agreed to grant to Purchasers an unconditional and continuing, first priority security interest in all of the assets and property of the Company to secure the prompt payment, performance and discharge in full of all of Company's obligations under the Debentures, Warrants and the other Transaction Documents.

The Company determined that the conversion feature of the Debentures met the definition of a liability in accordance with ASC 815-40 and therefore bifurcated the conversion feature on each debt agreement and accounted for it as a derivative liability. The fair value of the conversion feature was accounted for as a note discount and are amortized to interest expense over the life of the loan. The fair value of the conversion feature was reflected in the conversion option liability line in the condensed consolidated balance sheets.

The proceeds from these convertible debts were allocated between the host debt instrument and the convertible option based on the residual method. The estimated fair value of the convertible option was determined using a binomial formula, resulting in allocations to the convertible option and accounted for as a liability in the Company's condensed consolidated balance sheet. In accordance with the provisions of ASC 815-40, the gross proceeds are offset by debt discounts, which are amortized to interest expense over the expected life of the debt.

ASC 470-20 states that the proceeds from the issuance of debt with detachable stock warrants should be allocated between the debt and warrants on the basis of their relative fair market values. The debt discount will be amortized to interest expense over the two-year term of these loans. We amortized $3,740,746 of the debt discount to interest expense in 2016. The warrants issued in connection with the convertible debentures are classified as warrant derivative liabilities because the warrants are entitled to certain rights in subsequent financings and the warrants contain “down-round protection” and therefore, do not meet the scope exception for treatment as a derivative under ASC 815, Derivatives and Hedging, (“ASC 815”). Since “down-round protection” is not an input into the calculation of the fair value of the warrants, the warrants cannot be considered indexed to the Company’s own stock which is a requirement for the scope exception as outlined under ASC 815. The estimated fair value of the warrants was determined using the binomial model, resulting in an allocation of $2,847,624 to the total warrants out of the gross proceeds of $6,329,549. The fair value will be affected by changes in inputs to that model including our stock price, expected stock price volatility, the contractual term, and the risk-free interest rate. We will continue to classify the fair value of the warrants as a liability until the warrants are exercised, expire or are amended in a way that would no longer require these warrants to be classified as a liability, whichever comes first.

Other convertible notes

On May 13, 2016, one lender converted an outstanding note issued on April 28, 2015 and the related accrued interest totaling $117,837 to 420,849 common shares. As of December 31, 2016, the outstanding balance on the note was zero.

On May 24, 2016, we sold an additional convertible note for $107,000 with warrants to purchase 50,000 shares of common stock at an exercise price of $0.55 per share. The purchaser has the right to convert the notes into shares of the Company’s common stock at a fixed conversion price equal to $0.45 per share, subject to applicable adjustments. The estimated fair value of the warrants was determined using the binomial model, resulting in an allocation of $12,406 to the total warrants and the recognition of a beneficial conversion feature of $7,962, both of which were recorded as a discount to the note. We evaluated the convertible note and warrants for derivative liability treatment and determined that these instruments do not include certain rights such as price protection like our previous debt financings. Accordingly, we concluded that this financing arrangement did not qualify for derivative accounting treatment.

On June 14, 2016, we sold an additional convertible note for $115,000 and issued 30,667 common shares to compensate the lender. On July 1, 2016, the note was modified to increase the principal amount to $200,000 and we received the remaining proceeds of $85,000 on the same date and issued 34,333 common shares as compensation to the lender. The lender has the right to convert the note into shares of the Company’s common stock at fixed conversion price equal to $0.45 per share, subject to applicable adjustments. We valued the total 65,000 common shares using the stock prices at the respective dates the note proceeds were received and recorded the relative fair value of the shares amounting to $26,000 as a debt discount to be amortized over the term of the loan. We then computed the effective conversion price of the note, noting that no beneficial conversion feature exists. We also evaluated the convertible

note for derivative liability treatment and determined that the instrument does not include certain rights such as price protection like our previous debt financing. Accordingly, we concluded that this financing arrangement did not qualify for derivative accounting treatment.

On July 29, 2016, we sold an additional convertible note for $100,000 and issued 32,500 common shares to compensate the lender. The lender has the right to convert the notes into shares of the Company's common stock at a fixed conversion price equal to $0.45 per share, subject to applicable adjustments. The proceeds were allocated between the convertible note and shares of common stock based on their relative fair values. The relative fair values of the convertible note and the common shares was $87,241 and $12,759, respectively. We then computed the effective conversion price of the note, noting that the convertible debt gave rise to a beneficial conversion feature (BCF) of $12,759. The sum of the relative fair value of the common shares and the BCF of $25,518 was recorded as a debt discount to be amortized over the term of the loan. We also evaluated the convertible note for derivative liability treatment and determined that the instruments does not include certain rights such as price protection like our previous debt financings. Accordingly, we concluded that this financing arrangements did not qualify for derivative accounting treatment.

On September 15, 2016, we sold an additional convertible note for $500,000 and issued 200,000 common shares to compensate the lender. The lender has the right to convert the notes into shares of the Company's common stock at a fixed conversion price equal to $0.45 per share, subject to applicable adjustments. The convertible note includes an original issue discount of $40,541 and is subject to a one-time interest of 9% or $45,000 which was recorded as a debt discount and amortized over the term of the loan. The proceeds were allocated between the convertible note and shares of common stock based on their relative fair values. The relative fair value of the convertible note was $434,028. The allocation of the gross proceeds to the shares of common stock was $65,972 and recorded as a debt discount to be amortized over the term of the loan. We then computed the effective conversion price of the note, noting that no beneficial conversion feature exists. We also evaluated the convertible note for derivative liability treatment and determined that the instrument does not include certain rights such as price protection like our previous debt financings. Accordingly, we concluded that this financing arrangement did not qualify for derivative accounting treatment.

The specific terms of the convertible notes and outstanding balances as of December 31, 2016 are listed in the tables below.

Fixed Rate Convertible Notes

Inception Date	Term	Loan Amount	Outstanding Balance	Original Issue Discount	Interest Rate	Deferred Finance Fees	Discount related to fair value of conversion feature and warrants/shares
July 22, 2015	24 months	$ 2,180,000	$ 2,180,000	$ 218,000 [1]	10 %[2]	$ 388,532	$ 2,163,074
September 25, 2015	24 months	1,100,000	1,100,000	110,000 [1]	10 %[2]	185,956	1,022,052
October 2, 2015	24 months	150,000	150,000	15,000 [1]	10 %[2]	26,345	140,832
October 6, 2015	24 months	30,000	30,000	3,000 [1]	10 %[2]	5,168	26,721
October 14, 2015	24 months	50,000	50,000	5,000 [1]	10 %[2]	8,954	49,377
November 2, 2015	24 months	250,000	250,000	25,000 [1]	10 %[2]	43,079	222,723
November 10, 2015	24 months	50,000	50,000	5,000 [1]	10 %[2]	8,790	46,984
November 12, 2015	24 months	215,000	215,000	21,500 [1]	10 %[2]	38,518	212,399
November 20, 2015	24 months	200,000	200,000	20,000 [1]	10 %[2]	37,185	200,000
December 4, 2015	24 months	170,000	170,000	17,000 [1]	10 %[2]	37,352	170,000
December 11, 2015	24 months	360,000	360,000	36,000 [1]	10 %[2]	75,449	360,000
December 18, 2015	24 months	55,000	55,000	5,500 [1]	10 %[2]	11,714	55,000
December 31, 2015	24 months	100,000	100,000	10,000 [1]	10 %[2]	20,634	100,000
January 11, 2016	24 months	100,000	100,000	10,000 [1]	10 %[2]	24,966	80,034
January 20, 2016	24 months	50,000	50,000	5,000 [1]	10 %[2]	9,812	40,188

January 29, 2016	24 months	300,000	300,000	30,000	1	10 %[2]	60,887	239,113
February 26, 2016	24 months	200,000	200,000	20,000	1	10 %[2]	43,952	156,048
March 10, 2016	24 months	125,000	125,000	12,500	1	10 %[2]	18,260	106,740
March 18, 2016	24 months	360,000	360,000	36,000	1	10 %[2]	94,992	265,008
March 24, 2016	24 months	106,667	106,667	10,667	1	10 %[2]	15,427	91,240
March 31, 2016	24 months	167,882	167,882	16,788	1	10 %[2]	2,436	165,446
April 5, 2016	24 months	10,000	10,000	1,000	1	10 %[2]	-	10,000
May 24, 2016	7 months	100,000	100,000	7,000		0 %	-	20,368
June 15, 2016	6 months	40,000	40,000	-		12 %	-	3,680
June 17, 2016	6 months	40,000	40,000	-		12 %	-	3,899
June 22, 2016	6 months	35,000	35,000	-		12 %	-	3,373
July 6, 2016	6 months	85,000	85,000	-		12 %	-	15,048
July 29, 2016	6 months	100,000	100,000	-		12 %	-	25,518
September 15, 2016	8 months	500,000	500,000	85,541		9 %	-	65,972
		$ 7,229,549	$ 7,229,549	$ 725,496			$ 1,158,408	$ 6,060,837

1. The original issue discount is reflected in the first year.

2. The annual interest started accruing in the second year.

As of December 31, 2016, a total of approximately $291,000 convertible debentures were purchased by related parties who were members of the Company’s Board of Directors and management and their family members.

Deferred finance fees included cash commissions amounting to $621,500 and the fair value of the 2,101,786 warrants issued to the placement agent amounting to $536,908. For the year ended December 31, 2016, the Company recognized amortization expense related to the debt discounts indicated above of $3,876,622. The unamortized debt discounts as of December 31, 2016 related to the convertible debentures and other convertible notes amounted to $3,142,078.

Revolving Note Payable

On October 28, 2016, an accredited investor (the "*Investor*") purchased from us a promissory note in the aggregate principal amount of up to $2,000,000 (the "*Revolving Note*") due and payable on the earlier of October 28, 2017 (the "*Maturity Date*") or on the seventh business day after the closing of a Qualified Offering (as defined in the Revolving Note). Although the Revolving Note is dated October 26, 2016, the transaction did not close until October 28, 2016, when we received its initial $250,000 advance pursuant to the Revolving Note. As a result, on the same day and pursuant to the Revolving Note, we issued to the Investor a Common Stock Purchase Warrant to purchase 625,000 shares of our common stock at an exercise price per share equal to $0.40 per share. The Investor is obligated to provide us with advances of $250,000 under the Revolving Note, but the Investor shall not be required to advance more than $250,000 in any individual fifteen (15) day period and no more than $500,000 in the thirty (30) day period immediately following the date of the initial advance. Notwithstanding the fifteen (15) day period limitation, on November 2, 2016, November 23, 2016, December 6, 2016 and December 16, 2016, we received $1,000,000 pursuant to the Revolving Note and we issued to the Investor additional warrants to purchase 2,500,000 shares of our Common Stock. The terms of the Warrants are identical except for the exercise date, issue date, and termination date.

In the event that a Qualified Offering occurs on or prior to the six (6) month anniversary of October 28, 2016, within seven (7) Business Days of the closing of the Qualified Offering, the Company shall pay a cash fee equal to five percent (5%) of the total outstanding amount owed by the Company to the Holder as of the closing date of the Qualified Offering or, at the option of the Company, issue to the Holder a number of restricted shares of the Company's common stock equal to (x) five percent (5%) of the total outstanding amount owed by the Company to the Holder as of the closing date of the Qualified Offering divided by (y) the purchase price provided by the documents governing the Qualified Offering. A Qualified Offering means the completion of a public offering of the Company's securities pursuant to which the Company receives aggregate gross proceeds of at least Seven Million United States Dollars (US$7,000,000) in consideration of the purchase of its securities and resulting in, pursuant to the effectiveness of the registration statement for such offering, the Company's common stock being traded on the NASDAQ Capital Market, NASDAQ Global Select Market or the New York Stock Exchange.

