

BIOLIFE SOLUTIONS INC

Form S-1

December 16, 2013

As filed with the Securities and Exchange Commission on December 16, 2013

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UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

FORM S-1  
REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

BioLife Solutions, Inc.  
(Exact name of registrant as specified in its charter)

|   |   |   |
|---|---|---|
| Delaware  | 3845  | 94-3076866                              |
| (State or other<br>jurisdiction of<br>incorporation or<br>organization) | (Primary Standard<br>Industrial<br>Classification Code<br>Number) | (I.R.S. Employer<br>Identification No.) |

3303 Monte Villa Parkway  
Bothell, Washington 98021  
(425) 402-1400

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Daphne Taylor  
Chief Financial Officer  
3303 Monte Villa Parkway  
Bothell, Washington 98021  
(425) 402-1400

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

Copies to:

Christopher L. Doerksen, Esq.  
Kimberley R. Anderson, Esq.  
Dorsey & Whitney LLP  
701 Fifth Avenue, Suite 6100  
Seattle, Washington 98104

Approximate date of commencement of proposed sale to the public: As soon as practicable after this registration statement becomes 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:

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act,

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please check the following box and list the Securities Act registration statement number of the earlier 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. (Check one):

Large Accelerated Filer  Accelerated Filer  Non-Accelerated Filer  Smaller Reporting Company   
(Do not check if a smaller reporting company)

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## CALCULATION OF REGISTRATION FEE

| Title of each class of securities to be registered   | Proposed<br>maximum<br>aggregate<br>offering<br>price(1) | Amount of<br>registration<br>fee |
|--|--|----------------------------------|
| Units, each consisting of [ ] share[(s)] of common stock, \$0.001 par value and [ ] common stock warrant[(s)](2) |  |                                  |
| Shares of common stock included as part of the units (3)   |  |                                  |
| Common stock warrants included as part of the units  |  |                                  |
| Shares of common stock acquirable upon exercise of the common stock warrants(3)                                  |  |                                  |
| <b>TOTAL</b>   | <b>\$10,000,000</b>                                      | <b>\$1,288</b>                   |

(1) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended.

(2) No fee pursuant to Rule 457(g) under the Securities Act of 1933, as amended.

(3) Pursuant to Rule 416 under the Securities Act of 1933, as amended, the securities being registered hereunder include such indeterminate number of additional shares of common stock as may be issued after the date hereof as a result of stock splits, stock dividends or similar transactions.

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 of 1933, as amended (the "Securities Act"), or until this Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

The information contained 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 we are not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

Subject To Completion, Dated December 16, 2013

PRELIMINARY PROSPECTUS

BioLife Solutions, Inc.

[ ] Units  
 Each Unit Consisting of  
 [ ] Share(s) of Common Stock and  
 [ ] Warrant(s) to Purchase One Share of Common Stock

We are offering [ ] units, each unit consisting of [ ] share(s) of common stock, \$0.001 par value and [ ] common stock warrant[(s)] at a public offering price of \$ [ ] per unit. The warrants will become exercisable and separately transferable from the shares commencing [ ] calendar days after the date of this prospectus. At any time until [ ] years following the date of this prospectus, each warrant entitles the holder to purchase [ ] share[(s)] at an exercise price of \$[ ], subject to adjustment.

Our common stock is currently quoted on the OTCQB, under the symbol “BLFS”. We have applied to list our common stock on the Nasdaq Capital Market under the symbol “BLFS”. As of December 13, 2013 the last reported sale price of our common stock was \$0.59 per share on the OTCQB. We do not intend to apply for listing of the warrants on any securities exchange or other trading system.

We have retained Ladenburg Thalmann & Co. Inc. to act as our exclusive placement agent in connection with this offering until the expiration date of the offering. We intend to enter into a placement agency agreement with the placement agent, relating to the units offered by this prospectus. The placement agent is not purchasing or selling any of our units pursuant to this prospectus but will use its best efforts to sell the units being offered. Therefore, we will enter into a purchase agreement directly with investors in connection with this offering and confirmations and definitive prospectuses will be delivered, or otherwise made available, to all purchasers who agree to purchase units, informing the purchasers of the closing date as to such units. We will pay the placement agent a cash fee equal to: (i) 7% of aggregate gross proceeds of \$1.00 up to \$5,000,000 to us from the sale of the units; (ii) 8% of aggregate gross proceeds of \$5,000,001 up to \$10,000,000 to us from the sale of the units; and (iii) 10% of the incremental amount of aggregate gross proceeds above \$10,000,000 to us from the sale of units. In addition, we will grant the placement agent or its designees warrants to purchase the number of shares that is equivalent to 3% of the number of shares sold in the transaction at an exercise price equal to 125% of the per share equivalent paid in the offering by investors. See “Plan of Distribution” beginning on page 44 of this prospectus for more information regarding this arrangement.

Investing in our common stock involves a high degree of risk. You should read this entire prospectus carefully, including the section entitled “Risk Factors” beginning on page 8 of this prospectus.

|                           | Per Unit | Total |
|---------------------------|----------|-------|
| Public offering price     | \$[ ]    | \$[ ] |
| Placement agent’s fees(1) | \$[ ]    | \$[ ] |

|                                    |       |       |
|------------------------------------|-------|-------|
| Proceeds to us, before expenses(2) | \$[ ] | \$[ ] |
|------------------------------------|-------|-------|

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- (1) For the purpose of estimating the placement agent's fees, we have assumed that they will receive their maximum commission on all sales made in the offering. We have agreed to reimburse the placement agent's expenses in an amount not to exceed 1% of the aggregate gross proceeds raised in the offering. See "Plan of Distribution" beginning on page 44 of this prospectus for more information regarding this arrangement.
- (2) We estimate the total expenses of this offering, excluding the placement agent fees, will be approximately \$[ ]. Because there is no minimum offering amount required as a condition to closing in this offering, the actual public offering amount, placement agent fees, and proceeds to us, if any, are not presently determinable and may be substantially less than the total maximum offering set forth above. Once the offering price has been determined, the unit offering price and warrant exercise price will remain fixed for the duration of the offering. See "Plan of Distribution" beginning on page 44 of this prospectus for more information on this offering and the placement agent arrangements.

This offering will terminate on [ ], 2014, unless the offering is fully subscribed before that date or we decide to terminate the offering prior to that date. In either event, the offering may be closed without further notice to you. We expect that delivery of the units being offered pursuant to this prospectus will be made to the purchasers on or about [ ], 2014.

Neither the Securities and Exchange Commission, or SEC, 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.

Ladenburg Thalmann & Co. Inc.

The date of this prospectus is [ ], 2014

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You should rely only on the information contained in this prospectus that we have authorized for use in connection with this offering. Neither we nor the placement agent has authorized any other person to provide you with additional or different information. If anyone provides you with different or inconsistent information, you should not rely on it. Neither we nor the placement agent is making an offer to sell these securities in any jurisdiction where an offer or sale is not permitted. You should assume that the information in this prospectus is accurate only as of the date on the front cover of this prospectus, regardless of the time of delivery of this prospectus or any sale of our securities. Our business, financial condition, results of operations and prospects may have changed since that date.

Some of the industry and market data contained in this prospectus are based on independent industry publications or other publicly available information, while other information is based on our internal sources. Although we believe that each source is reliable as of its respective date, the information contained in such sources has not been independently verified, and neither we, nor the placement agent can assure you as to the accuracy or completeness of this information.



## PROSPECTUS SUMMARY

This summary highlights information contained elsewhere in this prospectus and does not contain all of the information you should consider before buying our securities. You should read the entire prospectus carefully, especially the “Risk Factors” section and our financial statements and the related notes appearing at the end of this prospectus, before deciding to invest in shares of our securities. Unless otherwise noted, all share and per share data in this prospectus gives effect to (i) the 1-for-[ ] reverse stock split of our common stock implemented on [ ], 2014, which converted each block of [ ] shares of the common stock issued and outstanding as of the close of business on [ ], 2014 into one share and is based on 70,414,877 pre-reverse split shares of common stock issued and outstanding as of December 16, 2013, see “Description of Securities” below; and (ii) the issuance of [ ] units to two investors in exchange for the conversion of \$10.6 million principal amount of outstanding promissory notes and \$[ ] million of interest accrued thereon, assuming an initial public offering price for the units in this offering of \$[ ] per unit and a conversion date of [ ], 2014. For more information about our reverse stock split, see “Recent Developments” below. Unless the context provides otherwise, all references to “BioLife,” “we,” “us,” “our,” or similar terms, refer to BioLife Solutions, Inc. In this prospectus, all references to “\$” or “dollars” mean the U.S. dollar, and unless otherwise indicated all currency amounts in this prospectus are stated in U.S. dollars.

### About Our Company

We develop, manufacture and market patented hypothermic storage and cryopreservation solutions for cells and tissue. Our product offerings include:

- Patented biopreservation media products for cells, tissues, and organs
- Generic formulations of blood stem cell freezing media products
- Custom product formulation and custom packaging services
- Precision thermal packaging products
- Contract aseptic manufacturing formulation, fill, and finish services of liquid media products

We market our proprietary HypoThermosol®, CryoStor®, generic BloodStor®, SAVSU® biopreservation media products and precision thermal packaging products to the biobanking, drug discovery, and regenerative medicine markets, including hospital-based stem cell transplant centers, pharmaceutical companies, cord blood and adult stem cell banks, hair transplant centers, and suppliers of cells to the drug discovery, toxicology testing and diagnostic markets. All of our products are serum-free and protein-free, fully defined, and are manufactured under current Good Manufacturing Practices (“cGMP”) using United States Pharmacopeia (“USP”)/Multicompendial or the highest available grade components.

Our patented biopreservation media products are formulated to reduce preservation-induced, delayed-onset cell damage and death. Our platform enabling technology provides our customers significant shelf life extension of biologic source material and final cell products, and also greatly improved post-preservation cell, tissue, and organ viability and function. We believe that our products have been incorporated into the manufacturing, storage, shipping, freezing, and clinical delivery processes of over 50 clinical trial stage regenerative medicine products and therapies.

The discoveries made by our scientists and consultants relate to how cells, tissues, and organs respond to the stress of hypothermic storage, cryopreservation, and the thawing process. These discoveries enabled the formulation of truly innovative biopreservation media products that protect biologic material from preservation-related cellular injury, much of which is not apparent immediately after return to normothermic body temperature. Our product formulations have demonstrated remarkable reduction in apoptotic (programmed) and necrotic (pathologic) cell death mechanisms and are enabling the clinical and commercial development of dozens of innovative regenerative medicine products.



We were incorporated in Delaware in 1987 under the name Trans Time Medical Products, Inc. In 2002, the Company, then known as Cryomedical Sciences, Inc., and engaged in manufacturing and marketing cryosurgical products, completed a merger with our wholly-owned subsidiary, BioLife Solutions, Inc., which was engaged as a life sciences tools provider. Following the merger, we changed our name to BioLife Solutions, Inc. We do not have any subsidiaries.

Our principal executive offices are located at 3303 Monte Villa Parkway, Suite 310, Bothell, Washington 98021 and the telephone number is (425) 402-1400. Information about us is available on our internet website [www.biolifesolutions.com](http://www.biolifesolutions.com). The information contained on our website or that can be accessed through our website does not constitute part of this prospectus and is not incorporated in any manner into this prospectus.

## Recent Developments

## Reverse Stock Split

On December 16, 2013, the holders of a majority of our outstanding common stock approved a proposal to authorize our board to effect a reverse stock split. The reverse stock split was approved by written consent in lieu of a special meeting effective in accordance with the relevant sections of the Delaware General Corporation Law, following approval of our board. Pursuant to the written consent, the board has been granted the authority, in its discretion, to effect a reverse stock split by a ratio of not less than 1-for-4 and not more than 1-for-16, with a possible reduction in the number of shares of common stock that are authorized in our certificate of incorporation. No fractional shares of our common stock will be issued as a result of the reverse stock split. In the event the proposed reverse stock split leaves a stockholder with a fraction of a share, the number of shares due to the stockholder will be rounded up to the nearest whole share. We have filed a preliminary information statement with the SEC pursuant to Section 14(c) of the Securities and Exchange Act of 1934, and we will be mailing the definitive information statement to all stockholders as of December 16, 2013. The reverse stock split will not be effective unless and until the board files an amendment to our certificate of incorporation, which must occur prior to the first anniversary of the mailing date of the information statement. It is our intent to effect the reverse stock split prior to the closing of this offering.

