

## Research Update

*Investors should consider this report as only a single factor in making their investment decision.*

### Pressure BioSciences, Inc.

**Rating: Speculative Buy**

Juan Noble

**PBIO \$1.42 — (NasdaqCM)**

August 18, 2010

	2008A	2009A	2010E	2011E
Total revenues (millions)	\$0.9	\$1.2	\$1.5	\$1.7
Earnings (loss) per share	(\$2.24)	(\$1.42)*	(\$1.55)	(\$1.37)
52 - Week range	\$1.97 - \$1.02	Fiscal year ends:	December	
Shares outstanding as of June 30, 2010	2.6 million	Revenue/share (ttm)	\$0.52	
Approximate Float	2.1 million	Price/Sales (ttm)	4.0X	
Market Capitalization	\$3.7 million	Price/Sales (2011)E	2.8X	
Tangible Book value/share	\$1.08	Price/Earnings (ttm)	NM	
Price/Book	1.3X	Price/Earnings (2011)E	NM	

\* Reflects tax refund of \$623,000.

Pressure BioSciences, Inc. (Nasdaq: PBIO), headquartered in South Easton, MA, has developed Pressure Cycling Technology (PCT), which uses cycles of hydrostatic pressure to control biomolecular interactions. This technology can be applied in genomic and proteomic sample preparation, pathogen inactivation, control of enzymes, immunodiagnostics and protein purification.

#### Key Investment Considerations:

*We are reiterating our investment rating of Speculative Buy on Pressure BioSciences (NasdaqCM: PBIO) and maintaining a 12-month price target of \$2.30 per share.*

*PCT, a novel technology, has broad applications in genomics, proteomics and nucleic acid testing. An estimated 45,000 laboratories worldwide represent a significant long-term market opportunity for PCT. There are now 115 Barocycler systems in service, including 22 that were installed in 2Q10. The installed base of Barocyclers generated \$60,000 in consumables revenue in 1H10, up 45% from 1H09.*

*In 2Q10 (results released August 16, 2010) the company incurred a loss to common shareholders of \$924,000, or (\$0.35) per share, on revenue of \$402,000. We projected a loss of (\$0.37) per share on revenue of \$351,000. In 2Q09, the company incurred a loss of (\$0.39) per on revenue of \$270,000.*

*To reflect 2Q results and sustained grant revenue beyond 3Q10 we now project a 2010 loss to common shareholders of (\$1.55) per share on revenue of \$1.5 million. Earlier, we projected a (\$1.62) loss to common shareholders on revenue of \$1.7 million.*

*We have also added grant revenue to our 2011 forecast and now project a loss of (\$1.37) per share on revenue of \$1.7 million. We previously projected a 2011 loss of (\$1.52) on revenue of \$1.1 million.*

*Since last year, quarterly cash burn has ranged between \$600,000 and \$750,000, considerably lower than the \$1 million seen in 2008. Since 2009, the company has raised \$3.1 million in proceeds from preferred stock issues, \$2.7 million from the exercise of warrants, and a \$623,000 tax refund. These proceeds should cover cash burn through 1Q11, at which time we project a need for additional financing.*

**See disclosures on pages 14 - 16**

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### ***Investment Recommendation***

**We are reiterating our investment rating of Speculative Buy on Pressure BioSciences (Nasdaq: PBIO) and maintaining our 12-month price target of \$2.30 per share. The stock, in our view, is suitable mainly for risk-tolerant investors.**

Marketing hurdles could be high and achieving substantive market penetration could be a multi-year process. In our view, operations may not turn profitable for at least another three years, but investors could bid the stock up on indications of sales growth acceleration. Revenue is rising steadily, albeit off a small base, but is still limited relative to cost structure despite cost cutting measures undertaken since 2008. Those cost reductions curtailed sales efforts, which must be restored to enable the company to pursue an increasing number of sales leads.

Data from Capital IQ on 64 stocks of scientific and technical instrument producers with a market capitalization of \$100 million or less show an arithmetic mean (after eliminating extremes) of 2.2X (trailing) price to sales multiple. At present, PBIO is trading at 4.1X trailing (four quarters) product revenue per share and 2.9X projected 2011 product revenue per share. Three months ago, the sector was trading at 2.4X revenue per share and PBIO was valued at 4.8X trailing product revenue and 3.2X estimated 2011 product revenue per share.

Based on an increase in PCT systems installation in the year ahead, higher utilization of PCT systems in service and the outlook for further market penetration, we believe that within the next 12 months, investors will accord the stock a valuation of 6X 2011 product revenue per share of \$0.50, a value we have discounted by 25% to account for acceptance, competitive and technological risk. Our target of \$2.30 implies year-ahead stock price appreciation potential of almost 60%.

### ***Overview***

Pressure BioSciences (Nasdaq: PBIO), headquartered in South Easton, MA, was formed as Boston Biomedica in 1978 by CEO Richard T. Schumacher and became a public company in 1996. In 2004, management decided to focus on pressure cycling technology (PCT), which was launched in 2002, and sold all of its other operations, which included quality control products used to monitor and measure performance of infectious disease test kits, and R&D support services for life sciences laboratory functions.

The company's patented pressure cycling technology (PCT) is embodied in the Barocycler NEP3229, which was introduced in 3Q05, and the smaller, more compact NEP2320, released in 2Q07. PCT has a broad range of potential applications in the laboratory, including protein purification, control of chemical reactions, immunodiagnosics, DNA sequencing, pathogen inactivation and food safety. Since 2007, the company has commercialized several kits that significantly extend the utility of the Barocycler.