In the event that a Qualified Offering occurs following the six (6) month anniversary of October 28, 2016, but prior to the Maturity Date, within seven(7) Business Days of the closing of the Qualified Offering, the Company shall pay a cash fee equal to five percent (5%) of the total outstanding amount owed by the Company to the Holder as of the closing date of the Qualified Offering or, at the option of the Company, issue to the Holder a number of restricted shares of the Company's common stock equal to (x) five percent (5%) of the total outstanding amount owed by the Company to the Holder as of the closing date of the Qualified Offering divided by (y) the purchase price provided by the documents governing the Qualified Offering.

Interest on the principal balance of the Revolving Note shall be paid in full on the Maturity Date, unless otherwise paid prior to the Maturity Date. Interest shall be assessed as follows: (i) a one-time interest of 10% on all principal amounts advanced prior to April 28, 2017; (ii) the foregoing and 4% on any amount remaining outstanding if the principal amount is repaid between April 28, 2017 and July 28, 2017; or (iii) both of the foregoing and 4% on any amount remaining outstanding if the principal amount is repaid between July 28, 2017 and October 28, 2017.

Broker fees amounting to $116,500, the one-time interest of $125,000 and the fair value of the 3,125,000 warrants issued to the Investor amounting to $479,730 were recorded as debt discounts and amortized over the term of the revolving note. For the year ended December 31, 2016, the Company recognized amortization expense related to the debt discounts indicated above of $84,200. The unamortized debt discounts as of December 31, 2016 related to the convertible debentures amounted to $637,030.

The following table provides a summary of the changes in convertible debt and revolving note payable, net of unamortized discounts, during 2016:

	2016
Balance at January 1,	$ 277,342
Issuance of convertible debt, face value	2,509,045
Issuance of revolving note payable, face value	1,250,000
Original issue discount	(189,496)
Debt discount from derivative liabilities (embedded conversion option and warrants)	(1,153,817)
Debt discount from beneficial conversion feature	(20,721)
Deferred financing fees	(385,371)
Debt discount related to one-time interest charge	(170,000)
Repayment of convertible debt	(107,000)
Conversion of convertible debt into common stock	(100,000)
Debt discount from shares and warrants issued with the notes	(596,867)
Accretion of interest and amortization of debt discount to interest expense	3,960,822
Balance at December 31,	5,273,937
Less: revolving note payable	612,970
Less: current portion of convertible debt	4,005,702
Convertible debt, long-term portion	$ 655,265

Other Notes

On January 15, 2015 we signed a Merchant Agreement with a lender. Under the agreement, we received $150,000 in exchange for rights to all customer receipts until the lender was paid $187,500, which was collected at the rate of $744 per business day. The payments were secured by essentially all tangible assets of the Company. $67,925 of the proceeds were used to pay off the outstanding balance of a previous loan from this lender. The Company paid $1,875 in fees in connection with this loan. The note was paid off in its entirety prior to December 31, 2015.

On January 29, 2015 we signed a Merchant Agreement with a lender. Under the agreement, we received $200,000 in exchange for rights to all customer receipts until the lender was paid $278,000, which was collected at the rate of $1,985 per business day. The payments were secured by essentially all tangible assets of the Company. The Company paid $999 in fees in connection with this loan. The note was paid off in its entirety prior to December 31, 2015.

On March 17, 2015 we signed a Merchant Agreement with a lender. Under the agreement, we received $50,000 in exchange for rights to all customer receipts until the lender was paid $67,450, which was collected at the rate of $559 per business day. The payments were secured by essentially all tangible assets of the Company. The Company paid $999 in fees in connection with this loan. The note was paid off in its entirety prior to December 31, 2015.

On May 29, 2015 we signed a Merchant Agreement with a lender. Under the agreement, we received $100,000 in exchange for rights to all customer receipts until the lender was paid $132,000, which was collected at the rate of $1,098 per business day. The Company paid $3,999 in fees in connection with this loan. The note was paid off in its entirety prior to December 31, 2015.

On August 28, 2015 we signed a Merchant Agreement with a lender. Under the agreement, we received $300,000 in exchange for rights to all customer receipts until the lender is paid $384,000, to be collected at the rate of $2,560 per business day. The payments are not secured. On the closing date, $131,710 of the proceeds were used to pay off the outstanding balances of two existing Notes. The Company paid $6,000 in fees in connection with this loan. The loan was paid off in its entirety prior to December 31, 2016.

During the year ended December 31, 2015, we signed three ninety-day notes with an investor. Under the terms of the notes, the Company received a total of $600,000. The investor converted these loans, plus $60,000 in accrued interest into the Company’s $5 million PIPE offering on July 21, 2015. There was no gain or loss on the conversion.

During the year ended December 31, 2015, the Company made payments of $587,949 in total on the non-convertible debt from non-related parties.

On January 6, 2016 we signed a Merchant Agreement with a lender. Under the agreement we received $250,000 in exchange for rights to all customer receipts until the lender is paid $322,500, which is collected at the rate of $1,280 per business day. The payments were secured by second position rights to all customer receipts until the loan has been paid in full. $138,840 of the proceeds were used to pay off the outstanding balance of a previous loan from another lender. The Company recognized a gain on the settlement of the previous loan of $5,044 which was credited to interest expense. The Company paid $2,500 in fees in connection with this loan. We received an additional $93,161 in June 2016 under the existing Merchant Agreement. The note was still outstanding as of December 31, 2016 with a balance of $157,287.

On January 20, 2016 we borrowed $50,000 from an individual with no interest or fees. We paid back the loan in March 2016.

On February 8, 2016 we signed a Merchant Agreement with a lender. Under the agreement we received $100,000 in exchange for third position rights to all customer receipts until the lender is paid $129,900, which is collected at the rate of $927 per business day. The Company paid $2,000 in fees in connection with this loan. We received an additional $125,000 in June 2016 under the existing Merchant Agreement of which $48,420 was used to pay off the prior loan. The lender provided an additional $70,000 on August 16, 2016. We repaid a portion of the $70,000 with $32,430 remaining as outstanding as of December 31, 2016.

On May 9, 2016 we signed a promissory note with a lender. Under the agreement we received $200,000 net of a $6,000 original issue discount and we repaid $206,000 on August 25, 2016. In connection with this promissory note, we issued warrants exercisable into 100,000 shares of our common stock. The warrants issued in this transaction are immediately exercisable at an exercise price of $0.55 per share. The warrants have an expiration period of three years from the original issue date. The warrants are subject to adjustment for stock splits, stock dividends or recapitalizations. The warrants were recorded as a component of our Stockholders' Equity. The estimated fair value of the warrants was determined using the binomial model, resulting in an allocation of $27,349 to the total warrants and recorded as a discount to the note to be amortized over the term of the loan. We evaluated the warrants for derivative liability treatment and determined that these instruments do not include certain rights such as price protection like our previous debt financings. Accordingly, we concluded that these instruments did not qualify for derivative accounting treatment. In August 2016, the lender extended the maturity date of the note from August 11, 2016 to August 25, 2016. Consequently, a penalty interest of $41,200 was added to the principal amount and settled through the issuance of 100,049 common shares. As of December 31, 2016, the outstanding balance on this note was zero.

On August 26, 2016 we signed a Merchant Agreement with a lender. Under the agreement we received $122,465 net proceeds in exchange for rights to all customer receipts which is collected at the rate of $1,386 per business day. The note was still outstanding as of December 31, 2016 with a balance of $48,440.

Related Party Notes

During the year ended December 31, 2016, the Company received advances from certain officers of the Company amounting to $20,000. These advances were non-interest bearing and payable on demand. As of December 31, 2016 there are no outstanding notes to related parties.

(9) Stockholders' (Deficit)

Preferred Stock

We are authorized to issue 1,000,000 shares of preferred stock with a par value of $0.01. Of the 1,000,000 shares of preferred stock:

1) 20,000 shares have been designated as Series A Junior Participating Preferred Stock ("*Junior A*")
2) 313,960 shares have been designated as Series A Convertible Preferred Stock ("*Series A*")
3) 279,256 shares have been designated as Series B Convertible Preferred Stock ("*Series B*")
4) 88,098 shares have been designated as Series C Convertible Preferred Stock ("*Series C*")
5) 850 shares have been designated as Series D Convertible Preferred Stock ("*Series D*")
6) 500 shares have been designated as Series E Convertible Preferred Stock *("Series E")*
7) 240,000 shares have been designated as Series G Convertible Preferred Stock ("*Series G*")
8) 10,000 shares have been designated as Series H Convertible Preferred Stock ("*Series H*")
9) 21 shares have been designated as Series H2 Convertible Preferred Stock ("*Series H2*")
10) 6,250 shares have been designated as Series J Convertible Preferred Stock ("*Series J*")
11) 15,000 shares have been designated as Series K Convertible Preferred Stock ("*Series K*")

As of December 31, 2016 and 2015, there were no shares of Junior A, and Series A, B, C, E, and H1 issued and outstanding.

Series D Convertible Preferred Stock

On November 11, 2011, we completed a registered direct offering, pursuant to which we sold an aggregate of 843 units for a purchase price of $1,000 per unit, resulting in gross proceeds to us of $843,000 (the "*Series D Placement*").

Each unit ("*Series D Unit*") consisted of (i) one share of Series D Convertible Preferred Stock, $0.01 par value per share (the "*Series D Convertible Preferred Stock*") convertible into 1,538.46 shares of our common stock, (subject to adjustment for stock splits, stock dividends, recapitalization, etc.) and (ii) one five-year warrant to purchase approximately 614 shares of our common stock at a per share exercise price of $0.81, subject to adjustment as provided in the Warrants ("*Series D Warrant*"). The Series D Warrants will be exercisable beginning on May 11, 2012 and until the close of business on the fifth anniversary of the initial exercise date.

The proceeds from the sale of each Series D Unit were allocated between the Series D Convertible Preferred Stock and the Series D Warrants based on the residual method. The estimated fair value of the Series D Warrants was determined using a binomial formula, resulting in an allocation of the gross proceeds of $283,725 to the total warrants issued. The allocation of the gross proceeds to the Series D Convertible Preferred Stock was $559,275. In accordance with the provisions of ASC 470-20, an additional adjustment between Additional Paid in Capital and Accumulated Deficit of $530,140 was recorded to reflect an implicit non-cash dividend related to the allocation of proceeds between the stock and warrants issued. The $530,140 represents the value of the adjustment to additional paid in capital related to the beneficial conversion feature of the Series D Convertible Preferred Stock. The value adjustment was calculated by subtracting the fair market value of the underlying common stock on November 10, 2011 issuable upon conversion of the Series D Convertible Preferred Stock from the fair market value of the Series D Convertible Preferred Stock as determined when the Company performed a fair market value allocation of the proceeds to the Series D Convertible Preferred Stock and warrants. The warrants are recorded as a liability. See "Warrant Derivative Liability" below.

The Series D Convertible Preferred Stock will rank senior to the Company's common stock and Series C Convertible Preferred Stock with respect to payments made upon liquidation, winding up or dissolution. Upon any liquidation, dissolution or winding up of the Company, after payment of the Company's debts and liabilities, and before any payment is made to the holders of any junior securities, the holders of Series D Convertible Preferred Stock will first be entitled to be paid $1,000 per share subject to adjustment for accrued but unpaid dividends.

We may not pay any dividends on shares of common stock unless we also pay dividends on the Series D Convertible Preferred Stock in the same form and amount, on an as-if-converted basis, as dividends actually paid on shares of our common stock. Except for such dividends, no other dividends may be paid on the Series D Convertible Preferred Stock.