## Conversion of Promissory Notes in Exchange for Units

On December 16, 2013, we entered into a note conversion agreement with each of Thomas Girschweiler, a director and stockholder of the Company, and Walter Villiger, an affiliate of the Company. The noteholders hold, as of December 16, 2013, an aggregate of \$14.1 million, including \$10.6 million principal amount of outstanding promissory notes and \$3.5 million of accrued and unpaid interest under secured convertible multi-draw term loan facility agreements entered into with each of the noteholders on January 11, 2008, which we refer to as the facility agreements. Pursuant to the note conversion agreements, the noteholders have agreed to convert on a private placement basis the outstanding indebtedness, including accrued interest thereon through the closing date, into units on substantially similar terms as the offering. In connection with the note conversion, the noteholders will release all security and the facility agreements will be terminated. Such conversion will occur concurrently with the closing of the offering. Cash will be paid in lieu of any fractional units that would otherwise be issuable.

## The Offering

## Units:

Units offered

[ ] units, at \$[ ] per unit.

Each unit consists of [ ] share[s] and [ ] warrant[s].

## Common Stock:

Common stock offered

[ ] shares

Common stock outstanding before the offering

[ ] shares

Common stock outstanding after the offering

[ ] shares

Quoting

Our common stock is currently quoted on the OTCQB under the symbol "BLFS".

## Warrants:

Exercisability

Each warrant is exercisable for [ ] share[s].

Exercise Price

\$ [ ]

Exercise Period

The warrants become exercisable [ ] days from the date of this prospectus.

The warrants will expire at [ ] p.m., [ ] time, on [ ].

Use of Proceeds:

We intend to use the net proceeds from this offering for product development and general corporate purposes, including working capital and potential acquisitions.

Risk Factors:

Investing in our common stock involves risks that are described in the “Risk Factors” section beginning on page 8 of this prospectus.

## Summary Financial Information

The following tables summarize our financial data for the periods presented. The summary statements of operations data for the years ended December 31, 2012 and 2011, and the balance sheet data as of December 31, 2012 and 2011, have been derived from our audited financial statements, which are included elsewhere in this prospectus. The summary statements of operations data for the nine months ended September 30, 2013 and 2012, and the balance sheet data as of September 30, 2013, have been derived from our unaudited financial statements, which are included elsewhere in this prospectus. The historical results are not necessarily indicative of the results to be expected for any future periods. You should read this data together with our financial statements and the related notes included elsewhere in this prospectus, as well as “Management's Discussion and Analysis of Financial Condition and Results of Operations” beginning on page 21 of this prospectus.

## Statements of Operations Data

|   | Years Ended  |             | Nine Months Ended |             |
|---|--------------|-------------|-------------------|-------------|
|   | December 31, |             | September 30,     |             |
|   | 2012         | 2011        | 2013              | 2012        |
| Total revenue   | \$5,662,990  | \$2,758,729 | \$6,660,521       | \$3,614,770 |
| Total operating expenses  | 3,234,657    | 2,612,841   | 2,843,390         | 2,175,463   |
| Net loss  | (1,659,586)  | (1,956,639) | (599,592 )        | (1,147,998) |
| Basic and diluted net loss per share(1)   | [ ]          | [ ]         | [ ]               | [ ]         |
| Basic and diluted weighted average shares used to calculate net loss per share(1) | [ ]          | [ ]         | [ ]               | [ ]         |

(1)The basic and diluted net loss per share and shares used in loss per share calculation have been adjusted to reflect (i) the one-for-[ ] reverse stock split and (ii) the issuance of [ ] units to the noteholders in exchange for the conversion \$10.6 million principal amount of outstanding promissory notes and \$[ ] million of accrued and unpaid interest thereon, assuming an initial public offering price of \$[ ] per unit and a conversion date of [ ], 2014.

## Balance Sheet Data

|   | December 31, |              | September    |
|---|--------------|--------------|--------------|
|   | 2012         | 2011         | 30,<br>2013  |
| Cash and cash equivalents               | \$196,478    | \$16,864     | \$79,287     |
| Total assets                            | 3,169,829    | 1,662,017    | 3,207,024    |
| Total liabilities                       | 15,655,852   | 12,842,503   | 16,066,394   |
| Total shareholders' equity (deficiency) | (12,486,023) | (11,180,486) | (12,859,370) |

## RISK FACTORS

Investing in our common stock involves a high degree of risk. You should consider carefully the risks and uncertainties described below, together with all of the other information contained in this prospectus, before deciding to invest in our common stock. If any of the following risks materialize, our business, financial condition, results of operation and future prospects will likely be materially and adversely affected. In that event, the market price of our common stock could decline and you could lose all or part of your investment.

### Risks Related to Our Business

The majority of our net sales come from a relatively small number of customers and a limited number of market sectors; if we lose any of these customers or if there are problems in those market sectors, our net sales and operating results could decline significantly.

We derived approximately 46% of our product revenue in the fiscal year ended December 31, 2012, and approximately 55% of our product revenue in the first three quarters of 2013, from our relationship with one contract manufacturing customer, which we commenced deliveries to in the second quarter of 2012. Our principal customers may vary from period to period, and our principal customers may not continue to purchase products from us at current levels, or at all. Significant reductions in net sales to any of these customers, the loss of our major contract manufacturing customer, or our failure to make appropriate choices as to the customers we serve could seriously harm our business. In addition, we focus our net sales to customers in only a few market sectors. Each of these sectors is subject to macroeconomic conditions as well as trends and conditions that are sector specific. Shifts in the performance of a sector served by us, as well as the economic, business and/or regulatory conditions that affect the sector, or our failure to choose appropriate sectors can particularly impact us. Any weakness in the market sectors in which our customers are concentrated could affect our business and results of operations.

We have a history of losses and may never achieve or maintain profitability.

We have incurred annual operating losses since inception, and may continue to incur operating losses. For the fiscal years ended December 31, 2012 and December 31, 2011, we had net losses of \$1,659,586 and \$1,956,639, respectively. For the nine months ended September 30, 2013, we had a net loss of \$599,592. As of September 30, 2013, our accumulated deficit was approximately \$56.4 million. Of this amount, approximately \$18 million has accumulated since our merger in 2002. We may not be able to successfully achieve or sustain profitability. Successful transition to profitable operations is dependent upon achieving a level of revenues adequate to support our cost structure.

We may need additional capital to reach and maintain a sustainable level of positive cash flow and if we raise such additional capital through the issuance of equity or convertible debt securities, your ownership will be diluted, and equity securities issued may have rights, preferences and privileges superior to the shares.

If we are unable to achieve profitability sufficient to permit us to fund our operations and other planned actions, we may be required to raise additional capital. There can be no assurance that such capital would be available on favorable terms, or at all. If we raise additional capital through the issuance of equity or convertible debt securities, the percentage ownership held by existing stockholders may be reduced, and the market price of our common stock could fall as a result of resales of any shares due to an increased number of shares available for sale in the market. Further, our board has the authority to establish the designation of additional shares of preferred stock that may be convertible into common stock without any action by our stockholders, and to fix the rights, preferences, privileges and restrictions, including voting rights, of such shares. Any such additional shares of preferred stock may have rights, preferences and privileges senior to those of outstanding common stock, and the issuance and conversion of any such

preferred stock would further dilute the percentage ownership of our stockholders. Debt financing, if available, may involve restrictive covenants, which may limit our operating flexibility with respect to certain business matters. If we are unable to secure additional capital as circumstances require, we may not be able to fund our planned activities or continue our operations.

There is uncertainty surrounding our ability to successfully commercialize our HypoThermosol®, CryoStor® and BloodStor® biopreservation media products, biopreservation thermal packaging products and contract manufacturing services.

Our growth depends, in part, on our continued ability to successfully develop, commercialize and market our HypoThermosol®, CryoStor®, and BloodStor® biopreservation media products, precision thermal packaging products and contract and manufacturing services. Even in markets that do not require us to obtain regulatory approvals, our products will not be used unless they present an attractive alternative to competitive products and the benefits and cost savings achieved through their use outweigh the cost of our products. If we are unable to develop and sustain a market for our products, this will have a material adverse effect on our results of operations and our ability to continue and grow our business.

The success of our HypoThermosol® and CryoStor® biopreservation media products is dependent, in part, on the commercial success of new regenerative medicine technologies.

Our HypoThermosol® and CryoStor® biopreservation media products are marketed to biotechnology companies and research institutions engaged in research and development of cell, gene and tissue engineering therapies. The end-products or therapies developed by these biotechnology companies and research institutions are subject to substantial regulatory oversight by the United States Food and Drug Administration (“FDA”) and other regulatory bodies, and many of these therapies are years away from commercialization. Thus demand, if any, for HypoThermosol® and CryoStor® is expected to be limited for several years. Failure of the end-products that use our biopreservation media products to receive regulatory approvals and be successfully commercialized will have an adverse effect in the demand for our products.

We face significant competition.

The life sciences industry is highly competitive. We anticipate that we will continue to face increased competition as existing companies develop new or improved products and as new companies enter the market with new technologies. Many of our competitors are significantly larger than us and have greater financial, technical, research, marketing, sales, distribution and other resources than us. There can be no assurance that our competitors will not succeed in developing or marketing technologies and products that are more effective or commercially attractive than any that are being developed or marketed by us, or that such competitors will not succeed in obtaining regulatory approval, or introducing or commercializing any such products, prior to us. Such developments could have a material adverse effect on our business, financial condition and results of operations. Also, even if we are able to compete successfully, there can be no assurance that we could do so in a profitable manner.

We are dependent on outside suppliers for all of our manufacturing supplies.

We rely on outside suppliers for all of our manufacturing supplies, parts and components. Although we believe we could develop alternative sources of supply for most of these components within a reasonable period of time, there can be no assurance that, in the future, our current or alternative sources will be able to meet all of our demands on a timely basis. Unavailability of necessary components could require us to re-engineer our products to accommodate available substitutions which could increase costs to us and/or have a material adverse effect on manufacturing schedules, products performance and market acceptance. In addition, an uncorrected defect or supplier’s variation in a component or raw material, either unknown to us or incompatible with our manufacturing process, could harm our ability to manufacture products. We might not be able to find a sufficient alternative supplier in a reasonable time period, or on commercially reasonable terms, if at all. If we fail to obtain a supplier for the components of our products, our operations could be disrupted.

Our success will depend on our ability to attract and retain key personnel.

In order to execute our business plan, we must attract, retain and motivate highly qualified managerial, scientific, manufacturing, and sales personnel. If we fail to attract and retain skilled scientific and sales personnel, our sales efforts will be hindered. Our future success depends to a significant degree upon the continued services of key scientific and technical personnel. If we do not attract and retain qualified personnel we will not be able to achieve our growth objectives.

If we were to be successfully sued related to our products or operations, we could face substantial liabilities that may exceed our resources.

We may be held liable if any of our products or operations cause injury or death. These risks are inherent in the development of life sciences industry products. We currently maintain commercial general and umbrella liability policies with combined limits of \$7 million per occurrence and in the aggregate, in addition to a \$5 million per claim and annual aggregate product liability insurance policy consistent with industry standards. When necessary for our products, we intend to obtain additional product liability insurance. Insurance coverage may be prohibitively expensive, may not fully cover potential liabilities or may not be available in the future. Inability to obtain sufficient insurance coverage at an acceptable cost or otherwise to protect against potential product liability claims could prevent or inhibit the commercialization of our products. If we were to be sued for any injury caused by or associated with our products or operations, the litigation could consume substantial time and attention of our management, and the resulting liability could exceed our total assets.



Regulatory or other difficulties in manufacturing could have an adverse effect upon our expenses and our product revenues.

We currently manufacture our products ourselves. The manufacture of our products is difficult, complex and highly regulated. To support our current and prospective clinical customers, we intend to comply with cGMP in the manufacture of our products. Our ability to adequately and in a timely manner manufacture and supply our products is dependent on the uninterrupted and efficient operation of our facilities and those of third-parties producing supplies upon which we rely in our manufacturing. The manufacture of our products may be impacted by:

availability or contamination of raw materials and components used in the manufacturing process, particularly those for which we have no other source or supplier;

the ongoing capacity of our facilities;

our ability to comply with regulatory requirements, including our ability to comply with cGMP;

inclement weather and natural disasters;

changes in forecasts of future demand for product components;

potential facility contamination by microorganisms or viruses;

updating of manufacturing specifications; and

product quality success rates and yields.

If the efficient manufacture and supply of our products is interrupted, we may experience delayed shipments or supply constraints. If we are at any time unable to provide an uninterrupted supply of our products to customers, our customers may be unable to supply their end-products incorporating our products to their patients and other customers, which could materially and adversely affect our product sales and results of operations.

We are registered with FDA as a contract manufacturer. Our contract manufacturing customers may require us to comply with cGMP requirements and may audit our compliance with cGMP standards. If a customer finds us to be out of compliance with cGMP standards, this could have a material adverse effect on our ability to retain and attract contract manufacturing customers.