There are now 115 Barocycler systems (excluding demonstration units) in service at a number of large research institutions, including Amgen, Novartis, Harvard University, New York University, the US Army, the National Institutes of Health, the Food and Drug Administration, the Centers for Disease Control and the US Department of Agriculture.

While product revenue has grown, it is still light relative to the company's cost structure. At the pace of growth we forecast, the company is likely, despite substantial cost reduction measures undertaken since mid 2008, to sustain losses during the next few years.

We project revenue gains but continuing operating losses for 2010 and 2011. Since 2009, cash has been replenished with \$3.1 million in proceeds from three convertible preferred stock sales, \$623,000 in proceeds from an income tax refund, and \$2.7 million in proceeds from the exercise of warrants. Cash should support operations through 1Q11, at which time the company is likely to need additional financing which we have modeled as \$4.5 million from the issuance of more convertible preferred stock.

**Strategy**

As recurring revenue generated by consumables used by instruments in service is essential to sales gains, efforts to increase the number of Barocyclers in the field through scientific presentations and sales calls are ongoing. Prospective customers are offered the opportunity to lease or rent the instruments, and in some cases are engaged in short-term reagent rental agreements. Under a reagent rental agreement the customer is provided with a Barocycler instrument in exchange for a minimum purchase commitment of consumable products.

To increase the scientific community's acceptance of PCT, the company offer lease/rental programs that can build experience with the technology and generate sales of higher margin consumables. However, there is renewed emphasis on instrumentation sales as they yield much higher revenue in the near term. As overseas sales entail significant dealer discounts, there has been greater emphasis on US distribution aimed at strengthening near term revenue gains and gross margins.

Pressure Biosciences' R&D and commercialization is focused on sample preparation for genomic, proteomic, and small molecule studies. This market for the company's technology consists of academic and government research institutions, biotechnology and pharmaceutical companies, and other public and private laboratories that are engaged in studying genomic, proteomic and small molecule material within plant and animal cells and tissues.

The company targets research laboratories in these sectors because they comprise a fast growing market with an unmet need for more effective technology. Management believes that sample preparation is the least technically challenging application for the development of its products and is compatible with its technical core competency. The company has a strong intellectual property portfolio in this area.

**Second Quarter and Six Months Results - 2010**

**Operations** In 2Q10, the company incurred a loss to common shareholders of \$924,000, or (\$0.35) per share, on revenue of \$402,000. We projected a loss to common shareholders of (\$0.37) per share on revenue of \$351,000. In the year-earlier quarter, the company incurred a loss to common shareholders of (\$0.39) per share on revenue of \$270,000.

Revenue for 2Q10 was up sharply due to a richer mix of product sales (Barocyclers, consumables, parts and service). Twelve Barocyclers were installed during the quarter, the same number as in 2Q09 but eight of the 2Q10 installations were equipment sales (vs. rentals/leases), up from only six in the year-earlier quarter. Rental/lease rates were raised in 2010. All 2Q10 installations were in the US. In 2Q09, nine installations were in the US and three were overseas. Grant revenue was up 7%

	Quarter ended Jun 30		% +/- '10 vs. '09	Six months ended Jun 30		
	2010A	2009A		2010	2009	Δ '10 v. '09
Revenue -PCT pdts, svcs	283	159	78%	473	381	24%
Grants	119	111	7%	220	196	13%
Total revenue	402	270	49%	693	577	20%
Cost of pdts & svcs	127	91	40%	214	231	(7%)
Gross profit (loss)	275	180	53%	479	346	38%
Operating expenses						
R&D	304	315	(3%)	598	622	(4%)
S&M	294	252	17%	577	531	9%
G&A	474	427	11%	1,013	858	18%
Total	1,073	995	8%	2,188	2,011	9%
Operating income (loss)	(798)	(815)	(2%)	(1,709)	(1,665)	3%
Interest income	1	1	(21%)	1	4	(70%)
Pre-tax loss	(797)	(814)	NM	(1,708)	(1,662)	3%
Income tax benefit (prov)			NM		623	NM
Net income	(797)	(814)	(2%)	(1,708)	(1,038)	65%
Accrued preferred dividend	(128)	(34)	277%	(384)	(524)	NM
Net loss to common shareholders	(924)	(848)	NM	(2,092)	(1,562)	34%
Earnings (loss) per share:						
Avg. shares out (mil) - diluted	(0.35)	(0.39)	(8%)	(0.80)	(0.71)	12%
	2,621	2,200		2,616	2,195	
Margin analysis						
Gross margin (product sales)	55%	43%		55%	39%	
R&D	107%	198%		127%	163%	
S&M	104%	159%		122%	139%	
G&A	167%	268%		214%	225%	

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to \$102,000. 2H revenue gains might have been higher were it not for two severe snowstorms that hampered sales efforts in the Northeast early in 2010.

The gross margin on product sales widened to 55% from 37% due to decrease in the number of Barocyclers sold to overseas distributors at discounted prices. In 2Q10, all Barocyclers were installed in the US; in the year-earlier quarter, three were installed overseas.

Operating expenses increased 8% to \$1.1 million due to increases in sales/marketing and G&A expenses. Sales/marketing expenses increased by \$42,000 due to sales recruitment and compensation for a new sales director. G&A expenses increased by almost \$50,000 due to increased spending on investor relations and patent-related activity. These increases were offset in part by an \$11,000 reduction in R&D project spending.