Each share of Series D Convertible Preferred Stock is convertible into 1,538.46 shares of common stock (based upon an initial conversion price of $0.65 per share) at any time at the option of the holder, subject to adjustment for stock splits, stock dividends, combinations, and similar recapitalization transactions (the "*Series D Conversion Ratio*"). Subject to certain exceptions, if the Company issues any shares of common stock or common stock equivalents at a per share price that is lower than the conversion price of the Series D Convertible Preferred Stock, the conversion price will be reduced to the per share price at which such shares of common stock or common stock equivalents are issued. Each share of Series D Convertible Preferred Stock will automatically be converted into shares of common stock at the Series D Conversion Ratio then in effect if, after six months from the closing of the Series D Placement, the common stock trades on the OTCQB (or other primary trading market or exchange on which the common stock is then traded) at a price equal to at least 300% of the then effective Series D Convertible Preferred Stock conversion price for 20 out of 30 consecutive trading days with each trading day having a volume of at least $50,000. Unless waived under certain circumstances by the holder of the Series D Convertible Preferred Stock, such holder's Series D

Convertible Preferred Stock may not be converted if upon such conversion the holder's beneficial ownership would exceed certain thresholds.

In addition, in the event we consummate a merger or consolidation with or into another person or other reorganization event in which our shares of common stock are converted or exchanged for securities, cash or other property, or we sell, lease, license or otherwise dispose of all or substantially all of our assets or we or another person acquire 50% or more of our outstanding shares of common stock, then following such event, the holders of the Series D Convertible Preferred Stock will be entitled to receive upon conversion of the Series D Convertible Preferred Stock the same kind and amount of securities, cash or property which the holders of the Series D Convertible Preferred Stock would have received had they converted the Series D Convertible Preferred Stock immediately prior to such fundamental transaction.

The holders of Series D Convertible Preferred Stock are not entitled to vote on any matters presented to the stockholders of the Company for their action or consideration at any meeting of stockholders of the Company (or by written consent of stockholders in lieu of meeting), except that the holders of Series D Convertible Preferred Stock may vote separately as a class on any matters that would (i) amend, our Restated Articles of Organization, as amended, in a manner that adversely affects the rights of the Series D Convertible Preferred Stock, (ii) alter or change adversely the powers, preferences or rights of the Series D Convertible Preferred Stock or alter or amend the certificate of designation, (iii) authorize or create any class of shares ranking as to dividends, redemption or distribution of assets upon liquidation senior to, or otherwise pari passu with, the Series D Convertible Preferred Stock, or (iv) increase the number of authorized shares of Series D Convertible Preferred Stock.

If, within 12 months of the initial issuance of the Series D Convertible Preferred Stock, we issue any common stock, common stock equivalents, indebtedness or any combination thereof (a "*Subsequent Financing*"), the holders of Series D Convertible Preferred Stock will have the right to participate on a pro-rata basis in up to 50% of such Subsequent Financing.

Series D Warrants

The Series D Warrants originally had an exercise price equal to $0.81 per share of common stock. In April 2012, the number of Series D Warrants increased by 530,406 to a total of 1,047,875 and each Series D Warrant had an exercise price reset to $0.40 per share of common stock. In December of 2013 the number of Series D Warrants increased by 628,733 to a total of 1,676,608 and each Series D Warrant had an exercise price reset to $0.25 per share of common stock. The Series D Warrants will be exercisable beginning on the six-month anniversary of the date of issuance and expire five years from the initial exercise date. The Series D Warrants permit the holder to conduct a "cashless exercise" at any time a registration statement registering, or the prospectus contained therein, is not available for the issuance of the shares of common stock issuable upon exercise of the Series D Warrant, and under certain circumstances at the expiration of the Series D Warrants. The exercise price and/or number of shares of common stock issuable upon exercise of the Series D Warrants are subject to adjustment for certain stock dividends, stock splits or similar capital reorganizations, as set forth in the Warrants. The exercise price is also subject to adjustment in the event that we issue any shares of common stock or common stock equivalents at a per share price that is lower than the exercise price for the Series D Warrants then in effect. Upon any such issuance, subject to certain exceptions, the exercise price will be

reduced to the per share price at which such shares of common stock or common stock equivalents are issued and number of Series D Warrant shares issuable thereunder shall be increased such that the aggregate exercise price payable thereunder, after taking into account the decrease in the exercise price, shall be equal to the aggregate exercise price prior to such adjustment. Unless waived under certain circumstance by the holder of a Series D Warrant, such holder may not exercise the Series D Warrant if upon such exercise the holder's beneficial ownership of the Company's common stock would exceed certain thresholds.

In the event we consummate a merger or consolidation with or into another person or other reorganization event in which our shares of common stock are converted or exchanged for securities, cash or other property, or we sell, lease, license or otherwise dispose of all or substantially all of our assets or we or another person acquire 50% or more of our outstanding shares of common stock, then following such event, the holders of the Series D Warrants will be entitled to receive upon exercise of the Series D Warrants the same kind and amount of securities, cash or property which the holders would have received had they exercised the Series D Warrants immediately prior to such fundamental transaction.

Series G Convertible Preferred Stock

On July 6 and November 15, 2012, we completed a private placement, pursuant to which we sold an aggregate of 145,320 units for a purchase price of $5.00 per unit (the "Series G Purchase Price"), resulting in gross proceeds to us of $726,600 (the "*Series G Private Placement*"). Each unit ("*Series G Unit*") consists of (i) one share of Series G Convertible Preferred Stock, $0.01 par value per share (the "Series G Preferred Stock") convertible into 10 shares of our common stock, (subject to adjustment for stock splits, stock dividends, recapitalization, etc.) and (ii) a three-year warrant to purchase 5 shares of our common stock at a per share exercise price of $0.50 (the "*Series G Warrant*"). The Series G Warrants will be exercisable until the close of business on the third anniversary of the applicable closing date of the Series G Private Placement.

Each share of Series G Preferred Stock will receive a cumulative dividend at the annual rate of (i) four percent (4%) on those shares of Series G Preferred Stock purchased from the Company by an individual purchaser with an aggregate investment of less than $100,000, (ii) six percent (6%) on those shares of Series G Preferred Stock purchased from the Company by an individual purchaser with an aggregate investment of at least $100,000 but less than $250,000, and (iii) twelve percent (12%) on those shares of Series G Preferred Stock purchased from the Company by an individual purchaser with an aggregate investment of at least $250,000. Dividends accruing on the Series G Preferred Stock shall accrue from day to day until, and shall be paid within fifteen (15) days of, the first anniversary of, the original issue date of the Series G Preferred Stock; provided, however, if any shares of the Company's Series E Preferred Stock are outstanding at such time, payment of the accrued dividends on the Series G Preferred Stock shall be deferred until no such shares of Series E Convertible Preferred Stock remain outstanding. The Company may pay accrued dividends on the Series G Preferred Stock in cash or in shares of its common stock equal to the volume weighted average price of the common stock as reported by the OTCQB for the ten (10) trading days immediately preceding the Series G's first anniversary.

At the election of the Company and upon required advanced notice, each share of Series G Preferred Stock will automatically be converted into shares of common stock at the Conversion Ratio then in effect: (i) if, after 6 months from the original issuance date of the Series G Preferred Stock, the common stock trades on the OTCQB (or other primary trading market or exchange on which the common stock is then traded) at a price equal to at least $0.75, for 7 out of 10 consecutive trading days with average daily trading volume of at least 10,000 shares, (ii) on or after the first anniversary of the original issuance date of the Series G Preferred Stock or (iii) upon completion of a firm-commitment underwritten registered public offering by the Company at a per share price equal to at least $0.75, with aggregate gross proceeds to the Company of not less than $2.5 million. Unless waived under certain circumstances by the holder of the Series G Preferred Stock, such holder's Series G Preferred Stock may not be converted if upon such conversion the holder's beneficial ownership would exceed certain thresholds.

The holders of Series G Preferred Stock are not entitled to vote on any matters presented to the stockholders of the Company for their action or consideration at any meeting of stockholders of the Company (or by written consent of stockholders in lieu of meeting), except as required by law.

Series G Warrants

The Series G Warrants issued in the Series G Private Placement had an exercise price equal to $0.50 per share and expired on July 6, 2015.

Series H Convertible Preferred Stock

On December 28, 2012 the Company amended the Articles of Incorporation to authorize 10,000 shares of Series H Convertible Preferred Stock. On January 4, 2013, the Company reported that it had entered into a securities purchase and exchange agreement with an investor, pursuant to which the Company agreed to exchange 1,000,000 shares of the Company's common stock, par value $0.01 per share of common stock held by the investor for an aggregate of 10,000 shares of a newly created series of preferred stock, designated Series H Convertible Preferred Stock, par value $0.01 per share (the "*Series H Preferred Stock*") in a non-cash transaction. The investor originally purchased the common stock from the Company for $0.8025 per share. The exchange ratio was 100 shares of common stock per share of Series H Preferred Stock at a stated conversion price of $0.8025 per share.

Series H2 Convertible Preferred Stock

On December 23, 2014 the Company amended the Articles of Incorporation to authorize 21 shares of Series H2 Convertible Preferred Stock. On December 23, 2014, the Company reported that it had entered into a securities purchase and exchange agreement with an investor, pursuant to which the Company agreed to exchange 2,100,000 shares of the Company's common stock, par value $0.01 per share of common stock held by the investor for an aggregate of 21 shares of a newly created series of preferred stock, designated Series H2 Convertible Preferred Stock, par value $0.01 per share (the "*Series H2 Preferred Stock*") in a non-cash transaction. The investor originally acquired the common stock from the Company for $0.25 per share in the warrant reset transaction on December 23, 2014. The exchange ratio was 100,000 shares of common stock per share of Series H2 Preferred Stock at a stated conversion price of $0.25 per share.

Series J Convertible Preferred Stock

On February 6, March 28 and May 20, 2013, the Company entered into a Securities Purchase with various individuals pursuant to which the Company sold an aggregate of 5,087.5 units for a purchase price of $400.00 per unit (the "Purchase Price"), or an aggregate Purchase Price of $2,034,700. Each unit purchased in the initial tranche consists of (i) one share of a newly created series of preferred stock, designated Series J Convertible Preferred Stock, par value $0.01 per share (the "Series J Convertible Preferred Stock"), convertible into 1,000 shares of the Company's common stock, par value $0.01 per share and (ii) a warrant to purchase 1,000 shares of common stock at an exercise price equal to $0.40 per share. The warrants expire three years from the issuance date.

From the date of issuance of any shares of Series J Convertible Preferred Stock and until the earlier of the first anniversary of such date, the voluntary conversion of any shares of Series J Convertible Preferred Stock, or the date of

any mandatory conversion (solely under the Company's control based upon certain triggering events) of the Series J Convertible Preferred Stock, dividends will accrue on each share of Series J Convertible Preferred Stock at an annual rate of (i) four percent (4%) of the Purchase Price on those shares of Series J Convertible Preferred Stock purchased from the Company pursuant to the Securities Purchase Agreement by an individual purchaser who purchased from the Company shares of Series J Convertible Preferred Stock with an aggregate Purchase Price of less than $250,000, and (ii) six percent (6%) of the Purchase Price on those shares of Series J Convertible Preferred Stock purchased from the Company pursuant to the Securities Purchase Agreement by an individual purchaser who purchased shares of Series J Convertible Preferred Stock with an aggregate purchase price of at least $250,000. Dividends accruing on the Series J Convertible Preferred Stock shall accrue from day to day until the earlier of the first anniversary of the date of issuance of such shares of Series J Convertible Stock, the voluntary conversion of any shares of Series J Convertible Preferred Stock, or the date of any mandatory conversion of the Series J Convertible Preferred Stock, and shall be paid, as applicable, within fifteen (15) days of the first anniversary of the original issue date of the Series J Convertible Preferred Stock, within five (5) days of the voluntary conversion of shares of the Series J Convertible Preferred Stock, or within five (5) days of the mandatory conversion of shares of the Series J Convertible Preferred Stock. The Company may pay accrued dividends on the Series J Convertible Preferred Stock in cash or, in the sole discretion of the Board of Directors of the Company, in shares of its common stock in accordance with a specified formula.