Failure to comply with the covenants and conditions of promissory notes issued by us to the noteholders could result in the acceleration of our outstanding indebtedness, and we may not have sufficient funds available to repay the amounts due.

Pursuant to the note conversion agreement, we have agreed to issue units to each of the noteholders in exchange for the conversion of \$10.6 million principal amount of outstanding promissory notes and accrued and unpaid interest. Until the promissory notes are converted, they remain secured by all of our assets. An event of default, including from the failure to observe or comply with any material covenant or condition in the promissory notes or the facility agreements, could, if not cured or waived, result in the acceleration of the outstanding indebtedness and the loss of some or all of our assets. If our operations are insufficiently profitable to permit us to pay such notes when due, and these stockholders are unable or unwilling to provide access to additional funds and/or amend the terms of the facility agreements, we would need to find immediate additional sources of capital. There can be no assurance that such capital would be available on favorable terms, or at all. As such, we may have to cease operations and you could lose your investment.

If we become subject to additional regulatory requirements, the manufacture and sale of our products may be delayed or prevented, or we may become subject to increased expenses.

As an ancillary or excipient reagent used in the production, transportation, and infusion of our customers' regulated clinical products, HypoThermosol®, CryoStor®, and BloodStor® are not currently subject to specific FDA or other

non-US pre-market approval for drugs, devices, or biologics. In particular, we are not required to sponsor formal prospective, controlled clinical-trials in order to establish safety and efficacy. However, there can be no assurance that we will not be required to obtain approval from the FDA, or foreign regulatory authorities, as applicable, prior to marketing any of our products in the future. Any such requirements could delay or prevent the sale of our products, or may subject us to additional expenses.

We may be adversely affected if our controls over external financial reporting fail or are circumvented.

We regularly review and update our internal controls, disclosure controls and procedures, and corporate governance policies. We are required under the Sarbanes-Oxley Act of 2002 to report annually on our internal control over financial reporting, but as a smaller reporting company we are exempt from the requirement to have our independent accountants attest to our internal control over financial reporting. If it were to be determined that our internal control over financial reporting is not effective, such shortcoming could have an adverse effect on our business and financial results and the price of our common stock could be negatively affected. This reporting requirement could also make it more difficult or more costly for us to obtain certain types of insurance, including director and officer liability insurance, and we may be forced to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. Any system of internal controls, however well designed and operated, is based in part on certain assumptions and can provide only reasonable, not absolute, assurances that the objectives of the system are met. Any failure or circumvention of the controls and procedures or failure to comply with regulation concerning control and procedures could have a material effect on our business, results of operation and financial condition. Any of these events could result in an adverse reaction in the financial marketplace due to a loss of investor confidence in the reliability of our financial statements, which ultimately could negatively affect the market price of our shares, increase the volatility of our stock price and adversely affect our ability to raise additional funding. The effect of these events could also make it more difficult for us to attract and retain qualified persons to serve on our board and our board committees and as executive officers.

## Risks Related to Our Intellectual Property

Our proprietary rights may not adequately protect our technologies and products.

Our commercial success will depend on our ability to obtain patents and/or regulatory exclusivity and maintain adequate protection for our technologies and products in the United States and other countries. We will be able to protect our proprietary rights from unauthorized use by third parties only to the extent that our proprietary technologies and products are covered by valid and enforceable patents or are effectively maintained as trade secrets.

We intend to apply for additional patents covering both our technologies and products, as we deem appropriate. We may, however, fail to apply for patents on important technologies or products in a timely fashion, if at all. Our existing patents and any future patents we obtain may not be sufficiently broad to prevent others from practicing our technologies or from developing competing products and technologies. In addition, the patent positions of life science industry companies are highly uncertain and involve complex legal and factual questions for which important legal principles remain unresolved. As a result, the validity and enforceability of our patents cannot be predicted with certainty. In addition, we cannot guarantee that:

- we were the first to make the inventions covered by each of our issued patents and pending patent applications;
- we were the first to file patent applications for these inventions;
- others will not independently develop similar or alternative technologies or duplicate any of our technologies;
- any of our pending patent applications will result in issued patents;
- any of our patents will be valid or enforceable;
- any patents issued to us will provide us with any competitive advantages, or will not be challenged by third parties;
- and
- we will develop additional proprietary technologies that are patentable, or the patents of others will not have an adverse effect on our business.

The actual protection afforded by a patent varies on a product-by-product basis, from country to country and depends on many factors, including the type of patent, the scope of its coverage, the availability of regulatory related extensions, the availability of legal remedies in a particular country and the validity and enforceability of the patents. Our ability to maintain and solidify our proprietary position for our products will depend on our success in obtaining effective claims and enforcing those claims once granted. Our issued patents and those that may be issued in the future, or those licensed to us, may be challenged, invalidated, unenforceable or circumvented, and the rights granted under any issued patents may not provide us with proprietary protection or competitive advantages against competitors with similar products. We also rely on trade secrets to protect some of our technology, especially where it is believed that patent protection is appropriate or obtainable. However, trade secrets are difficult to maintain. While we use reasonable efforts to protect our trade secrets, our employees, consultants, contractors or scientific and other advisors may unintentionally or willfully disclose our proprietary information to competitors. Enforcement of claims that a third party has illegally obtained and is using trade secrets is expensive, time consuming and uncertain. In addition, non-U.S. courts are sometimes less willing than U.S. courts to protect trade secrets. If our competitors independently develop equivalent knowledge, methods and know-how, we would not be able to assert our trade secrets against them and our business could be harmed.

We may not be able to protect our intellectual property rights throughout the world.

Filing, prosecuting and defending patents on all of our products in every jurisdiction would be prohibitively expensive. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products. These products may compete with our products, and may not be covered by any patent claims or other intellectual property rights.

The laws of some non-U.S. countries do not protect intellectual property rights to the same extent as the laws of the United States, and many companies have encountered significant problems in protecting and defending such rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents and other intellectual property protection, particularly those relating to biotechnology, which could make it difficult for us to stop the infringement of our patents. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial cost and divert our efforts and attention from other aspects of our business.

If we fail to protect our intellectual property rights, our competitors may take advantage of our ideas and compete directly against us.

Our success will depend to a significant degree on our ability to secure and protect intellectual property rights and enforce patent and trademark protections relating to our technology. While we believe that the protection of patents and trademarks is important to our business, we also rely on a combination of copyright, trade secret, nondisclosure and confidentiality agreements, know-how and continuing technological innovation to maintain our competitive position. From time to time, litigation may be advisable to protect our intellectual property position. However, these legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep any competitive advantage. Any litigation in this regard could be costly, and it is possible that we will not have sufficient resources to fully pursue litigation or to protect our intellectual property rights. This could result in the rejection or invalidation of our existing and future patents. Any adverse outcome in litigation relating to the validity of our patents, or any failure to pursue litigation or otherwise to protect our patent position, could materially harm our business and financial condition. In addition, confidentiality agreements with our employees, consultants, customers, and key vendors may not prevent the unauthorized disclosure or use of our technology. It is possible that these agreements will be breached or that they will not be enforceable in every instance, and that we will not have adequate remedies for any such breach. Enforcement of these agreements may be costly and time consuming. Furthermore, the laws of foreign countries may not protect our intellectual property rights to the same extent as the laws of the United States.

The patent protection for our products may expire before we are able to maximize their commercial value, which may subject us to increased competition and reduce or eliminate our opportunity to generate product revenue.

The patents for our products have varying expiration dates and, when these patents expire, we may be subject to increased competition and we may not be able to recover our development costs. In some of the larger economic territories, such as the United States and Europe, patent term extension/restoration may be available. We cannot, however, be certain that an extension will be granted or, if granted, what the applicable time period or the scope of patent protection afforded during any extended period will be.

If we are unable to obtain patent term extension/restoration or some other exclusivity, we could be subject to increased competition and our opportunity to establish or maintain product revenue could be substantially reduced or eliminated. Furthermore, we may not have sufficient time to recover our development costs prior to the expiration of our U.S. and non-U.S. patents.

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

If we choose to go to court to stop someone else from using the inventions claimed in our patents or our licensed patents, that individual or company has the right to ask the court to rule that these patents are invalid and/or should not be enforced against that third party. These lawsuits are expensive and would consume time and other resources even if we were successful in stopping the infringement of these patents. In addition, there is a risk that the court will decide that these patents are invalid or unenforceable and that we do not have the right to stop the other party from using the inventions. There is also the risk that, even if the validity or unenforceability of these patents is upheld, the court will refuse to stop the other party on the grounds that such other party's activities do not infringe our rights.

If we wish to use the technology claimed in issued and unexpired patents owned by others, we will need to obtain a license from the owner, enter into litigation to challenge the validity or enforceability of the patents or incur the risk of litigation in the event that the owner asserts that we infringed its patents. The failure to obtain a license to technology or the failure to challenge an issued patent that we may require to discover, develop or commercialize our products may have a material adverse effect on us.

If a third party asserts that we infringed its patents or other proprietary rights, we could face a number of risks that could seriously harm our results of operations, financial condition and competitive position, including:

- patent infringement and other intellectual property claims, which would be costly and time consuming to defend, whether or not the claims have merit, and which could delay a product and divert management's attention from our business;
- substantial damages for past infringement, which we may have to pay if a court determines that our product or technologies infringe a competitor's patent or other proprietary rights;
- a court prohibiting us from selling or licensing our technologies unless the third party licenses its patents or other proprietary rights to us on commercially reasonable terms, which it is not required to do; and
- if a license is available from a third party, we may have to pay substantial royalties or lump-sum payments or grant cross licenses to our patents or other proprietary rights to obtain that license.

The biotechnology industry has produced a proliferation of patents, and it is not always clear to industry participants, including us, which patents cover various types of products or methods of use. The coverage of patents is subject to interpretation by the courts, and the interpretation is not always uniform. If we are sued for patent infringement, we would need to demonstrate that our products or methods of use either do not infringe the patent claims of the relevant patent, and/or that the patent claims are invalid, and/or that the patent is unenforceable and we may not be able to do

this. Proving invalidity, in particular, is difficult since it requires a showing of clear and convincing evidence to overcome the presumption of validity enjoyed by issued patents.

U.S. patent laws as well as the laws of some foreign jurisdictions provide for provisional rights in published patent applications beginning on the date of publication, including the right to obtain reasonable royalties, if a patent subsequently issues and certain other conditions are met.

Because some patent applications in the United States may be maintained in secrecy until the patents are issued, because patent applications in the United States and many foreign jurisdictions are typically not published until 18 months after filing, and because publications in the scientific literature often lag behind actual discoveries, we cannot be certain that others have not filed patent applications for technology covered by our issued patents or our pending applications, or that we were the first to invent the technology.

Patent applications filed by third parties that cover technology similar to ours may have priority over our patent applications and could further require us to obtain rights to issued patents covering such technologies. If another party files a U.S. patent application on an invention similar to ours, we may elect to participate in or be drawn into an interference proceeding declared by the U.S. Patent and Trademark Office to determine priority of invention in the United States. The costs of these proceedings could be substantial, and it is possible that such efforts would be unsuccessful, resulting in a loss of our U.S. patent position with respect to such inventions. Some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. In addition, any uncertainties resulting from the initiation and continuation of any litigation could have a material adverse effect on our ability to raise the funds necessary to continue our operations. We cannot predict whether third parties will assert these claims against us, or whether those claims will harm our business. If we are forced to defend against these claims, whether they are with or without any merit and whether they are resolved in favor of or against us, we may face costly litigation and diversion of management's attention and resources. As a result of these disputes, we may have to develop costly non-infringing technology, or enter into licensing agreements. These agreements, if necessary, may be unavailable on terms acceptable to us, if at all, which could seriously harm our business or financial condition.

## Risks Related to our Common Stock and Other Securities and the Offering

The market for our common stock is limited and our stock price is volatile.

Our common stock, traded on the OTCQB, has historically traded at low average daily volumes, resulting in a limited market for the purchase and sale of our common stock.

The market prices of many publicly traded companies, including emerging companies in the life sciences industry, have been, and can be expected to be, highly volatile. The future market price of our common stock could be significantly impacted by numerous factors, including, but not limited to:

- Future sales of our common stock or other fundraising events;
- Changes in our capital structure, including stock splits or reverse stock splits;
- Announcements of technological innovations for new commercial products by our present or potential competitors;
- Developments concerning proprietary rights;
- Adverse results in our field or with clinical tests of our products in customer applications;
- Adverse litigation;
- Unfavorable legislation or regulatory decisions;
- Public concerns regarding our products;
- Variations in quarterly operating results;
- General trends in the health care industry; and
- Other factors outside of our control.

A significant percentage of our outstanding common stock is held by two stockholders, who have also provided us with our debt financing facilities, and these stockholders therefore have significant influence on us and our corporate actions.