Due to increased leveraging of manufacturing costs and operating expenses, the operating (and pre-tax) loss narrowed to \$797,000 from \$814,000. Accrued preferred dividends of \$128,000, around four times the dividends in the year-earlier quarter, brought the 2Q10 loss to common shareholders of \$924,000, up from \$848,000 in 2Q09.

For the first half of 2010, Pressure BioSciences incurred a loss to common shareholders of \$2.1 million, or (\$0.80) per share, on revenue of \$693,000. In 1H09, the company incurred a loss to common shareholders of \$1.6 million, or (\$0.71) per share, on revenue of \$577,000.

Revenue for 1H10 was up 24%. The number of Barocyclers installed for both 1H10 and the year-earlier period was 22. In 1H10, all installations were in the US; in the year-earlier period, there were six overseas Barocycler installations, sales made through distributors at discounted prices. Reduced discounts are reflected in a significantly wider gross margin for 1H10.

Operating expenses for the first six months of 2010 were up 9% to \$2.2 million, led by an 18% increase in G&A expenses to \$1 million. Sales/marketing expenses increased 9% to \$577,000. R&D was down 4% to \$598,000. Changes in expenses for 1H10 were driven by the same factors that influenced 2Q10.

Due to the increase in operating expenses, the operating loss for 1H10 widened slightly to \$1.7 million. The loss for the period increased to \$2.9 million from \$1.6 million as 1H09 losses were offset in part by a \$623,000 tax refund.

*Finances* In 2Q10, the company burned cash of \$687,000, down from \$758,000 in the prior quarter. Working capital increased by \$465,000 due to increases in receivables and inventory, and a \$248,000 investment in short term securities. Proceeds of \$1.2 million from warrant exercises covered cash of \$1.8 million used in operations and \$50,000 in capital expenditures, increasing cash by \$60,000 to \$1.7 million at the end of the quarter.

For the first half of 2010, the company burned \$1.4 million in cash, up from cash burn of \$669,000 in 1H09. Cash burn for the year-earlier period was reduced by a \$623,000 cash refund. For the six months through June 2010, working capital increased by \$326,000 due to increases in inventory and a \$248,000 investment in short term securities, partly offset by an increase in payables. Proceeds of \$1.9 million from the issuance of preferred shares and the exercise of warrants covered cash of \$1.8 million used in operations and \$50,000 in capital expenditures, increasing cash by \$68,000 to \$1.7 million as of June 2010.

## **Projections**

*Operating Performance* For 2010, we project a loss to common shareholders of \$3.85 million, or (\$1.55) per share, on revenue of \$1.5 million. We previously projected a loss to common shareholders of \$3.94 million, or (\$1.62) per share, on revenue of \$1.35 million.

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Our 2010 revenue estimate is based on the installation of 58 Barocyclers, average consumables revenue of \$1,100 per Barocycler in service (up from an estimated \$960 in 2009) and \$420,000 in revenue from grants. The company announced a new grant received in March 2010. Additional grants would lend upside to our revenue and gross profit projections.

We project an increase in the gross margin on product sales to 55% from 52% due to higher 2010 Barocycler rental/lease fees, increased sales of consumables and favorable comparisons with year-earlier quarters in which more Barocyclers were installed at discounted dealer prices. Our product sales gross margin projections for 2010 are based on full manufacturing costs that are not offset by the sale of previously expensed systems.

We project a 6% rise in operating expenses to \$4.3 million. Tight expense controls implemented in the aftermath of a sweeping 2008 cost reduction effort should remain in force. We anticipate nominal increases in most expense lines, with increases in sales and marketing outpacing other expenses as the company steadily strengthens its sales efforts, in part through the hiring of additional sales personnel, through 2011.

Due to higher operating expenses and unfavorable comparisons with the tax refund-supported results for the prior year, the operating loss for 2010 will widen to \$3.4 million from \$3.2 million. Preferred dividends, including those on a projected \$4.5 million 3Q10 convertible preferred issue, will widen the loss to common shareholders to \$3.85 million from \$3.25 million.

For 2011, we project a loss to common shareholders of \$3.6 million, or (\$1.37) per share, on revenue of \$1.7 million. We previously projected a loss of (\$1.52) on revenue of \$1.31 million. Our 2011 revenue forecast was increased to reflect additional grant revenue. Our 2011 product sales forecast is based on the installation of 66 more Barocyclers and an increase in average consumables revenue per Barocycler to \$1,230 from \$1,100. Our revenue projection includes \$440,000 in grant revenue, more of which would lend upside to our revenue and gross profit estimates. The gross margin (on product sales) should remain unchanged at 55%. While the company may have flexibility in pricing its Barocyclers or consumables, our forecast is based on largely flat prices, as we believe the company will maintain in an ongoing effort to drive installations.

Operating expenses are projected to increase by 1.5% to \$4.3 million, again led by a rise in sales and marketing expenses. Due to the increase in revenue and gross profit, the operating loss for 2011 should narrow to \$3.2 million from \$3.27 million. The reduced operating loss will decrease the loss to common shareholders slightly to \$3.6 million from \$3.85 million.

*Financial* 2010 operations will burn an estimated \$2.8 million in cash, up from \$1.9 million in 2009, offset slightly by a nominal reduction in working capital. Proceeds of \$1.9 million from the exercise of warrants and the issuance of preferred shares will partially cover \$2.8 million in cash used in operations and \$150,000 in capital expenditures, so cash will drop by \$1.1 million to \$538,000 at the end of the year.