Each share of Series J Convertible Preferred Stock is convertible into 1,000 shares of common stock at the option of the holder on or after the six-month anniversary of the issuance of such share, subject to adjustment for stock splits, stock dividends, recapitalizations and similar transactions (the "Conversion Ratio"). Unless waived under certain circumstances by the holder of Series J Convertible Preferred Stock, such holder's shares of Series J Convertible Preferred Stock may not be converted if upon such conversion the holder's beneficial ownership would exceed certain thresholds.

At the election of the Company and upon required advance notice, each share of Series J Convertible Preferred Stock will automatically be converted into shares of common stock at the Conversion Ratio then in effect: (i) on or after the six-month anniversary of the original issuance date of the Series J Convertible Preferred Stock, the common stock trades on the OTCQB (or other primary trading market or exchange on which the common stock is then traded) at a price per share equal to at least $0.80 for 7 out of 10 consecutive trading days with average daily trading volume of at least 50,000 shares, (ii) on the first anniversary of the original issuance date of the Series J Convertible Preferred Stock or (iii) within three days of the completion of a firm-commitment underwritten registered public offering by the Company at a per share price equal to at least $0.80, with aggregate gross proceeds to the Company of not less than $2.5 million. Unless waived under certain circumstances by the holder of the Series J Convertible Preferred Stock, such holder's Series J Convertible Preferred Stock may not be converted if upon such conversion the holder's beneficial ownership would exceed certain thresholds.

The holders of Series J Convertible Preferred Stock are not entitled to vote on any matters presented to the stockholders of the Company for their action or consideration at any meeting of stockholders of the Company (or by written consent of stockholders in lieu of meeting), except as required by law.

Series J Warrants

The Series J Warrants issued in the Series J Private Placement had an exercise price equal to $0.40 per share and expired on February 6, March 28 and May 20, 2016.

Registration Rights Agreement

In connection with the Private Placement, the Company has agreed that, if, at any time after February 1, 2014, the Company files a Registration Statement relating to an offering of equity securities of the Company (the "Registration Statement"), subject to certain exceptions, including a Registration Statement relating solely to an offering or sale of securities having an aggregate public offering price of less than $5,000,000, the Company shall include in the Registration Statement the resale of the shares of common stock underlying the Warrants. Shares of common stock issued upon conversion of Series J Convertible Preferred Stock or in payment of the dividend on the Series J Convertible Preferred Stock will not be registered and will not be subject to registration rights. This right is subject to customary conditions and procedures.

Series K Convertible Preferred Stock

On December 12, 2013, the Company entered into a Securities Purchase with various individuals pursuant to which the Company sold an aggregate of 4,000 units for a purchase price of $250.00 per unit (the "Purchase Price"), for an aggregate Purchase Price of $1,000,000. Each unit purchased in the initial tranche consists of (i) one share of a newly created series of preferred stock, designated Series K Convertible Preferred Stock, par value $0.01 per share (the "Series K Convertible Preferred Stock"), convertible into 1,000 shares of the Company's common stock, par value $0.01 per share and (ii) a warrant to purchase 500 shares of common stock at an exercise price equal to $0.3125 per share. The warrants expire three years from the issuance date. Of the $1,000,000 invested in the Private Placement, $572,044 was received in cash and $427,956 was from the conversion of outstanding indebtedness and interest. The Company incurred $43,334 of fees in conjunction with this private placement. The purchasers in the initial tranche of the private placement consisted of certain existing and new investors in the Company as well as all of the members of the Company's Board of Directors.

From the date of issuance of any shares of Series K Convertible Preferred Stock and until the earlier of the first anniversary of such date, the voluntary conversion of any shares of Series K Convertible Preferred Stock, or the date of any mandatory conversion (solely under the Company's control based upon certain triggering events) of the Series K Convertible Preferred Stock, dividends will accrue on each share of Series K Convertible Preferred Stock at an annual rate of (i) four percent (4%) of the Purchase Price on those shares of Series K Convertible Preferred Stock purchased from the Company pursuant to the Securities Purchase Agreement by an individual purchaser who purchased from the Company shares of Series K Convertible Preferred Stock with an aggregate Purchase Price of less than $100,000, and (ii) six percent (6%) of the Purchase Price on those shares of Series K Convertible Preferred Stock purchased from the Company pursuant to the Securities Purchase Agreement by an individual purchaser who purchased shares of Series K Convertible Preferred Stock with an aggregate purchase price of at least $100,000. Dividends accruing on the Series K Convertible Preferred Stock shall accrue from day to day until the earlier of the first anniversary of the date of issuance of such shares of Series K Convertible Stock, the voluntary conversion of any shares of Series K Convertible Preferred Stock, or the date of any mandatory conversion of the Series K Convertible Preferred Stock, and shall be paid, as applicable, within fifteen (15) days of the first anniversary of the original issue

date of the Series K Convertible Preferred Stock, within five (5) days of the voluntary conversion of shares of the Series K Convertible Preferred Stock, or within five (5) days of the mandatory conversion of shares of the Series K Convertible Preferred Stock. The Company may pay accrued dividends on the Series K Convertible Preferred Stock in cash or, in the sole discretion of the Board of Directors of the Company, in shares of its common stock in accordance with a specified formula.

Each share of Series K Convertible Preferred Stock is convertible into 1,000 shares of common stock at the option of the holder on or after the six-month anniversary of the issuance of such share, subject to adjustment for stock splits, stock dividends, recapitalizations and similar transactions (the “Conversion Ratio”). Unless waived under certain circumstances by the holder of Series K Convertible Preferred Stock, such holder’s shares of Series K Convertible Preferred Stock may not be converted if upon such conversion the holder’s beneficial ownership would exceed certain thresholds.

At the election of the Company and upon required advance notice, each share of Series K Convertible Preferred Stock will automatically be converted into shares of common stock at the Conversion Ratio then in effect: (i) on or after the six-month anniversary of the original issuance date of the Series K Convertible Preferred Stock, the common stock trades on the OTCQB (or other primary trading market or exchange on which the common stock is then traded) at a price per share equal to at least $0.80 for 7 out of 10 consecutive trading days with average daily trading volume of at least 50,000 shares, (ii) on the first anniversary of the original issuance date of the Series K Convertible Preferred Stock or (iii) within three days of the completion of a firm-commitment underwritten registered public offering by the Company at a per share price equal to at least $0.80, with aggregate gross proceeds to the Company of not less than $2.5 million. Unless waived under certain circumstances by the holder of the Series K Convertible Preferred Stock, such holder’s Series K Convertible Preferred Stock may not be converted if upon such conversion the holder’s beneficial ownership would exceed certain thresholds.

The proceeds from the sale of each Series K Unit were allocated between the Series K Convertible Preferred Stock and the Series K Warrants based on the relative fair value method. The estimated fair value of the Series K Warrants was determined using a Black-Scholes formula, resulting in an allocation of the gross proceeds of $271,422 to the total warrants issued. The allocation of the gross proceeds to the Series K Convertible Preferred Stock was $685,245, net of $43,334 in fees. In accordance with the provisions of ASC 470-20, an additional adjustment in the aggregate between Additional Paid in Capital and Accumulated Deficit of $1,495,415 was recorded for all tranches of Series K to reflect an implicit, deemed non-cash dividend related to the allocation of proceeds between the stock and warrants issued. The $1,495,415 represents the aggregate value of the adjustment to additional paid in capital related to the beneficial conversion feature of the Series K Convertible Preferred Stock. The value adjustment was calculated by subtracting the fair market value of the underlying common stock on the closing dates issuable upon conversion of the Series K Convertible Preferred Stock from the fair market value of the Series K Convertible Preferred Stock as determined when the Company performed a fair market value allocation of the proceeds to the Series K Convertible Preferred Stock and warrants.

On January 29, 2014, the Company entered into a Securities Purchase Agreement with various accredited investors, pursuant to which the Company sold an aggregate of 4,875 units for a purchase price of $250.00 per unit or an aggregate Purchase Price of $1,218,750. This was the second tranche of a $1.5 million private placement previously disclosed by the Company in its Current Report on Form 8-K filed with the Securities and Exchange Commission on December 12, 2013, which is incorporated by reference herein. The Purchasers in the second tranche of the Private Placement consisted of certain existing and new investors in the Company, as well as all of the members of the Company’s board of directors.

Each unit purchased in the second tranche consists of (i) one share of Series K Convertible Preferred Stock, par value $0.01 per share, convertible into 1,000 shares of the Company’s common stock, par value $0.01 per share and (ii) a warrant to purchase 500 shares of common stock at an exercise price equal to $0.3125 per share, with a term expiring on January 29, 2017.

On February 28, 2014, the Company entered into a Securities Purchase Agreement with various accredited investors, pursuant to which the Company sold an aggregate of 1,854 units for a purchase price of $340.00 per unit or an aggregate Purchase Price of $630,360. This was the third tranche of a $1.5 million private placement previously disclosed by the Company in its Current Report on Form 8-K filed with the Securities and Exchange Commission on December 12, 2013, which is incorporated by reference herein. The Purchasers in the third tranche of the Private Placement consisted of certain existing and new investors in the Company.

Each unit purchased in the third tranche consists of (i) one share of Series K Convertible Preferred Stock, par value $0.01 per share convertible into 1,000 shares of the Company’s common stock, par value $0.01 per share and (ii) a warrant to purchase 500 shares of common stock at an exercise price equal to $0.425 per share, with a term expiring on February 28, 2017.

On June 30, 2014, the Company entered into a Securities Purchase Agreement with various accredited investors, pursuant to which the Company sold an aggregate of 734 units for a purchase price of $300.00 per unit or an aggregate Purchase Price of $220,000. This was the fourth tranche of a $1.5 million private placement previously disclosed by the Company in its Current Report on Form 8-K filed with the Securities and Exchange Commission on December 12, 2013, which is incorporated by reference herein. The Purchasers in the fourth tranche of the Private Placement consisted of certain existing and new investors in the Company.

Each unit purchased in the fourth tranche consists of (i) one share of Series K Convertible Preferred Stock, par value $0.01 per share convertible into 1,000 shares of the Company's common stock, par value $0.01 per share and (ii) a warrant to purchase 500 shares of common stock at an exercise price equal to $0.375 per share, with a term expiring on June 30, 2017.

On November 12, 2014, the Company entered into a Securities Purchase Agreement with various accredited investors, pursuant to which the Company sold an aggregate of 1,052 units for a purchase price of $250.00 per unit or an aggregate Purchase Price of $263,000. This was the fifth tranche of a $1.5 million private placement previously disclosed by the Company in its Current Report on Form 8-K filed with the Securities and Exchange Commission on December 12, 2013, which is incorporated by reference herein. The Purchasers in the fourth tranche of the Private Placement consisted of certain existing and new investors in the Company.

Each unit purchased in the fifth tranche consists of (i) one share of Series K Convertible Preferred Stock, par value $0.01 per share convertible into 1,000 shares of the Company's common stock, par value $0.01 per share and (ii) a warrant to purchase 500 shares of common stock at an exercise price equal to $0.3125 per share, with a term expiring on November 12, 2017.

The Private Placement was originally expected to raise $1.5 million and close on or before January 31, 2014. On January 29, 2014, the Company's Board of Directors voted to increase the subscription amount of the Private Placement by $718,750. The Board of Directors also voted to extend the Private Placement until February 28, 2014. On February 28, 2014 the Company's Board of Directors voted to increase the subscription amount once again to a total of $3.5 million and extended the closing to April 4, 2014. On April 13, 2014 the Company's Board of Directors voted to increase the subscription amount by $1 million, to a total of $4.5 million, and extended the closing to May 31, 2014. On July 7, 2014 the Company's Board of Directors voted to extend the closing to August 15, 2014. Together with the initial tranche of $1,000,000 that closed on December 12, 2013, the second tranche of $1,218,750 that closed January 29, 2014, the third tranche of $630,360 that closed February 28, 2014, the fourth tranche of $220,000 that closed June 30, 2014, and the fifth tranche of $263,000 that closed November 12, 2014,the total consideration received by the Company in the Private Placement is $3,332,110, which is comprised of $2,511,404 in cash and $820,706 from the conversion of outstanding indebtedness and Board of Director fees. The placement was closed after the November 12, 2014 round.