As of December 16, 2013, two of our existing stockholders, Thomas Girschweiler and Walter Villiger, beneficially owned, collectively, approximately 52.4% of our outstanding shares. In addition, these two stockholders hold, as of December 16, 2013, an aggregate \$10.6 million principal amount of outstanding promissory notes and \$3.5 million of accrued and unpaid interest under secured convertible multi-draw term loan facility agreements. On December 16, 2013, we entered into note conversion agreements, with each of Mr. Girschweiler and Mr. Villiger. Pursuant to the note conversion agreements, the Mr. Girschweiler and Mr. Villiger have agreed to convert on a private placement basis the outstanding indebtedness, including accrued interest thereon, into units pursuant to a private placement on substantially similar terms as the offering. Following conversion, the beneficial ownership of Messrs. Girschweiler and Villiger will increase from approximately 52.4% to [ ]%, assuming we sell [ ] units in this offering. If we sell a smaller number of units in this offering, the beneficial ownership of Messrs. Girschweiler and Villiger will be greater. Mr. Girschweiler, is also a member of our board. Accordingly, these stockholders have had, and will continue to have, significant influence in determining the outcome of any corporate transaction or other matter submitted to the stockholders for approval, including mergers, consolidations and the sale of all or substantially all of our assets, election of directors and other significant corporate actions. In addition, without the consent of these stockholders, we could be prevented from entering into transactions that could be beneficial to us. For more information regarding our principal stockholders, see "Security Ownership of Certain Beneficial Owners and Management" beginning on page 41 of this prospectus.

Trading of our stock may be restricted by the SEC's "Penny Stock" regulations, which may limit a stockholder's ability to buy and sell our stock.

The SEC has adopted regulations that include in the definition of “penny stock” any equity security that has a market price less than \$5.00 per share. Our securities are covered by the penny stock rules, which impose additional sales practice requirements on broker-dealers who sell to persons other than established customers or “accredited investors.” The term “accredited investor” refers generally to institutions with assets in excess of \$5,000,000 or individuals with a net worth in excess of \$1,000,000 or annual income exceeding \$200,000 or \$300,000 jointly with his or her spouse. The penny stock rules require a broker-dealer, prior to a transaction in a penny stock not otherwise exempt from the rules, to deliver a standardized risk disclosure document in a form prepared by the SEC, which provides information about penny stocks and the nature and level of risks in the penny stock market. The broker-dealer also must provide the customer with current bid and offer quotations for the penny stock, the compensation of the broker-dealer and its salesperson in the transaction and monthly account statements showing the market value of each penny stock held in the customer's account. The bid and offer quotations, and the broker-dealer and salesperson compensation information, must be given to the customer orally or in writing prior to effecting the transaction and must be given to the customer in writing before or with the customer's confirmation. In addition, the penny stock rules require that, prior to a transaction in a penny stock not otherwise exempt from these rules, the broker-dealer must make a special written determination that the penny stock is a suitable investment for the purchaser and receive the purchaser's written agreement to the transaction. These disclosure requirements may have the effect of reducing the level of trading activity in the secondary market for the stock that is subject to these penny stock rules. Consequently, these penny stock rules may affect the ability of broker-dealers to trade our securities. We believe that the penny stock rules may discourage investor interest in, and limit the marketability of, our common stock.



FINRA sales practice requirements may also limit a stockholder's ability to buy and sell our stock.

In addition to the "penny stock" rules described above, 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 stock and have an adverse effect on the market for our shares.

You will experience immediate and substantial dilution in the book value of the shares you purchase in this offering.

The offering price is substantially higher than the net tangible book value per share of our outstanding common stock. As a result, based on our capitalization as of September 30, 2013 you will incur immediate dilution in the book value of the shares you purchase in the offering. Based upon the issuance and sale of [ ] units at an initial public offering price of \$[ ] per unit, you will incur immediate dilution of approximately \$[ ] in the net tangible book value per share included in such units if you purchase units in this offering. In addition to this offering, subject to market conditions and other factors, we may pursue additional financings in the future, as we continue to build our business, which may result in further dilution to you.

We are at risk of securities class action litigation.

In the past, securities class action litigation has often been brought against a company following a decline in the market price of its securities. This risk is especially relevant for us because our stock price and those of other biotechnology and life sciences companies have experienced significant stock price volatility in recent years. If we face such litigation, it could result in substantial costs and a diversion of management's attention and resources, which could harm our business. We do maintain insurance, but the coverage may not be sufficient and may not be available in all instances.

Anti-takeover provisions in our charter documents and under Delaware law could make a third-party acquisition of us difficult.

Our amended and restated certificate of incorporation and amended and restated bylaws contain provisions that may discourage unsolicited takeover proposals that stockholders may consider to be in their best interests. These provisions include the ability of our board to designate the terms of and issue new series of preferred stock without stockholder approval and to amend our bylaws without stockholder approval. Further, as a Delaware corporation, we are subject to Section 203 of the Delaware General Corporation Law, which generally prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years following the date that the stockholder became an interested stockholder, unless certain specific requirements are met as set forth in Section 203. Collectively, these provisions could make a third-party acquisition of us difficult or could discourage transactions that otherwise could involve payment of a premium over prevailing market prices for our common stock.

We will have broad discretion as to the use of the net proceeds from this offering, and we may not use the proceeds effectively.

Our management will have broad discretion as to the application of the net proceeds. Our stockholders may not agree with the manner in which our management chooses to allocate and spend the net proceeds. Moreover, our management may use some of the net proceeds for corporate purposes that may not increase our market value or

profitability.

Our use of the offering proceeds may not yield a favorable return on your investment.

We currently intend to use the net proceeds received from the sale of the securities for general corporate purposes, including working capital and potential acquisitions. Our management has broad discretion over how these proceeds are used and could spend the proceeds in ways with which you may not agree. Pending the use of the proceeds in this offering, we will invest them. However, the proceeds may not be invested in a manner that yields a favorable or any return.

Future sales of our common stock by our existing stockholders may negatively impact the trading price of our common stock.

If a substantial number of our existing stockholders decide to sell shares of their common stock in the public market following the completion of this offering, the price at which our common stock trades could decline. Additionally, the public market's perception that such sales might occur may also depress the price of our common stock. Certain existing stockholders holding an aggregate [ ] shares and options to purchase [ ] shares have entered into lockup agreements pursuant to which they have agreed not to sell shares of our common stock in the public market for a period of 180 days following the completion of this public offering.

There is no public market for the warrants.

There is no established public trading market for the warrants, and we do not expect a market to develop. In addition, we do not intend to apply for listing of the warrants on any securities exchange. Without an active market, the liquidity of the warrants will be limited.

The warrants may not have any value.

The warrants will be exercisable for [ ] years from the date of initial exercise at an initial exercise price per share equal to \$[ ]. In the event that the price of a share does not exceed the exercise price of the warrants during the period when the warrants are exercisable, the warrants may not have any value.

Holders of the warrants will have no rights as a common stockholder until they acquire our common stock.

Until you acquire shares upon exercise of your warrants, you will have no rights with respect to our common stock. Upon exercise of your warrants, you will be entitled to exercise the rights of a common stockholder only as to matters for which the record date occurs after the exercise date.

An effective registration statement may not be in place when an investor desires to exercise warrants, thus precluding such investor from being able to exercise his, her or its warrants at that time.

No warrant held by an investor will be exercisable and we will not be obligated to issue common stock unless at the time such holder seeks to exercise such warrant, a prospectus relating to the common stock issuable upon exercise of the warrant is current (or an exemption from registration is available) and the common stock has been registered or qualified or deemed to be exempt under the securities laws of the state of residence of the holder of the warrants. Under the terms of the warrant agreement, we have agreed to use our best efforts to meet these conditions and to maintain a current prospectus relating to the common stock issuable upon exercise of the warrants until the expiration of the warrants. However, we cannot assure you that we will be able to do so, and if we do not maintain a current prospectus related to the common stock issuable upon exercise of the warrants (and an exemption from registration is not available), holders will be unable to exercise their warrants and we will not be required to net cash settle any such warrant exercise. If we are unable to issue the shares upon exercise of the warrants by an investor because there is no current prospectus relating to the common stock issuable upon exercise of the warrant (and an exemption from registration is not available) or the common stock has not been registered or qualified or deemed to be exempt under the securities laws of the state of residence of the holder of the warrants, the warrants will not expire until ten days after the date we are first able to issue the shares. Nevertheless, because an investor may not be able to exercise the warrants at the most advantageous time, the warrants held by an investor may have no value, the market for such warrants may be limited and such warrants may expire worthless.

#### Risks Associated with Our Proposed Reverse Stock Split

A majority of our stockholders have approved a proposal to authorize our board of directors to effect a reverse stock split of our common stock. There are risks associated with a reverse stock split, if it is effected.

On December 16, 2013, a majority of our stockholders approved a proposal to effect a reverse stock split of our issued and outstanding common stock, if our board, in its discretion determines to effect a reverse stock split, by a ratio of not less than 1-for-4 and not more than 1-for-16 at any time within 12 months after the date of the mailing of the information statement, with the exact ratio to be set at a whole number within this range as determined by the board in its sole discretion, referred to as the reverse stock split. The reverse stock split further authorizes the board, in its sole discretion to reduce the number of shares of common stock authorized in our certificate of incorporation.

We intend to effect the reverse stock split prior to the consummation of this offering; however, there are no assurances that the reverse stock split will be implemented. If the reverse stock split is effected, there are certain risks associated with the reverse stock split, including the following:

If the board does not reduce the number of authorized shares of common stock in the same proportion as the reverse split, we would have additional authorized shares of common stock that the board could issue in future without stockholder approval, and such additional shares could be issued, among other purposes, in financing transactions or to resist or frustrate a third-party transaction that is favored by a majority of the independent stockholders. This could have an anti-takeover effect, in that additional shares could be issued, within the limits imposed by applicable law, in one or more transactions that could make a change in control or takeover of us more difficult.

There can be no assurance that the reverse stock split, if completed, will achieve the benefits that we hope it will achieve. The total market capitalization of our common stock and the company after the reverse stock split may be lower than the total market capitalization before the reverse stock split.

We intend to effect a reverse stock split of our outstanding common stock prior to this offering. However, the reverse stock split may not increase our stock price sufficiently and we may not be able to list our common stock on the Nasdaq Capital Market, in which case this offering may not be completed.

We expect that the reverse stock split of our outstanding common stock will increase the market price of our common stock so that we will be able to meet the minimum bid price requirement of the Listing Rules of the Nasdaq Capital Market. However, the effect of a reverse stock split upon the market price of our common stock cannot be predicted with certainty, and the results of reverse stock splits by companies in similar circumstances have been varied. It is possible that the market price of our common stock following the reverse stock split will not increase sufficiently for us to be in compliance with the minimum bid price requirement. If we are unable to meet the minimum bid price requirement, we may be unable to list our shares on the Nasdaq Capital Market, in which case this offering may not be completed.

Even if the reverse stock split achieves the requisite increase in the market price of our common stock, we cannot assure you that we will be able to continue to comply with the minimum bid price requirement of the Nasdaq Capital Market.

Even if the reverse stock split achieves the requisite increase in the market price of our common stock to be in compliance with the minimum bid price of the Nasdaq Capital Market, there can be no assurance that the market price of our common stock following the reverse stock split will remain at the level required for continuing compliance with that requirement. It is not uncommon for the market price of a company's common stock to decline in the period following a reverse stock split. If the market price of our common stock declines following the effectuation of the reverse stock split, the percentage decline may be greater than would occur in the absence of a reverse stock split. In any event, other factors unrelated to the number of shares of our common stock outstanding, such as negative financial or operational results, could adversely affect the market price of our common stock and jeopardize our ability to meet or maintain the Nasdaq Capital Market's minimum bid price requirement. In addition to specific listing and maintenance standards, the Nasdaq Capital Market has broad discretionary authority over the initial and continued listing of securities, which it could exercise with respect to the listing of our common stock.

Even if the reverse stock split increases the market price of our common stock, there can be no assurance that we will be able to comply with other continued listing standards of the Nasdaq Capital Market.

Even if the market price of our common stock increases sufficiently so that we comply with the minimum bid price requirement, we cannot assure you that we will be able to comply with the other standards that we are required to meet in order to maintain a listing of our common stock on the Nasdaq Capital Market. Our failure to meet these requirements may result in our common stock being delisted from the Nasdaq Capital Market, irrespective of our compliance with the minimum bid price requirement.

The reverse stock split may decrease the liquidity of the shares of our common stock.

The liquidity of the shares of our common stock may be affected adversely by the reverse stock split given the reduced number of shares that will be outstanding following the reverse stock split, especially if the market price of our common stock does not increase as a result of the reverse stock split. In addition, the reverse stock split may increase the number of stockholders who own odd lots of our common stock, creating the potential for such stockholders to experience an increase in the cost of selling their shares and greater difficulty effecting such sales.