In 2011, the company will burn an estimated \$3 million in cash and lay out an estimated \$160,000 in capital expenditures. By our projections, the company will have to raise \$5 million in financing (which we project as a preferred stock issue) to cover its requirements into 2012. With those proceeds, cash should increase by \$1.7 million to \$2.3 million at the end of 2011.

## **Technology**

The company's core technology is pressure cycling technology, which offers utility in a broad range of applications – genomic and proteomic sample preparation, inactivation of pathogens, control of enzymes, immunodiagnosics, protein purification and food safety. Barocyclers subject samples to cycles of pressure from ambient to ultra-high levels and then back to ambient, in a precisely controlled manner. The Barocycler NEP3229 and Barocycler NEP2320 use cycles of high hydrostatic pressure, rapidly and efficiently breaking up the cellular structures of a specimen to release nucleic acids, proteins, lipids and small molecules into PULSE

Tubes. During the past several years, the company has spent approximately \$20 million developing PCT, installing more than 100 PCT systems in a number of well regarded academic, government, and commercial sites throughout the US. The company has established proof of principle, built an intellectual property portfolio and developed equipment for PCT's initial application, a sample preparation system.

In June, 2007, the company developed a novel method for the safe, rapid, efficient, and reproducible extraction of proteins from lipid-rich samples, including adipose (fatty, loose connective tissue) and other neurological (including brain) tissues, organelles (DNA-containing cell structures), and membrane preparations. This method, which combines the use of the company's pressure cycling technology (PCT) with certain organic solvents, enables protein extraction from lipid-rich samples without the use of detergents that can compromise the results of subsequent analyses of these samples. Proteins can be exceedingly difficult to extract from such samples using conventional sample preparation methods, which can fail to extract types of proteins that may be biomarkers that can potentially confirm the presence of diseases or the response of the body to pharmaceuticals.

Several other instruments and kits (see Products) have been launched, significantly extending the utility of the Barocycler.

## ***Products***

The company's principal PCT instrument is the Barocycler®. It utilizes several consumables, including PULSE (Pressure Used to Lyse Samples for Extraction) Tubes and application specific kits (consumable products + reagents). Together, the Barocycler instruments, the consumable PULSE Tubes, and the PCT-dependent kits make up the PCT Sample Preparation System. Principal products are the following:

### ***Barocycler Instrumentation***

Barocyclers are designed to fit on a laboratory bench top, inside a biological safety cabinet, or on the shelf of a laboratory cold room. The microprocessor is capable of saving up to 99 specific PCT protocols, so researchers can achieve maximum reproducibility for the extraction of nucleic acids, proteins, lipids, or small molecules from various biological samples. Barocyclers, together with consumable products described below, make up the current PCT Sample Preparation System (PCT SPS).



Barocycler NEP3229 – The Barocycler NEP3229 contains two units, an upper, user interface and a lower, 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 single-use PULSE Tubes.

Barocycler NEP2320 – The Barocycler NEP2320 is a smaller and more compact version of the NEP3229 unit. It weighs approximately 75 pounds, processes one sample at a time, and works on compressed air (pneumatic) and not hydraulics like the larger NEP3229 unit. Because this instrument is pneumatic, the NEP2320 can be easily attached by an air hose to a typical 85 psi air compressor, to consumer-sold portable compressors, or bottled gas, making it very portable. This instrument is currently being used by sales representatives as a demonstration instrument and is being marketed as an alternative to the Barocycler NEP3229 as part of the PCT Sample Preparation System.

PCT Shredder – The PCT Shredder (patent-pending) is designed to help research scientists safely, rapidly, and conveniently disrupt very tough samples - such as ticks, muscle, and seeds, that require homogenization prior to PCT or other sample preparation methods. The PCT Shredder uses a similar PULSE Tube as the PCT Sample

Preparation System, and allows scientists to homogenize tough samples prior to extraction without the need to transfer the sample into a second processing container between steps.

### ***Consumable Products***

**PULSE Tubes (FT500)** – The FT500 PULSE Tube is a plastic, single-use, processing container with two chambers separated by a small disk with about sixty small holes. This small disk is referred to as a Lysis Disk. PULSE Tubes transmit the power of PCT from the Barocycler instrument to the sample. In sample extraction, the specimen is placed on the Lysis Disk, buffers are added to the PULSE tube, the PULSE Tube is capped and placed in the pressure chamber of the Barocycler instrument, pressure chamber fluid is added, and pressurization begins. As pressure increases, a small moveable piston (the Ram) pushes the specimen from the top (sample) chamber, through the Lysis Disk and into the bottom (fluid retention) chamber. When pressure is released, the sample (now partially homogenized) is pulled back through the Lysis Disk by the receding Ram. The combination of physical passage through the Lysis Disk, rapid pressure changes, and other biophysical mechanisms related to cycled pressure break up the cellular structures of the specimen to quickly and efficiently release nucleic acids, proteins, lipids, and small molecules.