On September 22, 2014 the Company issued 64,000 shares of common stock for the conversion of 64 shares of Series K Preferred Convertible Stock.

In connection with the Series K Warrants, we calculated the fair value of the warrants received as described above using the Black- Scholes formula with the below assumptions:

Assumptions	Series K Warrants December 12, 2013	Series K Warrants January 29, 2014	Series K Warrants February 28, 2014	Series K Warrants June 30, 2014	Series K Warrants November 12, 2014
Contractual life (in months)	36	36	36	36	36
Expected volatility	136.1	152.4	152.7	153.9	153.9
Risk-free interest rate	0.39 %	0.39 %	0.39 %	0.90 %	0.90 %
Exercise price	$ 0.3125	$ 0.3125	$ 0.425	$ 0.375	$ 0.3125
Fair value per warrant	$ 0.20	$ 0.30	$ 0.37	$ 0.29	$ 0.23

The holders of Series K Convertible Preferred Stock are not entitled to vote on any matters presented to the stockholders of the Company for their action or consideration at any meeting of stockholders of the Company (or by

written consent of stockholders in lieu of meeting), except as required by law.

Series K Warrants

The warrants issued in the Private Placement have an exercise price equal to $0.3125 per share, for the December 12, 2013 and January 29, 2014 warrants, $0.425 per share for the February 28, 2014 warrants, $0.375 per share for the June 30, 2014 warrants and $0.3125 per share for the November 12, 2014 warrants, with a term expiring three years from the issuance date. The warrants also permit the holder to conduct a “cashless exercise” at any time the holder of the warrant is an affiliate of the Company. The exercise price and/or number of shares issuable upon exercise of the warrants will be subject to adjustment for stock dividends, stock splits or similar capital reorganizations, as set forth in the warrant agreement.

Subject to the terms and conditions of the warrants, at any time commencing six months from the closing date of the sale of Units under the Securities Purchase Agreement the Company has the right to call the warrants for cancellation if the volume weighted average price of its common stock on the OTCQB (or other primary trading market or exchange on which the common stock is then traded) equals or exceeds three times the per share exercise price of the warrants for either (i) 10 consecutive trading days or (ii) 15 out of 25 consecutive trading days.

Registration Rights Agreement

In connection with the Private Placement, the Company has agreed that, if, at any time after February 1, 2014, the Company files a Registration Statement relating to an offering of equity securities of the Company (the "Registration Statement"), subject to certain exceptions, including a Registration Statement relating solely to an offering or sale of securities having an aggregate public offering price of less than $5,000,000, the Company shall include in the Registration Statement the resale of the shares of common stock underlying the warrants. Shares of common stock issued upon conversion of Series K Convertible Preferred Stock or in payment of the dividend on the Series K Convertible Preferred Stock will not be registered and will not be subject to registration rights. This right is subject to customary conditions and procedures.

Common Stock

Stock Options and Warrants

Our stockholders approved our amended 2005 Equity Incentive Plan (the "*2005 Plan*") pursuant to which an aggregate of 1,800,000 shares of our common stock were reserved for issuance upon exercise of stock options or other equity awards made under the 2005 Plan. Under the 2005 Plan, we may award stock options, shares of common stock, and other equity interests in the Company to employees, officers, directors, consultants, and advisors, and to any other persons the Board of Directors deems appropriate. As of December 31, 2016, options to acquire 1,153,750 shares were outstanding under the 2005 Plan with 586,250 shares available for future grant under the Plan.

On December 12, 2013 at the Company's special meeting the shareholders approved the 2013 Equity Incentive Plan (the "*2013 Plan*") pursuant to which 3,000,000 shares of our common stock were reserved for issuance upon exercise of stock options or other equity awards under the 2013 Plan. Under the Plan, we may award stock options, shares of common stock, and other equity interests in the Company to employees, officers, directors, consultants, and advisors, and to any other persons the Board of Directors deems appropriate. As of December 31, 2016, options to acquire 2,047,500 shares were outstanding under the Plan with 952,500 shares available for future grant under the 2013 Plan.

On November 29, 2015 the Company's Board of Directors adopted the 2015 Nonqualified Stock Option Plan (the "*2015 Plan*") pursuant to which 5,000,000 shares of our common stock were reserved for issuance upon exercise of non-qualified stock options under the 2015 Plan. Under the Plan, we may award non-qualified stock options in the Company to employees, officers, directors, consultants, and advisors, and to any other persons the Board of Directors deems appropriate. As of December 31, 2016, non-qualified options to acquire 2,068,000 shares were outstanding under the Plan with 2,932,000 shares available for future grants under the 2015 Plan.

All of the outstanding non-qualified options had an exercise price that was at or above the Company's common stock share price on December 31, 2016.

The following tables summarize information concerning options and warrants outstanding and exercisable:

	Stock Options		**Warrants**		**Total**	
	Shares	**Weighted Average price per share**	**Shares**	**Weighted Average price per share**	**Shares**	**Exercisable**
Balance outstanding, January 1, 2015	3,406,250	$ 0.51	19,182,201	$ 0.49	22,588,451	20,858,111
Granted	2,500,000	0.40	10,837,141	0.40	13,337,141	
Exercised	-	-	-	-	-	
Expired	(205,000)	1.00	(791,678)	0.31	(996,678)	
Forfeited	(130,000)	0.70	-	-	(130,000)	
Balance outstanding, December 31, 2015	5,571,250	$ 0.44	29,227,664	$ 0.44	34,798,914	31,664,469
Granted	-	-	8,179,552	0.42	8,179,552	
Exercised	-	-	(70,000)	0.31	(70,000)	
Expired	(186,000)	1.00	(10,877,521)	0.55	(11,063,521)	
Forfeited	(116,000)	0.51	-	-	(116,000)	
Balance outstanding, December 31, 2016	5,269,250	$ 0.42	26,459,695	$ 0.40	31,728,945	29,730,959

	Options Outstanding		**Options Exercisable**	
Range of Exercise Prices		**Weighted Average**		**Weighted Average**

	Number of Options	Remaining Contractual Life (Years)	Exercise Price	Number of Options	Remaining Contractual Life (Years)	Exercise Price
$0.30 - $0.39	1,625,500	7.7	$ 0.30	1,342,762	7.7	$ 0.30
0.40 - 0.49	2,786,000	8.7	0.40	1,454,665	8.4	0.40
0.50 - 0.59	226,250	5.6	0.50	226,250	5.6	0.50
0.60 - 0.69	385,500	3.1	0.60	385,500	3.1	0.60
0.70 - 1.25	246,000	2.3	1.00	246,000	2.3	1.00
$0.30 - $1.25	5,269,250	7.6	$ 0.42	3,655,177	7.1	$ 0.43

There was $369,224 of total unrecognized compensation cost, net of estimated forfeitures, related to non-vested stock options granted as of December 31, 2016. This cost is expected to be recognized over a period of 1.81 years, and will be adjusted for any future changes in estimated forfeitures.

The Series D Warrants issued in connection with the registered direct offering of Series D Convertible Preferred are measured at fair value and liability-classified because the Series D Warrants contain “down-round protection” and therefore, do not meet the scope exception for treatment as a derivative under ASC 815, *Derivatives and Hedging*, (“ASC 815”). Since “down-round protection” is not an input into the calculation of the fair value of the warrants, the warrants cannot be considered indexed to the Company’s own stock which is a requirement for the scope exception as outlined under ASC 815. The estimated fair value of the warrants was determined using the binomial model, resulting in an allocation of the gross proceeds $283,725 to the warrants issued in the Series D registered direct offering. The fair value will be affected by changes in inputs to that model including our stock price, expected stock price volatility, the contractual term, and the risk-free interest rate. We will continue to classify the fair value of the warrants as a liability until the warrants are exercised, expire or are amended in a way that would no longer require these warrants to be classified as a liability, whichever comes first. The down-round protection for the Series D Warrants survives for the life of the Series D Warrants, which ends in May 2017.

In connection with the senior secured convertible debentures issued in our private placement with closings in 2015 and 2016, we issued warrants to the lenders to purchase an aggregate 8,767,857 and 2,517,052 shares of the Common Stock, respectively, at an exercise price of $0.40 per share, expiring five years after the issuance date. We also issued, in 2015 and 2016, warrants to the placement agent to purchase an aggregate 1,689,286 and 412,500 shares of the Common Stock, respectively, at an exercise price of $0.40 per share, expiring five years after the issuance date.

On December 31, 2015, we extended the expiration dates to two more years on certain warrants related to bridge loans. These warrants were originally issued with a three-year expiration. The incremental value for the warrant extension was $69,627 which was recognized as interest expense.

In 2015, we recorded expense of $93,488 related to warrants issued an investor relations firm in 2014 to purchase 300,000 shares of restricted common stock.

In November 2016 we issued warrants to purchase 330,000 shares of restricted common stock to an investor relations firm for services rendered with a total fair value of $84,735.

Common Stock Issuances

With respect to the convertible debenture for $223,000 signed by the Company on December 4, 2013, a lender, with the prior approval of the Company, chose to convert a portion of the outstanding note balance into shares of the Company's common stock, and to extend the note for approximately 45 days after each conversion, as follows:

On January 14, 2015 $25,000 was converted into 100,000 shares of the Company's common stock.

On February 25, 2015 $38,000 was converted into 140,741 shares of the Company's common stock.

On April 10, 2015 $35,000 was converted into 140,000 shares of the Company's common stock.

On May 29, 2015 $35,000 was converted into 140,000 shares of the Company's common stock.

On July 21, 2015 $20,000 was converted into 80,000 shares of the Company's common stock.

On August 13, 2015 $40,000 was converted into 160,000 shares of the Company's common stock.

On September 25, 2015 $30,000 was converted into 120,000 shares of the Company's common stock.

For each extension, the Company paid a fee of $13,000, $13,000, $10,000, and $8,000, respectively. This note was paid off in its entirety on November 5, 2015.

During the year ended December 31, 2015, the Company issued 1,755,091 shares with a fair value of $457,030 for consulting and investor relation services.

On August 14, 2015, the Company closed a Securities Exchange Agreement with Everest Investments Holdings of Warsaw, Poland under which Everest purchased 1,000,000 shares of the Company's restricted Common Stock at a purchase price of $0.50/share. In exchange, the Company received 601,500 shares of Everest Investments ("Everest"), a publicly-traded company on the Main Market of the Warsaw Stock Exchange. The shares of Everest were valued at approximately $400,000 as of the closing date.

With respect to the convertible debenture for $150,000 signed by the Company on June 4, 2014, a lender, with prior approval of the Company, chose to convert a portion of the outstanding note balance into shares of the Company's common stock, and to extend the note for approximately 30 days after each conversion, as follows:

On February 18, 2015 $25,000 was converted into 100,000 shares of the Company's common stock.

On March 18, 2015 $22,500 was converted into 90,000 shares of the Company's common stock.

On March 31, 2015 $27,500 was converted into 110,000 shares of the Company's common stock.

On April 17, 2015 $30,000 was converted into 120,000 shares of the Company's common stock.

With respect to the convertible debenture for $75,000 signed by the Company on November 10, 2014, a lender, upon the request of the Company, on June 8, 2015 agreed to extend the conversion date of the note until July 20, 2015. The lender received 40,000 shares of the Company's common stock in exchange for the extension. The Company recorded $10,000 to interest expense for this transaction. This note was paid off in its entirety on July 24, 2015.

On various dates in December 2015, $58,919 of existing convertible debt and interest was converted into 235,676 shares of the Company's common stock.

On April 22, 2016, we issued 22,996 shares of common stock in connection with a cashless exercise of 70,000 warrants.

On May 6, 2016, all remaining Series K preferred shareholders except one converted 4,600 shares of preferred stock into approximately 4.6 million shares of the Company's common stock. The Company issued 247,435 shares of common stock to pay the accrued dividend of $63,413 on Series K preferred stock.