Following the reverse stock split, the resulting market price of our common stock may not attract new investors, including institutional investors, and may not satisfy the investing requirements of those investors. Consequently, the trading liquidity of our common stock may not improve.

Although we believe that a higher market price of our common stock may help generate greater or broader investor interest, there can be no assurance that the reverse stock split will result in a share price that will attract new investors, including institutional investors. In addition, there can be no assurance that the market price of our common stock will satisfy the investing requirements of those investors. As a result, the trading liquidity of our common stock may not necessarily improve.

## FORWARD-LOOKING STATEMENTS

This prospectus contains “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements involve a number of risks and uncertainties. We caution readers that any forward-looking statement is not a guarantee of future performance and that actual results could differ materially from those contained in the forward-looking statement. These statements are based on current expectations of future events. Such statements include, but are not limited to, statements about future financial and operating results, plans, objectives, expectations and intentions, costs and expenses, interest rates, outcome of contingencies, financial condition, results of operations, liquidity, business strategies, cost savings, objectives of management and other statements that are not historical facts. You can find many of these statements by looking for words like “believes,” “expects,” “anticipates,” “estimates,” “may,” “should,” “will,” “could,” “plan,” “intend,” or similar expressions in this prospectus. We intend that such forward-looking statements be subject to the safe harbors created thereby. Examples of these forward-looking statements include, but are not limited to:

- anticipated regulatory filings and requirements;
- timing and amount of future contractual payments, product revenue and operating expenses;
- market acceptance of our products and the estimated potential size of these markets; and
- our anticipated future capital requirements and the terms of any capital financing agreements.

These forward-looking statements are based on the current beliefs and expectations of our management and are subject to significant risks and uncertainties. If underlying assumptions prove inaccurate or unknown risks or uncertainties materialize, actual results may differ materially from current expectations and projections. Factors that might cause such a difference include those discussed under “Risk Factors,” as well as those discussed elsewhere in the prospectus.

You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this prospectus.

All subsequent written or oral forward-looking statements attributable to us or any person acting on our behalf are expressly qualified in their entirety by the cautionary statements contained or referred to in this section. We do not undertake any obligation to release publicly any revisions to these forward-looking statements to reflect events or circumstances after the date of this prospectus or to reflect the occurrence of unanticipated events, except as may be required under applicable U.S. securities law. If we do update one or more forward-looking statements, no inference should be drawn that we will make additional updates with respect to those or other forward-looking statements.

## USE OF PROCEEDS

We estimate that the net proceeds from our sale of units in this offering, assuming a public offering price of \$[ ] per unit and all units are sold, after deducting underwriting discounts and estimated offering expenses payable by us, will be approximately \$[ ] million. This amount does not include the proceeds which we may receive in connection with the exercise of the warrants. We cannot predict when or if the warrants will be exercised, and it is possible that the warrants may expire and never be exercised. The offering does not specify any minimum sale of any specific number of units and, as a result, the net proceeds actually received by us may be considerably less than the estimated net proceeds above.

We intend to use the net proceeds from this offering for product development and general corporate purposes, including working capital and potential acquisitions.

We will have broad discretion over the manner in which the net proceeds of the offering will be applied, and we may not use these proceeds in a manner desired by our shareholders. Although we have no present intention of doing so, future events may require us to reallocate the offering proceeds.

## PRICE RANGE OF COMMON STOCK

Our common stock is traded on the OTCQB under the ticker symbol “BLFS.” There is currently no public trading market for our warrants.

Our stockholders have authorized our board of directors to approve the reverse stock split in a range of not less than 1-for-4 and not more than 1-for-16. The share and per share information in the table below does not reflect the reverse stock split (which we intend to complete prior to the consummation of the offering).

The following table sets forth the range of high and low quarterly closing sales prices of our common stock for the periods indicated:

|   | High   | Low    |
|---|--------|--------|
| Year ended December 31, 2013            |        |        |
| 4th Quarter (through December 13, 2013) | \$1.40 | \$0.58 |
| 3rd Quarter                             | 0.87   | 0.36   |
| 2nd Quarter                             | 0.41   | 0.29   |
| 1st Quarter                             | 0.42   | 0.25   |
| Year ended December 31, 2012            |        |        |
| 4th Quarter                             | \$0.45 | \$0.14 |
| 3rd Quarter                             | 0.17   | 0.07   |
| 2nd Quarter                             | 0.12   | 0.07   |
| 1st Quarter                             | 0.12   | 0.04   |
| Year ended December 31, 2011            |        |        |
| 4th Quarter                             | \$0.10 | \$0.02 |
| 3rd Quarter                             | 0.09   | 0.02   |
| 2nd Quarter                             | 0.10   | 0.06   |
| 1st Quarter                             | 0.11   | 0.06   |



The closing price per share for our common stock on December 13, 2013 as reported by the OTCQB was \$0.59.

## CAPITALIZATION

The following table sets forth our: (i) cash and cash equivalents; (ii) total assets; (iii) promissory notes payable (iv) components of shareholders' equity (deficiency); (v) total shareholders' equity (deficiency); and (vi) total liabilities and shareholders' equity (deficiency) as of September 30, 2013:

on an actual basis; and  
 on a pro forma as adjusted basis to reflect (i) the sale by us of [ ] units in this offering, based on an assumed initial public offering price of \$[ ] per unit; (ii) the deduction of estimated placement agent fees, commissions and advisory fees and estimated offering expenses payable by us, (iii) the 1-for-[ ] reverse stock split implemented on [ ], 2014 and (iv) the issuance of [ ] units to the noteholders in exchange for the conversion of \$10.6 million principal amount of outstanding promissory notes and accrued and unpaid interest of \$[ ] through the assumed conversion date of [ ], 2014.

You should read this table together with the section of this prospectus entitled "Management's Discussion and Analysis of Financial Condition and Results of Operation", as well as our financial statements and related notes and the other financial information, appearing elsewhere in this prospectus.

|  | September 30, 2013 |                       |
|--|--------------------|-----------------------|
|  | Actual             | Pro Forma as Adjusted |
| Cash and cash equivalents  | \$ 79,287          | \$ [ ]                |
| Total assets   | \$ 3,207,024       | \$ [ ]                |
| Promissory notes payable, related parties  | \$ 10,603,127      | \$ -                  |
| Shareholders' equity (deficiency):   |                    |                       |
| Common stock, \$0.001 par value; 150,000,000 shares authorized; 70,414,877 and [ ] shares issued and outstanding at September 30, 2013 | 70,415             |                       |
| Additional paid-in capital   | 43,480,884         | [ ]                   |
| Accumulated deficit  | (56,410,669)       | [ ]                   |
| Total shareholders' equity (deficiency)  | (12,859,370)       | [ ]                   |
| Total liabilities and shareholders' equity (deficiency)  | \$ 3,207,024       | [ ]                   |

## DILUTION

The difference between the public offering price per share, assuming no value is attributed to the warrants included in the units we are offering by this prospectus, and the pro forma net tangible book value per share after this offering constitutes the dilution to investors in this offering. Such calculation does not reflect any dilution associated with the sale and exercise of warrants. Net tangible book value per share represents the amount of our total tangible assets less total liabilities, divided by the number of shares of common stock outstanding as of September 30, 2013.

Our historical net tangible book value as of September 30, 2013 was \$[ ], or \$[ ] per share. After giving effect to (i) the sale of our common stock in this offering at an assumed public offering price of \$[ ] per share, (ii) the deduction of estimated placement agent fees and commissions and estimated offering expenses payable by us, (iii) the 1-for-[ ] reverse stock-split and (iv) the issuance of [ ] units to the noteholders in exchange for the conversion of \$10.6 million principal amount of outstanding promissory notes and interest of \$[ ] through the assumed conversion date of [ ], 2014, our adjusted net tangible book value at September 30, 2013 would have been \$[ ] million or \$[ ] per share. This represents an immediate increase in net tangible book value per share of \$[ ] to existing stockholders and dilution in net tangible book value per share of \$[ ] to new investors who purchase units in the offering.

The following table illustrates this per share dilution to new investors, giving effect to our 1-for-[ ] reverse stock split and issuance of units to the noteholders pursuant to the note conversion agreements:

|   |    |     |
|---|----|-----|
| Assumed public offering price per unit                                      | \$ | [ ] |
| Historical net tangible book value per share as of September 30, 2013       | \$ | [ ] |
| Increase in net tangible book value per share attributable to new investors | \$ | [ ] |
| Adjusted net tangible book value per share                                  | \$ | [ ] |
| Dilution per share to new investors   | \$ | [ ] |

The following table sets forth, on the as adjusted basis described above, as of September 30, 2013, the difference between the number of shares purchased from us, the total consideration paid, and the average price per share paid by the existing stockholders and by investors purchasing shares in this offering, before deducting estimated placement agent fees and commissions and estimated offering expenses.

|                       | Shares Purchased |         | Total Consideration |         | Average Price Per Share |
|-----------------------|------------------|---------|---------------------|---------|-------------------------|
|                       | Number           | Percent | Amount              | Percent |                         |
| Existing stockholders | [ ]              | [ ] %   | [ ] \$              | [ ] %   | [ ]                     |
| New investors         | [ ]              | [ ] %   | [ ]                 | [ ] %   | [ ]                     |
| Total                 | [ ]              | 100 %   | [ ] \$              | 100 %   | [ ]                     |

The discussions and tables above are based on 69,679,854 shares of common stock outstanding as of September 30, 2013 after giving effect to the issuance of common stock comprising a portion of the units sold in the offering. This number excludes [ ] shares subject to warrants and options outstanding as of September 30, 2013 (including any warrants comprising a portion of the units sold in the offering), but gives effect to the 1-for-[ ] reverse stock-split and the issuance of [ ] units to the noteholders in exchange for the conversion of \$10.6 million principal amount of outstanding promissory notes and interest of \$[ ] through the assumed conversion date of [ ], 2014.

#### DIVIDEND POLICY

We have never paid cash dividends on our common stock and do not anticipate that any cash dividends will be paid in the foreseeable future. Our future dividend policy will be determined from time to time by our board.

#### HOLDERS OF OUR COMMON STOCK

As of December 16, 2013 we had 2,719 shareholders of record of our common stock and 70,414,877 shares of common stock outstanding.

## MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND OPERATING RESULTS

### General

You should read the following discussion and analysis of our financial condition and results of operations together with our financial statements, including the related notes, set forth elsewhere in this prospectus. This discussion and analysis contains forward-looking statements that involve risks, uncertainties and assumptions. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of many factors, including, but not limited to, those set forth under "Risk Factors" and elsewhere in this prospectus.

Our financial statements are stated in United States dollars and are prepared in accordance with United States generally accepted accounting principles.

### Recent Accounting Pronouncements

There have been no new accounting pronouncements made effective during the nine month period ended September 30, 2013 or not yet effective, that are of significance, or potential significance, to us.

### Recent Developments

On December 16, 2013, the holders of a majority of our outstanding common stock approved a proposal to authorize our board, in its discretion, to effect a reverse stock split by a ratio of not less than 1-for-4 and not more than 1-for-16, with a possible reduction in the number of shares of common stock that are authorized in our certificate of incorporation. The reverse stock split will not be effective unless and until the board files an amendment to our certificate of incorporation, which must occur prior to the first anniversary of the mailing date of the information statement, subject to the restrictions imposed by Rule 14c-2 of the Exchange Act. It is our intent to effect the reverse stock split prior to the closing of this offering.

On December 16, 2013, we entered into a note conversion agreement with each of Thomas Girschweiler, a director and stockholder of the Company, and Walter Villiger, an affiliate of the Company. The noteholders hold, as of December 16, 2013, an aggregate \$10.6 million principal amount of outstanding promissory notes and \$3.5 million of accrued interest under facility. Pursuant to the note conversion agreements, the noteholders have agreed to convert on a private placement basis the outstanding indebtedness, including accrued interest thereon through the closing date, into units on substantially similar terms as the offering. Such conversion will occur concurrently with the closing of the offering. Cash will be paid in lieu of any fractional units that would otherwise be issuable.

On December 16, 2013, we filed an application to list our common stock on the Nasdaq Capital Market. We cannot assure you that we will be able to comply with the standards necessary in order to obtain a listing of our common stock on the Nasdaq Capital Market.

### Results of Operations

Comparison of Results of Operations for the Three and Nine Month Periods Ended September 30, 2013 and 2012

Percentage comparisons have been omitted within the following table where they are not considered meaningful.