The PCT Shredder Driver & Holder



The Shredder PULSE Tube

**Non-Disk PULSE Tubes (FT500-ND)** – The FT500-ND PULSE Tube is a specially-designed, plastic, single-use, processing container with one chamber separated by a small disk with about sixty small holes. The FT500-ND is similar to the FT500 in look and feel, except there is no Lysis Disk separating the body of the processing container into two chambers, as in the FT500. The design change was based on strong market demand for a new PCT consumable for the rapid and reproducible processing of solutions and suspensions that do not require partial homogenization by passage through a Lysis Disk, and for a consumable that could accept smaller sample volumes. The FT500-ND offers variable sample volumes.

**PCT MicroTube Adapter Kit** PCT MicroTube System contains the adapters and modules that allow the current NEP3229 and NEP2320 to accept the newer MicroTubes. Micro tubes are for sample volumes ranging from 50 to 150 microliters, much smaller than the original pulse tubes, which, at volume capacities of 1.0 to 1.5 milliliters, are too large for the needs of many laboratories that work with small samples. MicroTubes are made from highly inert, non-wetting plastic. The company has developed adapters that enable the NEP3229 and NEP2320 to accommodate the smaller diameter micro tubes. Adapter kits include cassettes that enable the Barocyclers (even the NEP2320) to process multiple samples simultaneously – up to 48 for the NEP3229.



**ProteoSolve – CE** – (**ProteoSolve** for **C**onventional **E**xtraction) in NATIVE and STRINGENT versions are PCT-dependent kits for the extraction of proteins from a variety of samples using an optimized detergent-based reagent system compatible with two-dimensional electrophoresis or two-dimensional chromatographic separation for proteomic analysis. The kit contains all of the reagents and instructions necessary for the extraction of either denatured or non-denatured proteins, which can then be used for the analysis of protein structure and function.

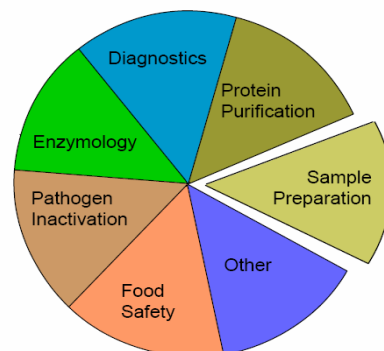
### ***Market Opportunity***

According to market research firm Strategic Directions International (SDI), the worldwide market for analytical instrumentation grew from \$26 billion in 2002 to more than \$36 billion in 2007. SDI expects that market to expand to \$42 billion by 2010. The top 50 companies in the field accounted for more than \$27 billion in sales for 2007, more than 75% of the entire market. This market is characterized by Laboratory Equipment World as a monopolistic market, new entrants to which are barred by high start-up costs and technological hurdles. While

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monopolistic, the battle for market share has intensified, restricting pricing flexibility as products have become increasingly integrated. Growth strategies tend to be based on the development of more sensitive instruments, particularly those that can gain acceptance in the biotechnology and pharmaceutical industries. This in turn drives increases in R&D spending. Companies in this industry tend to use direct selling.

A sliver of the market targeted by Pressure BioSciences is the proteomics sample preparation market, which for the US (2007) was estimated by Genetic Engineering & Biotechnology News at \$59 million, with the potential to expand to \$103 million by 2011. The broader proteomics market was estimated by Frost and Sullivan at \$3 billion in 2008.



Qiagen NV (Netherlands), a major producer that serves the market for nucleic acid and protein separation and purification, states that the market consists of 45,000 academic institutions, diagnostics companies, pharmaceutical companies and government institutions. The leading academic institutions are estimated to employ 400,000 researchers.

Genomics is the study of an organism’s hereditary information as encoded in its DNA. Proteomics is the study of the structures and functions of proteins, which play a key role in the function of an organism. The discovery and analysis of all proteins in a cell is essential to the identification of protein characteristics identified with specific diseases. Due to its potential in healthcare, proteomics has become an increasingly important field in biomedical and drug development research. Its use is accelerating as pressure increases to develop more efficacious drugs in less time.

The first, and arguably the most important, step in proteomics is protein extraction, the disaggregating of a complex mixture so that released proteins can be analyzed with other analytical tools. As it exhibits greater efficiency in terms of rupturing cells and releasing more proteins than other separation or sample preparation methods, PCT could enhance the extraction process significantly and, by releasing more proteins, provide researchers with more insight into their functions. Sample preparation represents the company’s initial target market. There is, however, a much broader market, illustrated in the accompanying chart, for which PCT applications will be developed over the long term.

The estimated 7,500 life sciences labs in the US that use mass spectrometry for biological analyses primarily use sample sizes that are far smaller than the sizes required for the current FT500ND PULSE Tubes. The company’s new MicroTubes that are part of the PCT MicroTube System have been engineered for compatibility with the mass spectrometry laboratory’s typical sample size.

### Competition

Many companies in the laboratory analytical instrumentation industry produce sample preparation equipment and supplies but do not currently offer technology that is effective as, or competitive with, PCT. Many, however, produce equipment for processes that PCT aims to displace.

Key Attributes		Incumbent Technologies					PCT
		Sonication	Bead Beating	Tissue Homogenizer	Mortar Pestle	French Press	
Safety	Closed System	-	+	-	-	-	+
	Storage, Transport	-	+	-	-	-	+
Versatility		-	-	-	-	-	+
Reproducibility		-	-	-	-	-	+
Efficiency		-	-/+	-	-	-	+
Shearing Molecules		Yes	Yes	Yes	Min	Yes	Min

Source: Pressure BioSciences

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The largest companies that offer laboratory analytical technologies and supplies include Qiagen NV (Netherlands), Sigma-Aldrich Corp., Roche Diagnostics (Switzerland), Machery-Nagel GmbH (Germany) and Thermo Fisher Scientific. Smaller competitors include Brinkmann Instruments, Labcaire Systems (division of Misonix), BioSpec Products, TomTec, and Worthington BioChemical.