On May 13, 2016, we issued 420,849 shares of common stock to convert $117,837 of convertible note principal and related interest. See Note 8.

On various dates from January to September 2016, we issued a total of 297,500 shares of common stock in connection with the convertible notes issued to lenders. We also issued 100,049 shares of common stock to settle debt of $41,200. See Note 8.

On August 29, 2016, a Series J preferred shareholder converted 25 shares of preferred stock into 25,000 shares of the Company's common stock. The Company issued 1,112 shares of common stock to pay the accrued dividend of $442 on Series J preferred stock.

From August 29, 2016 through December 31, 2016, we completed five tranches of a private placement, pursuant to which we sold an aggregate of 1,525,000 shares of common stock, $0.01 par value, for a purchase price of $0.40 per share, resulting in gross proceeds to us of $610,000. The shares were issued and sold to a total of 2 accredited investors pursuant to a securities purchase agreement entered into as of August 29, 2016. The investors received warrants to purchase 1,525,000 shares of the Company's common stock at $0.50 exercise price. The warrants expire 5 years after issuance. We also incurred stock issuance costs related to broker and legal fees of $79,035 which were charged to additional paid in capital.

On various dates from January to December 2016 the Company issued 755,000 shares of restricted common stock to investor relations firms for services rendered with a total fair value of $332,696.

(10) Subsequent Events

On April 3, 2017, we signed a six-month agreement with an investor relations firm. The agreement includes a cash payment of $10,000 plus a convertible 8-month note for $50,000 with the following significant terms: (i) convertible at $0.40/share, (ii) bears 10% annual interest, (iii) a 20% pre-payment penalty if the Company wants to pre-pay the Note, and (iv) a default rate of 18%.

On March 21, 2017, we received an eight-month, non-convertible loan of $170,000 from an accredited investor. The loan earns an annual interest rate of 10% and includes a 10% original issue discount. We also agreed to issue the investor 170,000 shares of restricted common stock.

On March 16, 2017, we awarded 660,000 incentive stock options to certain employees and 1,855,000 non-qualified stock options to officers, consultants and directors of the Company. We also awarded 100,000 non-qualified stock options to a consultant on March 31, 2017. Terms of the stock options include the following significant items: (i) $0.28 exercise price, (ii) 10-year life, (iii) 36 month vesting equally per month for employees and 12 month vesting equally per month for directors, (iv) options vest immediately upon change in-control.

On March 14, 2017 we received an eight-month, non-convertible loan of $250,000 from a privately-held investment firm. The loan earns an annual interest rate of 10% and includes a 10% original issue discount. We also agreed to issue the investor 250,000 shares of restricted common stock.

On March 2, 2017 we signed a Merchant Agreement with a lender. Under the agreement we received a loan of $75,000. The Company paid no fees in connection with this loan.

On February 15, 2017 we received a six-month, non-convertible loan of $110,000 from each of two accredited investors. We agreed to issue the investors 170,000 shares of restricted common stock. The loans earn no interest but carry a 10% original issue fee.

On February 6, 2017 we signed a Merchant Agreement with a lender. Under the agreement we received a loan of $125,000. The Company paid $1,250 in fees in connection with this loan. Under the agreement, $16,180 was used to pay off the prior loan.

We received $250,000 in January 2017 and $500,000 in February 2017 pursuant to the October Revolving Note and we issued to the Investor additional warrants to purchase 1,875,000 shares of our common stock. The terms of the Warrants are identical except for the exercise date, issue date, and termination date. Interest on the principal balance of the Revolving Note shall be paid in full on the Maturity Date, unless otherwise paid prior to the Maturity Date. An advance of $250,000 was received from the same investor on March 23, 2017.

On January 17, 2017, we signed a one-year agreement with an investor relations firm. We have the right to terminate the agreement within 10 days of the end of each three-month period. We are committed to pay the IR firm $25,000 for each three-month term, in three equal monthly allotments, should we choose to keep them under contract. We also have awarded the IR firm warrants to purchase the Company’s restricted common stock at an exercise price of $0.40/share. The number of warrants and exercise price that we are committed to pay the IR firm for each three-month period, should we choose to keep them under contract, is as follows: Months 1-3: 100,000 warrants at $0.40. Months 4-6: 125,000 warrants at $0.60. Months 7-9: 125,000 warrants at $0.80. Months 10-12: 150,000 warrants at $1.00.

In January 2017, we executed an amendment to the July 1, 2016 convertible note that was due on January 6, 2017. We received an extension of up to three months on the note’s due date. In exchange for the extension, we agreed to issue 50,000 shares of restricted common stock and pay the investor $10,000 for each 30-day extension. We made a payment of $34,000 in January 2017 for the first one-month extension and interest on the note from the initial close date through February 6, 2017. On February 28, 2017 the note was paid in full.

Shares of Common Stock

Warrants to Purchase Shares of Common Stock

PROSPECTUS

Joseph Gunnar & Co.

, 2017

Through and including , 2017 (the 25th day after the date of this offering), all dealers effecting transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to a dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to an unsold allotment or subscription

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution

The following table sets forth the costs and expenses, other than underwriting discounts and commissions, to be paid by the Registrant in connection with the issuance and distribution of the common stock and warrants being registered. All amounts other than the SEC registration fees and FINRA fees are estimates.

SEC Registration Fee	$2,346.98
FINRA Filing Fee	$4,845.31
NASDAQ Filing Fee	$*
Printing Fees and Expenses	$*
Accounting Fees and Expenses	$*
Legal Fees and Expenses	$*
Transfer Agent and Registrar Fees	$*
Miscellaneous Fees and Expenses	$*
Total	$*

* To be completed by amendment.

Item 14. Indemnification of Directors and Officers

Section 8.51 of the Massachusetts Business Corporation Act (the "MBCA"), under which the Registrant is governed, provides that a corporation may indemnify a director who is a party to a proceeding because he is a director against liability incurred in the proceeding if he conducted himself in good faith and he reasonably believed that his conduct was in the best interests of the corporation or that his conduct was at least not opposed to the best interests of the corporation, and, in the case of any criminal proceeding, he had no reasonable cause to believe his conduct was unlawful or he engaged in conduct for which he shall not be liable under a provision of the articles of organization. Section 8.51 also permits a corporation to indemnify a director for conduct for which such individual is or would be exculpated under the corporation's articles of organization, whether or not the director satisfied a particular standard of conduct. Section 8.52 of the MBCA requires corporations to indemnify any director who was wholly successful, on the merits or otherwise, in the defense of any proceeding to which he was a party because he was a director of the

corporation against reasonable expenses incurred by him in connection with the proceeding.

Section 8.53 of the MBCA provides that, before the final disposition of a proceeding, a corporation may advance funds to pay for or reimburse the reasonable expenses incurred by a director who is party to such proceeding because he is a director if he delivers to the corporation (a) a written affirmation of his good faith belief that he has met the relevant standard of good faith described in Section 8.51 of the MBCA or that the proceeding involves conduct for which liability has been eliminated pursuant to Section 2.02 of the MBCA and (b) a written undertaking with an unlimited general obligation of the director to repay any funds advanced if he is not entitled to mandatory indemnification under Section 8.52 of the MBCA and it is ultimately determined, under Section 8.54 or Section 8.55 of the MBCA that he does not meet the relevant standard of conduct described in Section 8.51.

Section 8.56 of the MBCA provides that a corporation may indemnify and advance expenses to an officer of the corporation who is a party to a proceeding because he is an officer of the corporation to the same extent as a director, and, if he is an officer but not a director, to such further extent as may be provided by the articles of organization, the by-laws, a resolution of the board of directors or contract, except for liability arising out of acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law. This broader permissible indemnification for officers also is available for a director who is an officer if the individual becomes party to a proceeding on the basis of an act or omission solely as an officer. Section 8.56 of the MBCA also provides that an officer of the corporation who is not a director is entitled to mandatory indemnification under Section 8.52 of the MBCA, and that the officer may apply to a court for indemnification or an advance for expenses, in each case to the same extent to which a director may be entitled to indemnification or advance under those provisions.

Section 2.02 of the MBCA provides that the articles of organization of a corporation may contain a provision eliminating or limiting the personal liability of a director to the corporation for monetary damages for breach of a fiduciary duty as a director notwithstanding any provision of law imposing such liability; provided, however, that such provision shall not eliminate or limit the liability of a director (1) for any breach of the director's duty of loyalty to the corporation or its shareholders, (2) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (3) for improper distributions under Sections 6.40 of the MBCA or (4) for any transaction from which the director derived an improper personal benefit.

Our Restated Articles of Organization, as amended, state as follows:

"Article 6G. Indemnification. The corporation may provide, either in the corporation's By-laws or by contract, for the indemnification of directors, officers, employees and agents, by whomever elected or appointed, to the full extent presently permitted by law; provided, however, that if applicable law is hereafter modified to permit indemnification in situations where it was not theretofor permitted, then such indemnification may be permitted to the full extent permitted by such law as amended."

Our By-laws, as amended, include provisions to permit the indemnification of officers and directors of the Company for damages arising out of the performance of their duties unless such damages arise out of the officer's or director's failure to exercise his duties and to discharge the duties of his office in good faith and in the reasonable belief that his action was in, or not opposed to, the best interest of the Company, and with respect to any criminal action or proceeding, had no reasonable cause to believe that his conduct was unlawful.

We have been advised that, in the opinion of the SEC, any indemnification for liabilities arising under the Securities Act is against public policy, as expressed in the Securities Act, and is, therefore, unenforceable.

The Registrant has a directors and officers liability policy that insures the Registrant’s directors and officers against certain liabilities which they may incur as directors or officers of the Registrant.

Item 15. Recent Sales of Unregistered Securities

The following sets forth information regarding all unregistered securities sold by us in transactions that were exempt from the requirements of the Securities Act in the last three years. Except where noted, all of the securities discussed in this Item 15 were all issued in reliance on the exemption under Section 4(a)(2) of the Securities Act.

2014

On February 10, 2014 a lender, with the prior approval of the Company, chose to convert $37,500 of their outstanding note balance into 150,000 shares of the Company’s common stock.

On June 23, 2014 a lender, with the prior approval of the Company, chose to convert $50,000 of their outstanding note balance into 200,000 shares of the Company’s common stock.

In March and April 2014, a Series D warrant holder exercised warrants to purchase 596,658 shares of common stock resulting in net proceeds to the Company of $149,164.

In April 2014 we issued 733,169 shares of common stock to holders of Series G Convertible Preferred Stock for the conversion of 58,750 shares of preferred and $58,267 of accrued and unpaid dividends on the Series G Convertible Preferred Stock. We also issued 92,500 shares of common stock to holders of Series J Convertible Preferred Stock for the conversion of 92.5 shares of Series J Convertible Preferred Stock.

83

In July 2014 we issued 1,517,466 shares of common stock to holders of Series J Convertible Preferred Stock for the conversion of 1,449 shares of preferred and $24,648 of accrued and unpaid dividends on the Series J Convertible Preferred Stock. On August 13. 2014 we issued 200,000 shares of common stock to an investor relations firm for services. The Company recorded $52,000 as expense related to these services. On September 9, 2014 we issued 75,000 shares of commons stock to a lender as a fee for a $175,000 loan. On September 18, 2014 we issued 75,000 shares of common stock to and investor relations firm as payment for services provided to the Company in 2014. The Company recorded $44,250 in expense related to this transaction.

On September 22, 2014 the Company issued 64,000 shares of common stock for the conversion of 64 shares of Series K Preferred Convertible Stock. On December 22, 2014 the Company issued 1,035,000 shares of common stock for the conversion of 1,035 shares of Series K Preferred Convertible Stock.

In December we issued a total of 160,000 shares of common stock to a lender in exchange for $49,000 of outstanding loans and fees. We also issued a total of 238,830 shares of common stock to four investor relations firms for services provided.