Revenue and Gross Margin

Three Month Period Ended

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|                                 | September 30, |            | % Change |   |
|---------------------------------|---------------|------------|----------|---|
|                                 | 2013          | 2012       |          |   |
| Revenue:                        |               |            |          |   |
| Core product sales              | \$ 1,002,086  | \$ 620,627 | 61       | % |
| Contract manufacturing services | 1,168,405     | 1,055,853  | 15       | % |
| Licensing revenue               | —             | 5,000      |          |   |
| Total revenue                   | 2,170,491     | 1,681,480  | 29       | % |
| Cost of sales                   | 1,281,634     | 1,086,031  | 18       | % |
| Gross profit                    | \$ 888,857    | \$ 595,449 | 49       | % |
| Gross margin %                  | 41.0          | %          | 35.4     | % |

|                                 | Nine Month Period Ended |             | % Change |   |
|---------------------------------|-------------------------|-------------|----------|---|
|                                 | September 30,           |             |          |   |
|                                 | 2013                    | 2012        |          |   |
| Revenue:                        |                         |             |          |   |
| Core product sales              | \$2,713,787             | \$2,202,634 | 23       | % |
| Contract manufacturing services | 3,337,567               | 1,397,136   | 146      | % |
| Licensing revenue               | 609,167                 | 15,000      |          |   |
| Total revenue                   | 6,660,521               | 3,614,770   | 84       | % |
| Cost of sales                   | 3,817,737               | 2,073,909   | 84       | % |
| Gross profit                    | \$2,842,784             | \$1,540,861 | 84       | % |
| Gross margin %                  | 42.7                    | % 42.6      |          | % |

**Core Product Sales.** Our core products are sold through both direct and indirect channels. Sales to our core customers in the three and nine months ended September 30, 2013 increased compared to the same periods in 2012 due primarily to higher direct product sales to the regenerative medicine market segment. Sales to the regenerative medicine segment tend to be uneven due to the pace of product evaluation, adoption, and clinical trials.

**Contract Manufacturing Services.** Contract manufacturing services in 2013 represents sales of product to one significant customer. Contract manufacturing services revenue increased in the three and nine months ended September 30, 2013 due to the ramp up of business after commencing in the second quarter of 2012.

**Licensing Revenue.** During the first quarter of 2013, we negotiated a new intellectual property license agreement that provides one customer with limited access to our intellectual property under certain conditions. This customer paid upfront fees for the specific rights and there are no future performance obligations. The upfront fee of \$500,000 was recognized as revenue during the quarter and \$109,167 in deferred revenue associated with this customer was recognized as all future performance obligations associated with the previous license agreements were cancelled with the agreement signed in the first quarter of 2013.

**Cost of Sales.** Cost of sales consists of raw materials, labor and overhead expenses. Cost of sales in the three and nine months ended September 30, 2013 increased compared to the same periods in 2012 due primarily to the significant increase in sales to our contract manufacturing services customer.

**Gross Margin.** Gross margin as a percentage of revenue increased in the three months ended September 30, 2013 compared to the same period in 2012 due primarily to the significant increase in core product sales which has a higher gross margin, compared to contract manufacturing services compared to 2012. Gross margin as a percent of revenue was relatively flat for the nine months ended September 30, 2013 compared to the same period in 2012. Gross margin in the nine months ended September 30, 2013 includes the impact of recognition of significant license revenue during the quarter with no associated costs. In addition, gross margin increased during the nine months ended September 30, 2013 due to the increase in core product sales, offset by increased contract manufacturing services, which has a higher cost of sales, compared to core product sales.

## Operating Expenses

Our operating expenses for the three and nine month periods ended September 30, 2013 and 2012 were:

|                            | Three Month Period Ended<br>September 30, |            |    | % Change |
|----------------------------|---|------------|----|----------|
|                            | 2013                                      | 2012       |    |          |
| Operating Expenses:        |   |            |    |          |
| Research and development   | \$ 160,528                                | \$ 110,689 | 45 | %        |
| Sales and marketing        | 208,080                                   | 145,735    | 43 | %        |
| General and administrative | 630,342                                   | 487,733    | 29 | %        |
| Operating Expenses         | 998,950                                   | 744,157    | 34 | %        |
| % of revenue               | 46  | % 44       | %  |          |

|                            | Nine Month Period Ended<br>September 30, |            |    | % Change |
|----------------------------|--|------------|----|----------|
|                            | 2013                                     | 2012       |    |          |
| Operating Expenses:        |  |            |    |          |
| Research and development   | \$ 361,404                               | \$ 353,837 | 2  | %        |
| Sales and marketing        | 625,600                                  | 379,774    | 65 | %        |
| General and administrative | 1,856,386                                | 1,441,852  | 29 | %        |
| Operating Expenses         | 2,843,390                                | 2,175,463  | 31 | %        |
| % of revenue               | 43                                       | % 60       | %  |          |

**Research and Development.** Research and Development expenses consist primarily of salaries and other personnel expenses, consulting and other outside services, laboratory supplies, and other costs. We expense all R&D costs as incurred. R&D expenses for the three and nine months ended September 30, 2013 increased compared to the same periods in 2012 primarily due to spending on consulting and supplies related to the development of new products.

**Sales and Marketing.** Sales and marketing expenses consist primarily of salaries and other personnel-related expenses, consulting, trade shows and advertising. The significant increase in the three and nine months ended September 30, 2013 compared to the same periods in 2012 was due to primarily increased personnel costs which resulted from adding team members to this team, primarily in the second quarter of 2012.

**General and Administrative Expenses.** General and administrative expenses consist primarily of salaries and other personnel-related expenses, non-cash stock-based compensation for administrative personnel and non-employee members of the board, professional fees, such as accounting and legal, corporate insurance and facilities costs. The increase in general and administrative expenses in the three and nine months ended September 30, 2013 compared to the same periods in 2012 was due primarily to higher corporate costs, including higher director's fees, higher legal fees, higher consulting fees for investor relations, information technology and shareholder communication.

## Other Income (Expenses)

**Other Income.** Other income for the nine months ended September 30, 2012 is primarily the result of \$87,215 related to inventory received in a non-monetary transaction during the first quarter of 2012 and gains on the sale of equipment.



Interest Expense. The increase in interest expense in the first nine months of 2013 compared to the same period in 2012 is due to a higher debt balance related to additional borrowings of \$475,000 in the first half 2012.

Amortization of Deferred Financing Costs. Amortization of deferred financing costs represents the cost of warrants issued which are being amortized over the life of the debt.

## Comparison of Results of Operations for the Fiscal Years Ended December 31, 2012 and 2011

Percentage comparisons have been omitted within the following table where they are not considered meaningful.

## Revenue and Gross Margin

|                                 | Year Ended<br>December 31, |         | % Change |   |
|---------------------------------|----------------------------|---------|----------|---|
|                                 | 2012                       | 2011    |          |   |
| (dollars in thousands)          |                            |         |          |   |
| Revenue:                        |                            |         |          |   |
| Product revenue                 |                            |         |          |   |
| Direct                          | \$2,291                    | \$1,893 | 21       | % |
| Indirect                        | 728                        | 565     | 29       | % |
| Core product sales              | 3,019                      | 2,458   | 23       | % |
| Contract manufacturing services | 2,624                      | 281     | 834      | % |
| Total product sales             | 5,643                      | 2,739   | 106      | % |
| Licensing revenue               | 20                         | 20      | —        |   |
| Total revenue                   | 5,663                      | 2,759   | 105      | % |
| Cost of sales                   | 3,371                      | 1,356   | 149      | % |
| Gross profit                    | \$2,292                    | \$1,403 | 63       | % |
| Gross margin %                  | 40.5                       | % 50.9  | %        |   |

**Core Product Sales.** Our core products are sold through both direct and indirect channels to the customers in the biobanking, drug discovery, and regenerative medicine markets. Sales to our direct customers in 2012 increased compared to 2011 due primarily to higher sales to existing customers, sales to new customers, higher selling prices in 2012 compared to 2011 for our family of core products, and the addition of three team members engaged in product sales.

**Contract Manufacturing Services.** To leverage our capacity and the market opportunity for contract manufacturing services, we are manufacturing products for third parties pursuant to contractual arrangements. In 2012, contract manufacturing services primarily represented shipments to one significant customer, a public company engaged in the development and marketing of organ preservation solutions and devices. This customer accounted for 46% of total revenue in 2012 and \$1.2 million, or 60% of total revenue in the fourth quarter of 2012.

**Cost of Product Sales.** Cost of sales consists of raw materials, labor and overhead expenses. Cost of sales in 2012 increased compared to 2011 due to the significant increase in sales of both core and contract manufacturing products.

**Gross Profit and Gross Margin.** Gross profit increased in 2012 compared to 2011 due to the significant increase in sales of both core and contract manufacturing products. Gross margin as a percentage of revenue decreased significantly in 2012 compared to 2011 due primarily to the increase in contract manufacturing product sales, which has a higher cost of sales, compared to core product sales. Additionally, gross margin declined due to additional personnel and other costs included in cost of goods sold related to the expansion of our production operations.

**Licensing Revenue.** We have entered into license agreements with one customer that provides this customer with limited access to our intellectual property under certain conditions. This customer paid upfront fees for the specific rights and we recognize license revenue ratably over the term of the agreements.

Revenue Concentration. In 2012, we derived approximately 46% of our product revenue from our relationship with one contract manufacturing customer, which we commenced deliveries to in the second quarter of 2012. Either party may terminate the agreement with this contract manufacturing customer for any reason on six months' notice. No other customer accounted for more than 10% of revenue in 2012. In 2011, no individual customer accounted for more than 10% of sales. Revenue from customers located in foreign countries represented 11% and 13% of total revenue during the years ended December 31, 2012 and 2011, respectively.

## Operating Expenses

Our operating expenses for the years ended December 31, 2012 and 2011 were:

|                            | Year Ended<br>December 31, |       |
|----------------------------|----------------------------|-------|
|                            | 2012                       | 2011  |
| (dollars in thousands)     |                            |       |
| Research and development   | \$464                      | \$516 |
| % of revenue               | 8                          | % 19  |
| Sales and marketing        | 619                        | 267   |
| % of revenue               | 11                         | % 10  |
| General and administrative | 2,152                      | 1,829 |
| % of revenue               | 38                         | % 66  |
| Total operating expenses   | 3,235                      | 2,613 |
| % of revenue               | 57                         | % 95  |

**Research and Development.** Research and Development expenses consist primarily of salaries and other personnel-related expenses, consulting and other outside services, laboratory supplies, and other costs. We expense all research and development costs as incurred. Research and development expenses decreased in 2012 compared to 2011 due primarily to reduced spending with contract research organizations, which accounted for approximately \$25,000 of the variance and lower spending on patent related legal expenses, which accounted for \$45,000 of the difference. This was offset slightly by an increase in personnel related costs.

**Sales and Marketing.** Sales and marketing expenses consist primarily of salaries, trade association sponsorships, and other personnel-related expenses, consulting, trade shows and advertising. The increase in sales and marketing expenses in 2012 compared to 2011 was primarily due to increased personnel costs which resulted from the additional team members on this team which were added in the second quarter of 2012. The additional team members were added to focus on our sales of our core products through both direct sales to customers and through our indirect distribution network.

**General and Administrative Expenses.** General and administrative expenses consist primarily of salaries, bonuses and other personnel-related expenses, non-cash stock-based compensation for administrative personnel and non-employee members of the board of directors, professional fees, such as accounting and legal, corporate insurance and facilities costs. General and administrative expenses were higher in 2012 compared to 2011 due to higher personnel costs in 2012, offset somewhat by a reduction in consulting expenses due to the termination of one consulting agreement in the third quarter of 2011.

## Other Income (Expenses)

**Interest Expense.** The increase in interest expense in 2012 compared to 2011 was due to a higher average debt balance.

**Amortization of Deferred Financing Costs.** Amortization of deferred financing costs represents the cost of warrants issued which are being amortized over the life of the warrants.

## Liquidity

We have been unable to generate sufficient income from operations in order to meet our operating needs and have an accumulated deficit of approximately \$56.4 million as of September 30, 2013. Of this amount, approximately \$18 million has accumulated since our merger in 2002.

We believe our current cash and cash provided by operations will satisfy our working capital requirements, debt obligations and capital expenditures for the foreseeable future. Our future capital requirements and the adequacy of our available funds will depend on many factors, including future profitable operations, debt repayment, and competing technological and market developments.

Our working capital factors, such as inventory turnover and days sales outstanding, fluctuate on a quarterly basis and, on an interim basis during the year, may require an influx of short-term working capital. We will continuously assess the most appropriate method of financing our short and long term operations. While conditions of the credit market at any given time may impact our ability to obtain credit, we believe that we have the ability to raise funds, if needed, through public and private markets.