### ***Risks***

In our view, these are the principal risks underlying the stock:

*Acceptance* While PCT shows promise as a superior method of sample preparation, its commercial success hinges on its ability to displace sample preparation methods that are well entrenched. If the company's success in penetrating the mass spectrometry market, a key strategic objective, is limited, growth prospects over the next three years could suffer.

*Competition* Potential competitors include firms, such as those listed in our discussion of competitors, that are substantially larger and have the advantage of extensive distribution capability and product line breadth that might make them more attractive to larger laboratories.

*Intervening Technology* PCT is in a relatively early commercialization phase. Sales of the Barocycler should continue to ramp as the company's broadens its commercialization efforts. But some sales could reflect "trialing" of PCT technology, a tentative acceptance that could wither if new, more attractive technologies are introduced.

*Single Product Source* Only one contract manufacturer produces the company's PCT instruments, heightening the risk of disrupted supply.

*Continuing losses* At the level of revenue and costs we have projected, the company will continue to sustain losses past 2011. While the company's auditors have not qualified their opinion with any cautionary "going concern" statements, this may become an issue if profitability does not show substantive improvement during the next two years or so.

*Dilution* As of December 31, 2009, there were exercisable stock options and warrants covering 5.1 million shares. If all of the shares of Series A and B preferred (each convertible into 10 common shares) were converted, an additional 6.5 million common shares would be issued and outstanding. The issuance of more convertible preferred shares in a projected convertible offering in 3Q10 would further dilute future earnings. Under the terms of the Series B convertible preferred share offering, holders are entitled to a cumulative 5% cash dividend payable semi-annually on June 30 and December 31. Payment of dividends in cash (instead of converting to common shares) would exacerbate the company's cash flow problems.

*Insider Control* The proxy statement of April 28, 2010 showed that as of that date, officers and directors as a group beneficially owned 41.1% of the company's shares (the CEO owns 22.2%), a degree of control that, while suggesting a strong commitment to the company's success, may also suggest an unduly strong influence on management decision making.

*Microcap Concerns* Shares of PBIO have risks common to the stocks of other microcap (which we define as market capitalizations of \$250 mil or less) companies. These risks often underlie stock price discounts from the valuations of larger-capitalization stocks. Liquidity risk, typically caused by small trading floats and very low trading volume, can lead to large spreads and high volatility in stock price. The company has 2.1 million shares in the float. On average, approximately 5,800 shares are traded daily.

*Miscellaneous Risks* The company's financial results and equity values are subject to other risks and uncertainties known and unknown, including but not limited to competition, operations, financial markets, regulatory risk, and/or other events. These risks may cause actual results to differ from expected results.

Pressure BioSciences

Annual Income Statements  
(\$ Thousands)  
2007 – 2011E

Year ending December 31:	2007A	2008A	2009A	2010E	2011E
Revenue					
PCT pdts, svcs	400	655	832	1,083	1,324
Grants	246	197	413	420	400
Total	646	852	1,245	1,503	1,724
Cost of pdts & svcs	209	401	402	489	596
Gross profit	437	451	843	1,015	1,128
Operating expenses					
R&D	2,023	1,811	1,175	1,198	1,255
S&M	1,387	1,687	1,055	1,147	1,200
G&A	2,175	1,920	1,809	1,938	1,875
Total	5,584	5,418	4,039	4,283	4,330
Operating income (loss)	(5,147)	(4,966)	(3,197)	(3,268)	(3,202)
Other income (exp)					
Realized gain - securities	2,029				
Interest income	287	58	5	2	3
Total	2,315	58	5	2	3
Pre-tax income - continuing opns	(2,832)	(4,908)	(3,192)	(3,267)	(3,199)
Income tax benefit (provision)	520		623		
Income - continuing opns	(2,312)	(4,908)	(2,568)	(3,267)	(3,199)
Income from discontinued opns					
Gain on sales of net assets	1,156				
Net-discontinued opns	1,156				
Net loss	(1,156)	(4,908)	(2,568)	(3,267)	(3,199)
Accrued preferred dividend			(716)	(584)	(400)
Net loss to common shareholders			(3,285)	(3,851)	(3,599)
Earnings per share:					
Continuing operations	(1.11)				
Discontinued operations	0.55				
Total	(0.56)	(2.24)	(1.42)	(1.55)	(1.37)
Avg shares outstanding (diluted)	2,079	2,194	2,314	2,491	2,625