On December 23, 2014 we issued 3,612,000 shares of common stock for the exercise of warrants in a warrant reset agreement. 2,100,000 of these common stock shares were converted to Series H2 Convertible Preferred Stock.

Warrant Reset Agreement

On December 23, 2014, The Company closed a series of Warrant Reset Agreements ("*Warrant Reset Agreements*") with 30 warrant holders (the "*Warrant Holders*") in order to re-price their Common Stock Purchase Warrants (the "*Warrants*"). In consideration for the Warrant Holder exercising their outstanding Warrants by or before December 23, 2014, the Company agreed to reduce the exercise price to $0.25 per warrant share. In addition, for each warrant exercised (the "*Exercised Warrant*"), the Warrant Holder received a New Warrant (the "*New Warrant*") to purchase that same number of Warrant Shares as exercised, at an exercise price of $0.40 per share. If the Exercised Warrant terminated on or before December 31, 2015, the date of termination of the New Warrant was December 31, 2015. If the date of termination of the Exercised Warrant was after December 31, 2015, the date of termination of the New Warrant was the same as that of the Exercised Warrant.

As a result of the Warrant Reset Agreements, the Company received $903,000 from the exercise of warrants and incurred $40,481 in fees. The Company has issued New Warrants for 3,612,000 warrant shares, and has requested its transfer agent to issue 3,612,000 shares of restricted Common Stock (the "*Exercised Warrant Shares*") to the investors. Neither the Exercised Warrant Shares nor the shares underlying the New Warrants will be registered for sale pursuant to a registration statement.

2015

With respect to the convertible debenture for $223,000 signed by the Company on December 4, 2013, a lender, with the prior approval of the Company, chose to convert a portion of the outstanding note balance into shares of the Company's common stock, and to extend the note for approximately 45 days after each conversion, as follows:

On January 14, 2015 $25,000 was converted into 100,000 shares of the Company's common stock.

On February 25, 2015 $38,000 was converted into 140,741 shares of the Company's common stock.

On April 10, 2015 $35,000 was converted into 140,000 shares of the Company's common stock.

On May 29, 2015 $35,000 was converted into 140,000 shares of the Company's common stock.

On July 21, 2015 $20,000 was converted into 80,000 shares of the Company's common stock.

On August 13, 2015 $40,000 was converted into 160,000 shares of the Company's common stock.

On September 25, 2015 $30,000 was converted into 120,000 shares of the Company's common stock.

For each extension, the Company paid a fee of $13,000, $13,000, $10,000, and $8,000, respectively. This note was paid off in its entirety on November 5, 2015.

During the year ended December 31, 2015, the Company issued 1,755,091 shares with a fair value of $457,030 for consulting and investor relation services.

On August 14, 2015, the Company closed a Securities Exchange Agreement with Everest Investments Holdings of Warsaw, Poland under which Everest purchased 1,000,000 shares of the Company's restricted Common Stock at a purchase price of $0.50/share. In exchange, the Company received 601,500 shares of Everest Investments ("Everest"), a publicly-traded company on the Main Market of the Warsaw Stock Exchange. The shares of Everest were valued at approximately $400,000 as of the closing date.

With respect to the convertible debenture for $150,000 signed by the Company on June 4, 2014, a lender, with prior approval of the Company, chose to convert a portion of the outstanding note balance into shares of the Company's common stock, and to extend the note for approximately 30 days after each conversion, as follows:

On February 18, 2015 $25,000 was converted into 100,000 shares of the Company's common stock.

On March 18, 2015 $22,500 was converted into 90,000 shares of the Company's common stock.

On March 31, 2015 $27,500 was converted into 110,000 shares of the Company's common stock.

On April 17, 2015 $30,000 was converted into 120,000 shares of the Company's common stock.

With respect to the convertible debenture for $75,000 signed by the Company on November 10, 2014, a lender, upon the request of the Company, on June 8, 2015 agreed to extend the conversion date of the note until July 20, 2015. The lender received 40,000 shares of the Company's common stock in exchange for the extension. The Company recorded $10,000 to interest expense for this transaction. This note was paid off in its entirety on July 24, 2015.

On various dates in December 2015, $58,919 of existing convertible debt and interest was converted into 235,676 shares of the Company's common stock.

2016

Senior Secured Convertible Debentures and Warrants

We entered into Subscription Agreements (the "Subscription Agreement") with various individuals (each, a "Purchaser") between July 23, 2015 and March 31, 2016, pursuant to which the Company sold Senior Secured Convertible Debentures (the "Debentures") and warrants to purchase shares of common stock equal to 50% of the number of shares issuable pursuant to the subscription amount (the "Warrants") for an aggregate purchase price of $6,329,549 (the "Purchase Price").

The Company issued a principal aggregate amount of $6,962,504 in Debentures which includes a 10% original issue discount on the Purchase Price. The Debenture does not accrue any additional interest during the first year it is outstanding but accrues interest at a rate equal to 10% per annum for the second year it is outstanding. The Debenture has a maturity date of two years from issuance. The Debenture is convertible any time after its issuance date. The Purchaser has the right to convert the Debenture into shares of the Company's common stock at a fixed conversion price equal to $0.28 per share, subject to applicable adjustments. In the second year that the Debenture is outstanding, any interest accrued shall be payable quarterly in either cash or common stock, at the Company's discretion.

At any time after the Issuance Date, the Company has the option, subject to certain conditions, to redeem some or all of the then outstanding principal amount of the Debenture for cash in an amount equal to the sum of (i) 120% of the then outstanding principal amount of the Debenture, (ii) accrued but unpaid interest and (iii) any liquidated damages and other amounts due in respect of the Debenture.

The Company issued warrants exercisable into a total of 11,302,766 shares of our common stock. The Warrants issued in this transaction are immediately exercisable at an exercise price of $0.40 per share, subject to applicable adjustments including full ratchet anti-dilution in the event that we issue any securities at a price lower than the exercise price then in effect. The Warrants have an expiration period of five years from the original issue date. The Warrants are subject to adjustment for stock splits, stock dividends or recapitalizations and also include anti-dilution price protection for subsequent equity sales below the exercise price.

Subject to the terms and conditions of the Warrants, at any time commencing six months from the Final Closing, the Company has the right to call the Warrants for cancellation if the volume weighted average price of its Common Stock on the OTCQB (or other primary trading market or exchange on which the Common Stock is then traded) equals or exceeds three times the per share exercise price of the Warrants for 15 out of 20 consecutive trading days.

Other convertible notes

On May 13, 2016, one lender converted an outstanding note issued on April 28, 2015 and the related accrued interest totaling $117,837 to 420,849 common shares. As of September 30, 2016, the outstanding balance on the note was zero.

On May 24, we sold an additional convertible note for $107,000 with warrants to purchase 50,000 shares of common stock at an exercise price of $0.55 per share. The purchaser has the right to convert the notes into shares of the Company’s common stock at a fixed conversion price equal to $0.45 per share, subject to applicable adjustments. The estimated fair value of the warrants was determined using the binomial model, resulting in an allocation of $12,406 to the total warrants and the recognition of a beneficial conversion feature of $7,962, both of which were recorded as a discount to the note. We evaluated the convertible note and warrants for derivative liability treatment and determined that these instruments do not include certain rights such as price protection like our previous debt financings. Accordingly, we concluded that this financing arrangement did not qualify for derivative accounting treatment.

On June 14, 2016, we sold an additional convertible note for $115,000 and issued 30,667 common shares to compensate the lender. On July 1, 2016, the note was modified to increase the principal amount to $200,000 and we received the remaining proceeds of $85,000 on the same date and issued 34,333 common shares as compensation to the lender. The lender has the right to convert the note into shares of the Company’s common stock at fixed conversion price equal to $0.45 per share, subject to applicable adjustments. We valued the total 65,000 common shares using the stock prices at the respective dates the note proceeds were received and recorded the relative fair value of the shares amounting to $26,000 as a debt discount to be amortized over the term of the loan. We then computed the effective conversion price of the note, noting that no beneficial conversion feature exists. We also evaluated the convertible note for derivative liability treatment and determined that the instrument does not include certain rights such as price protection like our previous debt financing. Accordingly, we concluded that this financing arrangement did not qualify for derivative accounting treatment.

On July 29, 2016, we sold an additional convertible note for $100,000 and issued 32,500 common shares to compensate the lender. The lender has the right to convert the notes into shares of the Company's common stock at a fixed conversion price equal to $0.45 per share, subject to applicable adjustments. The proceeds were allocated between the convertible note and shares of common stock based on their relative fair values. The relative fair values of the convertible note and the common shares was $87,241 and $12,759, respectively. We then computed the effective conversion price of the note, noting that the convertible debt gave rise to a beneficial conversion feature (BCF) of $12,759. The sum of the relative fair value of the common shares and the BCF of $25,518 was recorded as a debt discount to be amortized over the term of the loan. We also evaluated the convertible note for derivative liability treatment and determined that the instruments does not include certain rights such as price protection like our previous debt financings. Accordingly, we concluded that this financing arrangements did not qualify for derivative accounting treatment.

On September 15, 2016, we sold an additional convertible note for $500,000 and issued 200,000 common shares to compensate the lender. The lender has the right to convert the notes into shares of the Company's common stock at a fixed conversion price equal to $0.45 per share, subject to applicable adjustments. The convertible note includes an original issue discount of $40,541 and is subject to annual interest of 9%. The proceeds were allocated between the convertible note and shares of common stock based on their relative fair values. The relative fair value of the convertible note was $434,028. The allocation of the gross proceeds to the shares of common stock was $65,972 and recorded as a debt discount to be amortized over the term of the loan. We then computed the effective conversion price of the note, noting that no beneficial conversion feature exists. We also evaluated the convertible note for derivative liability treatment and determined that the instrument does not include certain rights such as price protection like our previous debt financings. Accordingly, we concluded that this financing arrangement did not qualify for derivative accounting treatment.

Other Issuances

On August 29, September 9 and September 14, 2016, we completed three tranches of a private placement (the "Fall 2016 Private Placement"), pursuant to which we sold an aggregate of 1,125,000 shares of common stock, $0.01 par value (the "Shares"), for a purchase price of $0.40 per share, resulting in gross proceeds to us of approximately $450,000. The Shares were issued and sold to a total of 2 accredited investors pursuant to a Securities Purchase Agreement entered into as of the date of their investments. The investors received warrants to purchase a total of 1,125,000 shares of the Company's common stock at an exercise price of $0.50. The warrants expire 5 years after issuance.

On October 11 and November 10, 2016, we completed two additional tranches of the Fall 2016 Private Placement, pursuant to which we sold an aggregate of 400,000 shares of common stock, $0.01 par value (the "Shares"), for a purchase price of $0.40 per share, resulting in gross proceeds to us of approximately $160,000. The Shares were issued and sold to a total of 2 accredited investors pursuant to a Securities Purchase Agreement entered into as of the date of their investments. The investors received warrants to purchase a total of 400,000 shares of the Company's common stock at an exercise price of $0.50. The warrants expire 5 years after issuance.

The Fall 2016 Private Placement securities were issued without registration under the Securities Act, in reliance upon the exemption from registration set forth in Rule 506 of Regulation D ("Regulation D") promulgated under the Securities Act. We based such reliance upon representations made by each purchaser of the securities, including, but not limited to, representations as to the purchaser's status as an "accredited investor" (as defined in Rule 501(a) under Regulation D) and the purchaser's investment intent. The securities were not offered or sold by any form of general solicitation or general advertising, as such terms are used in Rule 502 under Regulation D. The securities may not be offered or sold in the United States absent an effective registration statement or an exemption from the registration requirements under applicable federal and state securities laws.

On various dates from January to December 2016 the Company issued 755,000 shares of restricted common stock to investor relations firms for services rendered with a total fair value of $332,696.