Future debt repayment or future acquisitions may be financed by a combination of cash on hand, our positive cash flow generation, a revolving credit facility, or an issuance of new debt or stock.

As of September 30, 2013, we had outstanding \$10.6 million principal amount of promissory notes, plus accrued interest of \$3.6 million, due January 11, 2016 under the facilities held by the noteholders, secured by all of our assets. Pursuant to the note conversion agreements, we will issue [ ] units to each of the noteholders in exchange for the conversion of the outstanding promissory notes, including accrued interest thereon through the closing date. However, prior to the conversion, an event of default, including from the failure to observe or comply with any material covenant or condition in the promissory notes could, if not cured or waived, result in the acceleration of our outstanding indebtedness.

As of September 30, 2013, we had cash and cash equivalents of \$79,287, compared to cash and cash equivalents of \$196,478 at December 31, 2012 and \$16,864 at December 31, 2011. At September 30, 2013, we had working capital of \$426,512, compared to working capital of \$262,421 at December 31, 2012 and \$581,159 at December 31, 2011. The increase in our working capital from December 31, 2012 to September 30, 2013 is due primarily to an increase in our accounts receivable, offset by a smaller decrease in accounts payable. The decline in our working capital from December 31, 2011 to December 31, 2012 is due primarily to an increase in our accounts payable related to purchases of materials, which significantly increased in 2012.

### Net Cash Provided By Operating Activities

During the nine months ended September 30, 2013, net cash provided by operating activities was \$67,460 compared to \$686,128 for the nine months ended September 30, 2012. Cash provided by operating activities included an increase in deferred rent related to tenant improvements which were funded by our landlord, offset by payment to the landlord and amortization of deferred rent, of \$88,258 and \$766,082 during the nine months ended September 30, 2013 and 2012, respectively. Cash provided by operating activities also includes the use of cash to fund net losses and changes in operating assets and liabilities, offset by non-cash compensation related to stock options and depreciation.

During the year ended December 31, 2012, net cash provided by operating activities was \$854,934 compared to net cash used by operating activities of \$989,917 for the year ended December 31, 2011. Cash used in operating activities relates primarily to funding net losses and changes in operating assets and liabilities, offset by non-cash compensation related to stock options and depreciation. In 2012, cash provided by operating activities included an increase in

deferred rent of \$901,000 related to lease incentives received from our landlord.

#### Net Cash Used in Investing Activities

Net cash used in investing activities totaled \$235,109 and \$1,170,463 during the nine months ended September 30, 2013 and 2012, respectively. Cash used in investing activities was primarily due to the increase in tenant improvements related to our expanded manufacturing facility and the purchase of equipment.

Net cash used in investing activities totaled \$1,150,320 during the year ended December 31, 2012, and \$91,430 during the year ended December 31, 2011. Cash used in investing activities was due primarily to the increase in tenant improvements related to our expanded manufacturing facility and the purchase of equipment.

### Net Cash Provided by Financing Activities

Net cash provided by financing activities of \$50,458 during the nine months ended September 30, 2013 was the result of proceeds received from warrant and employee stock option exercises. Net cash provided by financing activities of \$475,000 during the nine months ended September 30, 2012, resulted from funding from two existing shareholders under the existing Facilities.

Net cash provided by financing activities was \$475,000 and \$1,095,000 during the years ended December 31, 2012 and 2011, respectively. Cash provided by financing activities resulted from funding from two existing shareholders under the existing Facilities.

As of September 30, 2013 and December 31, 2012, the unused portion of the Facilities was approximately \$900,000.

### Off-Balance Sheet Arrangements

As of September 30, 2013 and December 31, 2012, we did not have any off-balance sheet arrangements.

### Critical Accounting Policies and Significant Judgments and Estimates

The discussion and analysis of our financial condition and results of operations is based on our financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of financial statements requires that we make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements as well as reported revenues and expenses during the reporting periods. On an ongoing basis, we evaluate estimates, including, but not limited to those related to accounts receivable allowances, determination of fair value of share-based compensation, contingencies, income taxes, and expense accruals. We base our estimates on historical experience and on other factors that we believe are 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 may differ materially from these estimates under different assumptions or conditions.

### Share-based Compensation

We account for share-based compensation by estimating the fair value of share-based compensation using the Black-Scholes option pricing model on the date of grant. We utilize assumptions related to stock price volatility, stock option term and forfeiture rates that are based upon both historical factors as well as management's judgment. Non-cash compensation expense is recognized on a straight-line basis over the applicable requisite service period of one to four years, based on the fair value of such share-based awards on the grant date.

### Income Taxes

We follow the asset and liability method of accounting for income taxes. Under this method, deferred tax assets and liabilities are determined based on differences between the financial reporting and tax basis of assets and liabilities and on the expected future tax benefits to be derived from net operating loss carryforwards measured using current tax rates. A valuation allowance is established if it is more likely than not that some portion or all of the deferred tax assets will not be realized. We have not recorded any liabilities for uncertain tax positions or any related interest and penalties. Our tax returns are open to audit for the years ending December 31, 2009 to 2012.





## BUSINESS

We develop, manufacture and market patented hypothermic storage and cryopreservation solutions for cells and tissue. Our product offerings include:

- Patented biopreservation media products for cells, tissues, and organs
- Generic formulations of blood stem cell freezing media products
- Custom product formulation and custom packaging services
- Precision thermal packaging products
- Contract aseptic manufacturing formulation, fill, and finish services of liquid media products

Our proprietary HypoThermosol®, CryoStor®, generic BloodStor® biopreservation media products and precision thermal packaging products are marketed to the biobanking, drug discovery, and regenerative medicine markets, including hospital-based stem cell transplant centers, pharmaceutical companies, cord blood and adult stem cell banks, hair transplant centers, and suppliers of cells to the drug discovery, toxicology testing and diagnostic markets. All of our products are serum-free and protein-free, fully defined, and are manufactured under cGMP using USP/Multicompendial or the highest available grade components.

Our patented biopreservation media products are formulated to reduce preservation-induced, delayed-onset cell damage and death. Our platform enabling technology provides our customers significant shelf life extension of biologic source material and final cell products, and also greatly improved post-preservation cell, tissue, and organ viability and function. We believe that our products have been incorporated into the manufacturing, storage, shipping, freezing, and clinical delivery processes of over 50 clinical trial stage regenerative medicine products and therapies.

The discoveries made by our scientists and consultants relate to how cells, tissues, and organs respond to the stress of hypothermic storage, cryopreservation, and the thawing process. These discoveries enabled the formulation of innovative biopreservation media products that protect biologic material from preservation-related cellular injury, much of which is not apparent immediately after return to normothermic body temperature. Our product formulations have demonstrated notable reduction in apoptotic (programmed) and necrotic (pathologic) cell death mechanisms and are enabling the clinical and commercial development of dozens of innovative regenerative medicine products.

We were incorporated in Delaware in 1987 under the name Trans Time Medical Products, Inc. In 2002, the Company, then known as Cryomedical Sciences, Inc., and engaged in manufacturing and marketing cryosurgical products, completed a merger with our wholly-owned subsidiary, BioLife Solutions, Inc., which was engaged as a life sciences tools provider. Following the merger, we changed our name to BioLife Solutions, Inc. We do not have any subsidiaries.

Our principal executive offices are located at 3303 Monte Villa Parkway, Suite 310, Bothell, Washington 98021 and the telephone number is (425) 402-1400. Information about us is available on our internet website [www.biolifesolutions.com](http://www.biolifesolutions.com). The information contained on our website or that can be accessed through our website does not constitute part of this prospectus and is not incorporated in any manner into this prospectus.

### Mission

We strive to be the leading provider of biopreservation tools for cells, tissues, and organs; to facilitate basic and applied research and commercialization of new therapies by maintaining the health and function of biologic source material and finished products during the preservation process.

### Technological Overview

Stability (shelf life) and functional recovery are crucial aspects of academic research and clinical practice in the biopreservation of biologic-based source material, intermediate derivatives, and isolated/derived/expanded cellular products. Limited stability is especially critical in the regenerative medicine field, where harvested cells and tissue, if not maintained appropriately at normothermic body temperature (98.6°F/37°C), or stored in an effective preservation medium, will lose viability over time. Chilling (hypothermia) is used to reduce metabolism and delay degradation of harvested cells, tissues, and organs. However, subjecting biologic material to hypothermic environments produces mixed results. Although cooling successfully reduces metabolism (i.e., lowers demand for energy), various levels of cellular damage and death occur when using suboptimal methods. To solve this problem, transplant surgeons, for example, flush the donor tissue with an engineered preservation solution designed to provide short-term biopreservation support after removal of the organ from the donor and during transportation. Companies and hospital cell transplantation centers engaged in regenerative medicine product development also maintain the original and derived cellular material in a solution before and after cell manipulation and processing, and during necessary transportation up to the point of infusion/injection into the patient. Traditional support solutions range from simple "balanced salt" (electrolyte) formulations to complex mixtures of electrolytes, energy substrates such as sugars, osmotic buffering agents and antibiotics. The limited stability which results from these traditional biopreservation media formulations is a significant shortcoming that our optimized products address with great success.

Our scientific research activities over the last 20 years enabled a detailed understanding of the molecular basis for the hypothermic and cryogenic (low-temperature induced) damage/destruction of cells through apoptosis and necrosis. This research led directly to the development of our engineered and patented HypoThermosol® and CryoStor® technologies. Our products are specifically formulated to:

- Minimize cell and tissue swelling
- Reduce free radical levels upon formation
- Maintain appropriate low temperature ionic balances
- Provide regenerative, high energy substrates to stimulate recovery upon warming
- Avoid the creation of an acidic state (acidosis)
- Inhibit the onset of apoptosis and necrosis

A key feature of our products is their “fully-defined” nature. All of our cGMP products are serum-free, protein-free and are formulated and filled using aseptic processing, utilizing USP/Multicompensial grade or highest quality available synthetic components. All of these features benefit prospective customers by facilitating the qualification process required to incorporate our products into their manufacturing regulatory filings and patient delivery processes.

The results of independent testing demonstrate that our patented HypoThermosol® and CryoStor® biopreservation media products significantly extend shelf-life and improve cell and tissue post-thaw viability and function, which may, in turn, improve clinical and commercial outcomes for existing and new cell and tissue therapy applications. Our products have demonstrated improved biopreservation outcomes for a broad array of cell and tissue types including stem cells isolated from umbilical and peripheral blood, bone marrow, adipose tissue, liver, tendon, and umbilical cord tissue, and also for induced pluripotent stem cells including hepatocytes, endothelial cells, and neuronal cells, hepatocytes isolated from non-transplantable livers, chondrocytes isolated from cartilage, and dermal fibroblasts and muscle cells isolated from tissue biopsies.

Our proprietary HypoThermosol® technology is optimized based on low temperature cellular and molecular biology principles. Competing biopreservation media products are often formulated with simple isotonic media cocktails, animal serum, potentially a single sugar or human protein, and in the case of cryopreservation media, a single permeating cryoprotectant such as dimethyl sulfoxide (“DMSO”). A key differentiator of our proprietary formulations is the engineered optimization of the key ionic component concentrations for low temperature environments, as opposed to normothermic body temperature around 37°C, as found in culture media or saline-based isotonic formulas. Furthermore, our CryoStor® formulations incorporate multiple permeating and non-permeating cryoprotectant agents, which allow for multiple mechanisms of cryogenic protection and reduces the dependence on a single cryoprotectant.

Our research and intellectual property related to the cellular stress response to cold temperature also led to discoveries in the field of cryosurgery. Specifically, through contracted research and completion of the specific aims of two National Institutes of Health (“NIH”) Small Business Innovative Research (“SBIR”) grants awarded to Cryomedical Sciences, our predecessor, and to BioLife, we determined via in vitro experiments on cancer cells, that the combination of chemotherapy and cryosurgery was more effective than cryosurgery alone. This intellectual property was excluded from the asset sold to Endocare in 2002, and has been the subject of extensive publications.

## Products

### HypoThermosol®

HypoThermosol® biopreservation media is a novel, engineered, optimized hypothermic storage and shipping media product.

Serum-free, protein-free HypoThermosol® is designed to provide maximum storage and shipping stability for biologics at 2°-8°C.

This proprietary, optimized formulation mitigates temperature-induced molecular cell stress responses that occur during chilling and re-warming of biologics, intermediate products, and final cell products intended for research and clinical applications.

Similar to our companion freeze media CryoStor®, HypoThermosol® includes components that scavenge free radicals, provide pH buffering, oncotic/osmotic support, energy substrates, and ionic concentrations that balance the intracellular state at low temperatures.

Across a broad spectrum of cell and tissue types, intracellular-like HypoThermosol® has proven more effective in reducing post-preservation necrosis and apoptosis as compared to commercial and home-brew isotonic and extracellular formulations. This results in greatly extended shelf life and improved post-preservation viability.