Source: Company reports and Taglich Brothers estimates

Quarterly Income Statements  
(\$ Thousands)  
2009 - 2011E

	3-09A	6-09A	9-09A	12-09A	2009A	3-10A	6-10A	9-10E	12-10E	2010E	3-11E	6-11E	9-11E	12-11E	2011E
Revenue -PCT pdts, svcs	222	159	205	246	832	189	283	318	292	1,083	281	352	326	365	1,324
Grants	85	111	113	105	413	102	119	100	100	420	100	100	100	100	400
Total revenue	307	270	317	350	1,245	291	402	418	392	1,503	381	452	426	465	1,724
Cost of pdts & svcs	140	91	74	97	402	87	127	143	132	489	126	158	147	164	596
Gross profit (loss)	167	180	243	253	843	204	275	275	261	1,015	255	293	279	301	1,128
Operating expenses															
R&D	307	315	273	280	1,175	294	304	300	300	1,198	310	315	310	320	1,255
S&M	278	252	254	270	1,055	283	294	285	285	1,147	290	300	310	300	1,200
G&A	431	427	470	481	1,809	538	474	450	475	1,938	450	475	450	500	1,875
Total	1,016	995	998	1,030	4,039	1,115	1,073	1,035	1,060	4,283	1,050	1,090	1,070	1,120	4,330
Operating income (loss)	(850)	(815)	(754)	(777)	(3,197)	(911)	(798)	(760)	(799)	(3,268)	(795)	(797)	(791)	(819)	(3,202)
Interest income	2	1	1	1	5	0	1	0	0	2	1	1	1	1	3
Pre-tax income	(848)	(814)	(753)	(777)	(3,192)	(911)	(797)	(760)	(799)	(3,267)	(795)	(796)	(790)	(819)	(3,199)
Income tax benefit (prov)	623				623										
Net loss	(224)	(814)	(753)	(777)	(2,568)	(911)	(797)	(760)	(799)	(3,267)	(795)	(796)	(790)	(819)	(3,199)
Accrued preferred dividend	(501)	(34)	(23)	(159)	(716)	(257)	(128)	(100)	(100)	(584)	(100)	(100)	(100)	(100)	(400)
Net loss to common shareholders	(726)	(848)	(776)	(935)	(3,285)	(1,168)	(924)	(860)	(899)	(3,851)	(895)	(896)	(890)	(919)	(3,599)
Loss per share:	(0.33)	(0.39)	(0.35)	(0.35)	(1.42)	(0.49)	(0.35)	(0.35)	(0.36)	(1.55)	(0.35)	(0.34)	(0.34)	(0.34)	(1.37)
Avg. shares out (mil) - diluted	2,195	2,200	2,195	2,667	2,314	2,394	2,621	2,450	2,500	2,491	2,550	2,600	2,650	2,700	2,625
Margin analysis															
Gross margin (product sales)	37%	43%	64%	60%	52%	54%	55%	55%	55%	55%	55%	55%	55%	55%	55%
R&D	138%	198%	134%	114%	141%	156%	107%	94%	103%	111%	110%	90%	95%	88%	95%
S&M	125%	159%	124%	110%	127%	149%	104%	90%	97%	106%	103%	85%	95%	82%	91%
G&A	194%	268%	230%	196%	218%	285%	167%	141%	162%	179%	160%	135%	138%	137%	142%

Source: Company reports and Taglich Brothers estimates

Pressure BioSciences

Balance Sheets  
(\$ Thousands)  
2007 – 2011E

	2007A	2008A	2009A	2Q10A	2010E	2011E
<b>ASSETS</b>						
Current assets						
Cash + equivalents	5,424	868	1,610	1,677	670	2,308
Restricted cash		50	20	20	20	20
Short term investments				248	248	
Accts rec	118	209	203	275	211	257
Inventory	173	572	638	830	698	851
Deposits	553		182	189	22	26
Prepaid income taxes	57	382	3	1	5	7
Income tax rec	250	7				
Prepayments	95	235	87	71	87	106
Total current assets	6,670	2,323	2,743	3,312	1,961	3,575
Fixed assets	258	252	249	222	276	354
Intangibles - net	328	280	231	207	182	134
Transferred assets						
Total assets	7,256	2,855	3,224	3,742	2,419	4,063
<b>LIABILITIES/ SHAREHOLDERS' EQUITY</b>						
Current liabilities						
Accts pay	153	263	148	356	312	381
Accruals	564	440	378	308	433	530
Income taxes payable	5				11	13
Deferred revenue	15	17	8	20	217	265
Total current liabilities	736	721	534	683	973	1,188
Deferred revenue	7	11	2	12	5	7
Shareholders' equity	6,513	2,124	2,688	3,047	1,441	2,868
Total liabilities/shareholders' equity	7,256	2,855	3,224	3,742	2,419	4,063