On October 28, 2016, an accredited investor (the "*Investor*") purchased from us a promissory note in the aggregate principal amount of up to $2,000,000 (the "*Revolving Note*") due and payable on the earlier of October 28, 2017 (the "*Maturity Date*") or on the seventh business day after the closing of a Qualified Offering (as defined in the Revolving Note). Although the Revolving Note is dated October 26, 2016, the transaction did not close until October 28, 2016, when we received its initial $250,000 advance pursuant to the Revolving Note. As a result, on the same day and pursuant to the Revolving Note, we issued to the Investor a Common Stock Purchase Warrant to purchase 625,000 shares of our common stock at an exercise price per share equal to $0.40 per share. The Investor is obligated to provide us with advances of $250,000 under the Revolving Note, but the Investor shall not be required to advance more than $250,000 in any individual fifteen (15) day period and no more than $500,000 in the thirty (30) day period

immediately following the date of the initial advance. Notwithstanding the fifteen (15) day period limitation, on November 2, 2016, November 23, 2016, December 6, 2016 and December 16, 2016, we received $1,000,000 pursuant to the Revolving Note and we issued to the Investor additional warrants to purchase 2,500,000 shares of our Common Stock. The terms of the Warrants are identical except for the exercise date, issue date, and termination date.

In the event that a Qualified Offering occurs on or prior to the six (6) month anniversary of October 28, 2016, within seven (7) Business Days of the closing of the Qualified Offering, the Company shall pay a cash fee equal to five percent (5%) of the total outstanding amount owed by the Company to the Holder as of the closing date of the Qualified Offering or, at the option of the Company, issue to the Holder a number of restricted shares of the Company's common stock equal to (x) five percent (5%) of the total outstanding amount owed by the Company to the Holder as of the closing date of the Qualified Offering divided by (y) the purchase price provided by the documents governing the Qualified Offering. A Qualified Offering means the completion of a public offering of the Company's securities pursuant to which the Company receives aggregate gross proceeds of at least Seven Million United States Dollars (US$7,000,000) in consideration of the purchase of its securities and resulting in, pursuant to the effectiveness of the registration statement for such offering, the Company's common stock being traded on the NASDAQ Capital Market, NASDAQ Global Select Market or the New York Stock Exchange.

In the event that a Qualified Offering occurs following the six (6) month anniversary of October 28, 2016, but prior to the Maturity Date, within seven(7) Business Days of the closing of the Qualified Offering, the Company shall pay a cash fee equal to five percent (5%) of the total outstanding amount owed by the Company to the Holder as of the closing date of the Qualified Offering or, at the option of the Company, issue to the Holder a number of restricted shares of the Company's common stock equal to (x) five percent (5%) of the total outstanding amount owed by the Company to the Holder as of the closing date of the Qualified Offering divided by (y) the purchase price provided by the documents governing the Qualified Offering.

Interest on the principal balance of the Revolving Note shall be paid in full on the Maturity Date, unless otherwise paid prior to the Maturity Date. Interest shall be assessed as follows: (i) a one-time interest of 10% on all principal amounts advanced prior to April 28, 2017; (ii) the foregoing and 4% on any amount remaining outstanding if the principal amount is repaid between April 28, 2017 and July 28, 2017; or (iii) both of the foregoing and 4% on any amount remaining outstanding if the principal amount is repaid between July 28, 2017 and October 28, 2017.

Broker fees amounting to $116,500, the one-time interest of $125,000 and the fair value of the 3,125,000 warrants issued to the Investor amounting to $479,730 were recorded as debt discounts and amortized over the term of the revolving note. For the year ended December 31, 2016, the Company recognized amortization expense related to the debt discounts indicated above of $84,200. The unamortized debt discounts as of December 31, 2016 related to the convertible debentures amounted to $637,030.

2017

In January 2017, we executed an amendment to the July 1, 2016 convertible note that was due on January 6, 2017. We received an extension of up to three months on the note's due date. In exchange for the extension, we agreed to issue 50,000 shares of restricted common stock and pay the investor $10,000 for each 30-day extension. We made a payment of $34,000 in January 2017 for the first one-month extension and interest on the note from the initial close date through February 6, 2017. On February 28, 2017, the note was paid in full.

On January 17, 2017, we signed a one-year agreement with an investor relations firm. We have the right to terminate the agreement within 10 days of the end of each three-month period. We are committed to pay the IR firm $25,000 for each three-month term, in three equal monthly allotments, should we choose to keep them under contract. We also have awarded the IR firm warrants to purchase the Company's restricted common stock at an exercise price of $0.40/share. The number of warrants and exercise price that we are committed to pay the IR firm for each three-month period, should we choose to keep them under contract, is as follows: Months 1-3: 100,000 warrants at $0.40. Months 4-6: 125,000 warrants at $0.60. Months 7-9: 125,000 warrants at $0.80. Months 10-12: 150,000 warrants at $1.00.

We received $250,000 in January 2017 and $500,000 in February 2017 pursuant to the October Revolving Note and we issued to the Investor additional warrants to purchase 1,875,000 shares of our common stock. The terms of the Warrants are identical except for the exercise date, issue date, and termination date. Interest on the principal balance of the Revolving Note shall be paid in full on the Maturity Date, unless otherwise paid prior to the Maturity Date.

On February 6, 2017, we signed a Merchant Agreement with a lender. Under the agreement we received a loan of $125,000. The Company paid $1,250 in fees in connection with this loan. Under the agreement, $16,180 was used to pay off the prior loan.

On February 15, 2017, we received a six-month, non-convertible loan of $110,000 from each of two accredited investors. We agreed to issue the investors 170,000 shares of restricted common stock. The loans earn no interest but carry a 10% original issue fee.

On March 2, 2017, we signed a Merchant Agreement with a lender. Under the agreement we received a loan of $75,000. The Company paid no fees in connection with this loan.

On March 14, 2017, we received an eight-month, non-convertible loan of $250,000 from a privately-held investment firm. The loan earns an annual interest rate of 10% and includes a 10% original issue discount. We also agreed to issue the investor 250,000 shares of restricted common stock.

On March 16, 2017, we awarded 660,000 incentive stock options to certain employees and 1,855,000 non-qualified stock options to officers, consultants and directors of the Company. Terms of the stock options include the following significant items: (i) $0.28 exercise price, (ii) 10-year life, (iii) 36 month vesting equally per month for employees and

12 month vesting equally per month for directors, (iv) options vest immediately upon change in-control.

On March 21, 2017, we received an eight-month, non-convertible loan of $170,000 from an accredited investor. The loan earns an annual interest rate of 10% and includes a 10% original issue discount. We also agreed to issue the investor 170,000 shares of restricted common stock.

Item 16. Exhibits and Financial Statement Schedules

(a) EXHIBITS

We have filed the exhibits listed on the accompanying Exhibit Index of this registration statement and below in this Item 16:

Exhibit		Incorporated by Reference			Filed or Furnished
Number	**Exhibit Description**	**Form**	**Exhibit**	**Filing Date**	**Herewith**
1.1†	Form of Underwriting Agreement				
3.1	Restated Articles of Organization of the Company.	S-1	3.1	10/8/1996	
3.2	Articles of Amendment to Restated Articles of the Organization of the Company	10-Q	3.1	11/23/2004	
3.3	Articles of Amendment to Restated Articles of the Organization of the Company	8-K	3.1	2/18/2009	
3.4	Articles of Amendment to Restated Articles of the Organization of the Company	8-K	3.1	4/12/2011	
3.5	Articles of Amendment to Restated Articles of the Organization of the Company	8-K	3.1	11/10/2011	
3.6	Articles of Amendment to Restated Articles of the Organization of the Company	8-K	3.1	1/4/2013	
3.7	Articles of Amendment to Restated Articles of the Organization of the Company	8-K	3.1	2/13/2013	
3.8	Articles of Amendment to Restated Articles of the Organization of the Company	8-K	3.1	12/12/2013	
3.9	Articles of Amendment to Restated Articles of the Organization of the Company	8-K	3.1	2/5/2014	
3.10	Articles of Amendment to Restated Articles of the Organization of the Company	8-K	3.1	12/31/2014	
3.11	Articles of Amendment to Restated Articles of the Organization of the Company	8-K	3.1	7/28/2015	
3.12	Amended and Restated By-Laws of the Company	S-1	3.2	10/8/1996	
3.13	Amendment to Amended and Restated By-Laws of the Company	10-K	3.3	3/31/2013	
4.1	Specimen Certificate for Shares of the Company's common stock	10-KSB	4.1	4/22/2005	
4.2	Form of Debenture	8-K	4.1	7/28/2015	
4.3	Form of Warrant	8-K	4.2	7/28/2015	
5.1†	Opinion of Lucosky Brookman, LLP.				
10.1		10-K	10.11	3/27/2008	

	Technology Transfer and Patent Assignment Agreement dated October 7, 1996, between Bioseq, Inc. and BioMolecular Assays, Inc.				
10.2	Amendment to Technology Transfer and Patent Assignment Agreement dated October 8, 1998 between Bioseq, Inc. and BioMolecular Assays, Inc.	10-K	10.12	3/27/2008	
10.3	Nonexclusive License Agreement dated September 30, 1998 between Bioseq, Inc. and BioMolecular Assays, Inc.	10-K	10.13	3/27/2008	
10.4	Subscription Agreement	8-K	10.1	7/28/2015	
10.5	Security Agreement	8-K	10.2	7/28/2015	
10.6	Promissory Note, dated October 26, 2016	8-K	10.1	11/03/2016	
10.7	2005 Equity Incentive Plan.*	S-8	99.1	09/26/2005	
10.8	Amendment No. 1 to 2005 Equity Incentive Plan*	8-K	10.1	09/29/2008	
10.9	Description of Compensation for Certain Directors*	10-K	10.5	03/27/2008	
10.10	Severance Agreement between the registrant and Richard T. Schumacher*	10-K	10.6	03/27/2008	
10.11	Form of Severance Agreement including list of officers to whom provided*	10-K	10.7	03/27/2008	
10.12	2015 Nonqualified Stock Option Plan.*	S-8	4.1	04/24/2015	
10.13	Securities Purchase Agreement	10-Q	10.1	11/14/2016	
21.1	List of subsidiaries				X
23.1	Consent of Independent Registered Public Accounting Firm (Malone Bailey LLP)				X
23.2†	Consent of Lucosky Brookman LLP (reference is made to Exhibit 5.1)				

† To be filed by amendment.

*Management contract or compensatory plan or arrangement.

Item 17. Undertakings

The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement;

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

(2) That for the purpose of determining any liability under the Securities Act of 1933 each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

(5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities:

The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(6) The undersigned Registrant hereby undertakes to provide to the underwriters at the closing specified in the underwriting agreement certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.

(7) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the provisions described in Item 14 above, or otherwise, the Registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

(8) The undersigned Registrant hereby undertakes:

(1) That for purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the Registrant pursuant to Rule 424(b)(1) or (4), or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(2) That for the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and this offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized in the City of South Easton, Massachusetts, on April 11, 2017 .

Pressure BioSciences, Inc.

By: */s/ Richard T. Schumacher*
Name: Richard T. Schumacher
Title: President and Chief Executive Officer (Principal Executive Officer and Principal Accounting and Financial Officer)

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated:

Signature	**Title**	**Date**
/s/ Richard T. Schumacher Richard T. Schumacher	President, Chief Executive Officer, Treasurer, Clerk and Director (Principal Executive Officer and Principal Accounting and Financial Officer),	April 11, 2017
/s/ Joseph L. Damasio Jr. Joseph L. Damasio Jr.	Vice President and Chief Financial Officer (Principal Accounting and Financial Officer),	April 11, 2017
/s/ Jeffrey N. Peterson Jeffrey N. Peterson	Chairman of the Board of Directors	April 11, 2017
/s/ Mickey Urdea Mickey Urdea, Ph.D.	Director	April 11, 2017
/s/ Vito Mangiardi Vito Mangiardi	Director	April 11, 2017
/s/ Kevin A. Pollack Kevin A. Pollack	Director	April 11, 2017

91