Source: Company reports and Taglich Brothers estimates

Pressure BioSciences

Cash Flow Statements  
(\$ Thousands)  
2007 – 2011E

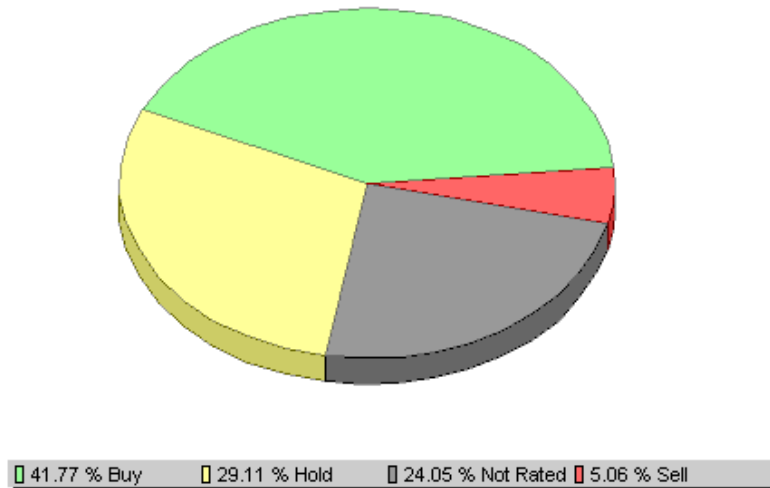
Year ending December 31:	2007A	2008A	2009A	2Q10A	2010E	2011E
	(quarter only)					
Cash from operating activities						
Income - continuing opns	(2,311)	(4,908)	(2,568)	(797)	(3,267)	(3,199)
Adjustments:						
Depreciation/amortization	179	200	204	50	161	131
Stock based comp	367	509	429	50	355	420
Bad debt expense			54	10	18	
Realized gain - marketable sec	(2,029)					
Interest rec'd on loan to CEO						
Changes in assets/liabilities	(103)	(221)	72	(465)	283	(54)
Net used for operating activities	(3,896)	(4,420)	(1,809)	(1,152)	(2,450)	(2,703)
Cash from investing activities						
Capital expenditures	(181)	(146)	(153)	(18)	(129)	(160)
Proceeds - sale of mkt sec	2,033					
Net cash from investing	1,852	(146)	(153)	(18)	(129)	(160)
Cash from financing activities						
Issuance of common stock	571	10				
Issuance of preferred stock			2,654		466	4,500
Proceeds - exercise of warrants			50	1,230	1,421	
Net used in financing activities	571	10	2,704	1,230	1,887	4,500
Cash from discontinued opns						
Operating cash flows	(218)					
Investing cash flows	1,780					
Net from discontinued opns	1,562					
Increase (decrease) in cash	90	(4,556)	742	60	(691)	1,637
Cash - beginning	5,335	5,425	868	1,618	1,610	670
Cash - ending	5,425	868	1,610	1,677	918	2,308

Source: Company reports and Taglich Brothers estimates

**Price Chart**



**Taglich Brothers Current Ratings Distribution**



**Investment Banking Services for Companies Covered in the Past 12 Months**

Rating	#	%
Buy	2	8.0
Hold		
Sell	1	100.0
Not Rated		

### **Important Disclosures**

As of the date of this report, the following employees of Taglich Brothers, Inc. owned or controlled common shares in Pressure Biosciences, Inc.: Robert Schroeder (2,648 shares). All research issued by Taglich Brothers, Inc. is based on public information. Taglich Brothers, Inc. does not currently have an Investment Banking relationship with the company mentioned in this report and was not a manager or co-manager of any offering for the company with in the last three years.

All research issued by Taglich Brothers, Inc. is based on public information. The company paid to Taglich Brothers an upfront fee of Seven Thousand Dollars (US\$7,000.00) on April 15, 2009 for the creation and dissemination of research reports through November 15, 2009. Starting November 15, 2009, the monthly price for such services will revert back to One Thousand Seven Hundred Fifty dollars (US\$1,750.00) as set forth in a prior annual contract that expired February 5, 2009. Under the terms of that prior contract, the company paid Taglich Brothers the sum of Nineteen Thousand Five Hundred Dollars (US\$19,500) for the creation and dissemination of research reports for the 12 months through February, 2009, after which the company paid Taglich Brothers the sum of One Thousand Seven Hundred and Fifty Dollars (US\$1,750) per month for such services.

### **General Disclosures**

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### **Analyst Certification**

**I, Juan Noble, the research analyst of this report, hereby certify that the views expressed in this report accurately reflect my personal views about the subject securities and issuers; and that no part of my compensation was, is, or will be directly or indirectly related to the specific recommendations or views contained in this report.**

### **Public companies mentioned in this report**

Amgen	(NasdaqGS: AMGN)	Roche Holdings AG Beare	(Nasdaq:RHHBF.PK)
Misonix	(Nasdaq: MSON)	Sigma-Aldrich	(Nasdaq: SIAL)
Novartis AG	(NYSE: NVS)	Thermo Fisher Scientific	(NYSE: TMO)
Qiagen NV	(Nasdaq: QGEN)		

**Meaning of Ratings**

**Buy** We believe the company is undervalued relative to its market and peers. We believe its risk reward ratio strongly advocates purchase of the stock relative to other stocks in the marketplace. Remember, with all equities there is always downside risk.

**Speculative Buy** We believe that the long run prospects of the company are positive. We believe its risk reward ratio advocates purchase of the stock. We feel the investment risk is higher than our typical “buy” recommendation. In the short run, the stock may be subject to high volatility and continue to trade at a discount to its market.

**Neutral** We will remain neutral pending certain developments.

**Underperform** We believe that the company may be fairly valued based on its current status. Upside potential is limited relative to investment risk.

**Sell** We believe that the company is significantly overvalued based on its current status. The future of the Company's operations may be questionable and there is an extreme level of investment risk relative to reward.

**Some notable Risks within the Microcap Market**

**Stocks in the Microcap segment of the market have many risks that are not as prevalent in Large-cap, Blue Chips or even Small-cap stocks. Often it is these risks that cause Microcap stocks to trade at discounts to their peers. The most common of these risks is liquidity risk, which is typically caused by small trading floats and very low trading volume which can lead to large spreads and high volatility in stock price. In addition, Microcaps tend to have significant company specific risks that contribute to lower valuations. Investors need to be aware of the higher probability of financial default and higher degree of financial distress inherent in the microcap segment of the market.**

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From time to time our analysts may choose to withhold or suspend a rating on a company. We continue to publish informational reports on such companies; however, they have no ratings or price targets. In general, we will not rate any company that has too much business or financial uncertainty for our analysts to form an investment conclusion, or that is currently in the process of being acquired.