HypoThermosol is manufactured under cGMP and is tested to USP <71> Sterility and USP <85> Endotoxin standards.

### HypoThermosol® FRS

In addition to providing intracellular-like balance to cells and tissues at low temperatures, this solution has been formulated to decrease the free radical accumulation in cells undergoing prolonged hypothermic preservation. Numerous investigators have shown that an increase in free radicals can lead to either necrosis (pathological cell death) or apoptosis (programmed cell death) in clinical conditions. HypoThermosol® FRS is very effective at extending the shelf life and improving the post-preservation viability and function of numerous cell and tissue types.

### PrepaStor®

PrepaStor®, formerly branded as HypoThermosol® PURGE is a flush solution specifically designed for use during the transitions from normothermic to mild hypothermic conditions (37°C to 20°C) to rinse culture media and native fluids from tissue and whole organ systems prior to suspension in a preservation solution. PrepaStor® is also used to support the transition from hypothermic to normothermic temperatures following the preservation interval.

## CryoStor®

CryoStor® cryopreservation freeze media products have been designed to mitigate temperature-induced molecular cell stress responses during freezing and thawing. CryoStor® proprietary freeze media products are intended for cryopreservation of biologics at subzero temperatures (most often utilized within -80 to -196°C) and are based upon the novel HypoThermosol® platform. All CryoStor® products are pre-formulated with USP/EP grade DMSO, a permeating cryoprotective agent which helps mitigate damage from the formation of intracellular and extracellular ice.

Across a broad spectrum of cell types, CryoStor® products have proven more effective in reducing post-preservation necrosis and apoptosis as compared to commercial and home-brew isotonic and extracellular formulations without the addition of serum or protein. This enables improved post-thaw cell yield, viability, and recovery.

CryoStor® is manufactured under cGMP and is tested to USP <71> Sterility and USP <85> Endotoxin standards.

CryoStor® is offered in several packages and pre-formulated with DMSO in final concentrations of 2%, 5%, and 10%.

### CryoStor® CS2

Pre-formulated with 2% DMSO, in some cell types, CryoStor® CS2 has demonstrated biopreservation efficacy at or above the levels of competing commercial and in-house formulated freeze media, even in the presence of significantly reduced levels of DMSO.

### CryoStor® CS5

Pre-formulated with 5% DMSO, CryoStor® CS5 routinely outperforms competing freeze media containing 10% DMSO and is recommended for cryopreservation of most cell types.

### CryoStor® CS10

Pre-formulated with 10% DMSO, CryoStor® CS10 has demonstrated remarkable biopreservation efficacy in numerous cell types, including sensitive cells such as hepatocytes. CryoStor® CS10 has demonstrated improved post-thaw cell survival and function in specific cell systems that may be more sensitive to cryopreservation-induced cell damage and death. This variant has also been adopted by customers with cell processing methods that might entail some dilution of the cryopreservation media.

## BloodStor®

BloodStor® freeze media is specifically designed for cryopreservation of cells isolated from umbilical cord blood, peripheral blood, and bone marrow where the processing methods require addition of high concentration DMSO.

BloodStor® 55-5 is pre-formulated with 55% (w/v) DMSO USP/EP, 5% (w/v) Dextran-40 USP/EP, and water for injection (WFI) quality water. BloodStor® 100 contains 100% (w/v) DMSO USP/EP.

BloodStor® is manufactured under cGMP and tested to USP <71> Sterility and USP <85> Endotoxin standards.

## Precision Thermal Packaging Products

On a worldwide exclusive basis, we distribute a portfolio of precision thermal packaging products to the regenerative medicine and stem cell markets. The products are designed and manufactured by SAVSU Technologies, Inc., a wholly owned subsidiary of Barson Corporation. We believe there is a significant unmet need for improved temperature stability during the transportation and shipping of cells and tissues, which is not currently met by the commercially available thermal shippers. Current commercial alternatives range from Styrofoam and EPS “beer cooler” type containers inside a cardboard box, up to and including vacuum panel insulation cartons. These alternatives suffer from reduced performance due to the form factor design and/or materials used. We believe that the design and superinsulating material used in SAVSU thermal shippers, along with the robustness of the products and reusability, will present a very favorable value proposition to the regenerative medicine and stem cell markets.

#### PHD™ 2 – 8 C Shipper

The PHD™ line is designed for the shipment of materials, which must be maintained at 2-8°C and or controlled room temperature (CRT) temperatures and is designed for small volume shipments from single dose to 3 liters in volume. Utilizing our antifreeze technology the PHD™ reduces the risk of freezing of 2-8°C shipments. We believe the improved insulation performance of the PHD™ will also allow for extended shipping periods and thereby give greater product safety assurance. The packout process is completed in minutes, saving labor time.

## CryoQ™ Dry Ice Shipper

The CryoQ™ line is designed for the shipment of small volumes of biomaterials, which need to be shipped at extremely stable deep-frozen temperatures when used with small volumes of dry ice. The CryoQ™ utilizes a Vial Rack system to deliver precision temperature management even after significant sublimation of dry ice has occurred. The Vial Rack system allows for reliable temperature stability even during rigorous shipping conditions. The unique benefit of the Vial Rack and CryoQ design is the ability to maintain uniform temperature around the entire payload volume, providing thermal protection for the biologic payload inside the shipper.

## Market Opportunity

Recent advances in cord blood banking, adult stem cell banking, cell therapy, and tissue engineering have highlighted the significant and unmet need to maintain the stability and shelf life of biologics in the development and commercialization of new regenerative medicine products and therapies. Scarce and fragile source cells or tissues are extracted from a patient, transported to a cell processing and culture laboratory, and then transported back to the clinic for patient infusion or injection. Because this entire process can take months and may involve transportation over long distances, maintenance of cellular viability is of paramount importance.

The Visiongain report "Translational Regenerative Medicine: Market Prospects 2012-2022" values the regenerative medicine market at \$1.4 billion in 2012, and anticipates the market growing to \$10 billion by 2020. More recently, in March 2013, TriMarkPublications forecasted that the regenerative medicine market will catapult to over \$35 billion by 2019. BioLife's addressable portion of the market is the demand for reagents used to store, ship and freeze source material and manufactured doses of cell-based products and therapies.

Our target markets include:

### Regenerative Medicine

Our proprietary HypoThermosol® and CryoStor® biopreservation media products are used by customers to store, transport, and freeze biologic source material and cell-or tissue-based final products. Our scientific discoveries related to preservation-induced cell stress enabled the development and commercialization of a new class of patented biopreservation media formulations that have demonstrated broad and significant ability to extend shelf life/stability and improve post-preservation viability and function of numerous biologics. A number of regenerative medicine products may be non-frozen with shelf life less than 24 hours. This limited shelf life would constrain clinical distribution and create manufacturing limitations for the products. Our products specifically address this need by extending shelf life.

This market is comprised of nearly 700 commercial companies and numerous other hospital-based transplant centers developing and delivering cellular therapies such as stem cells isolated from bone marrow, peripheral and umbilical cord blood as well as engineered tissue-based products.

MedMarket Diligence, LLC, estimates that the current worldwide market for regenerative medicine products and services is growing at 20 percent annually. We expect pre-formulated biopreservation media products such as our HypoThermosol® and CryoStor® to continue to displace "home-brew" cocktails due to increased regulatory and quality oversight, creating demand for high quality clinical grade preservation reagents that will grow at greater than the overall end market rate. We estimate that "home-brew" in-house formulated storage and freeze media comprise 80 percent of the market.

We have shipped our proprietary biopreservation media products to over 250 regenerative medicine customers. We estimate that our products are now incorporated in over 100 regenerative medicine cell or tissue-based products in pre-clinical and clinical trial stages of development.

While this market is still in an early stage, we have secured a valuable position as a supplier of critical reagents to several commercial companies. Short-term revenue can be highly variable as customer therapies navigate the regulatory approval process, but we estimate that annual revenue from a typical regenerative medicine customer could reach \$1 million per year within three to five years following their product approval. Our position as the leading provider of optimized clinical grade hypothermic storage and cryopreservation freeze media has also led to increased recognition of our scientific expertise.

#### Drug Discovery

Our customers in the drug screening market are pharmaceutical companies that grow and preserve various cell types to measure pharmacologic effects and toxicity of new drug compounds, and also cell suppliers that provide preserved live cells for end-user testing in pharmaceutical companies. Our products specifically address this need by enhancing yield, viability and functionality of previously preserved cells.

To leverage our scientific discoveries and presence in this market, we continue to develop a proprietary disposable labware product that may address a significant workflow bottleneck in the drug screening market - insufficient supply of preserved cells required in high-throughput screening of new drug compounds. In April 2010, we filed an international patent application to protect our intellectual property rights for our inventions which may for the first time, enable bulk freezing of cells in multiwell tissue culture plates.

#### Biobanking

Our customers in this segment include public and private cord blood banks, adult stem cell banks, tissue banks, hair transplant centers, and biorepositories. Since the product launch in the third quarter of 2009, we continue to realize increased sales of our BloodStor® 55-5, a GMP version of the traditional “home-brew” cord blood stem cell freeze media. Sales of CryoStor® and HypoThermosol® in this segment also continue to increase as we displace home-brew preservation media due to the quality and performance profile of our proprietary products. In the hair restoration segment, over fifty different physicians and centers now use HypoThermosol® as an improved ex vivo holding solution for grafts during the procedure. We estimate that HypoThermosol® is used in approximately 2% of the total worldwide procedures and have increased our marketing activities to capture additional share of this growing opportunity.

#### Sales and Marketing

Our sales and marketing strategy supports our objective of building equity in BioLife Solutions as the brand that manufactures and delivers the best-in-class cGMP, serum-free, protein-free, biopreservation media products for cells, tissues, and organs. We provide premiere offerings to life science researchers and professionals applying biology in their work, such as commercial cell therapy and tissue engineering companies, hospital based stem cell transplant centers, university-based research labs, umbilical cord blood banks, adult stem cell banks, tissue banks, biorepositories, hair transplantation centers, pharmaceutical companies, cell suppliers, and toxicity testing labs.



We are committed to being a partner of choice for our customers, which requires us to employ scientific personnel for our sales and service roles. Our sales team consists primarily of technical sales specialists, who are responsible for total customer account management. These individuals have an extensive background in biology or other scientific fields of study. Having a thorough understanding of biological techniques and the research process allows our team to act as advisors to our customers. If our customers have questions about their products, orders or other support areas, they have full access by phone or online, to our technical and customer service professionals.

We participate in numerous scientific conferences and industry trade events by exhibiting, presenting scientific and business lectures, and sponsoring industry association events. We are a corporate or affiliate member of AABB, the Alliance for Regenerative Medicine, the BEST Collaborative, and the International Society for Cellular Therapy. In addition to our direct sales activities, our products are marketed and distributed by STEMCELL Technologies, Sigma-Aldrich, and several other regional distributors under non-exclusive agreements.

### Manufacturing

Our initial internal production facility was validated and became operational during the second quarter of 2009. In December 2009, our quality and manufacturing systems became certified to ISO 13485:2003. The systems are organized according to 21 CFR Part 820 - Quality System Regulation for Good Manufacturing Practice of medical devices, 21 CFR Parts 210 and 211 covering GMP for Aseptic Production, Volume 4, EU Guidelines, Annex 1 for the Manufacture of Sterile Medicinal Products, ISO 13408 for aseptic processing of healthcare products, and ISO 14644, clean rooms and associated controlled environments.

In 2012 we completed the design and build out of an additional cGMP clean room suite. This facility is validated and operational. We now have the capacity to meet the current and future demand for our proprietary products and also to serve select contract manufacturing customers.

In 2012, approximately 46% of total revenue was generated from contract manufacturing for a supplier in the field of transplant medicine. Management believes that our opportunity in the regenerative medicine market will start to become fully realized over the next three to five years as some customers receive regulatory and marketing approvals for their clinical cell and tissue-based products. During the interim period until then, we are utilizing our manufacturing capacity to generate revenue from contract manufacturing customers.

### Governmental Regulation

As an ancillary reagent or excipient used in the production, transportation, and patient administration of our customers' regulated clinical products, HypoThermosol®, CryoStor®, and BloodStor® are not subject to specific FDA or other non-US pre-market approval for drugs, devices, or biologics. In particular, we are not required to sponsor formal prospective, controlled clinical-trials in order to establish safety and efficacy. However, to support our current and prospective clinical customers, we comply with cGMP.

To assist customers with regulatory applications, we have submitted Type II Master Files to the FDA for CryoStor® and HypoThermosol®, which provide the FDA with information regarding our manufacturing facility and process, our quality system, and stability and safety testing that has been performed. Customers engaged in clinical applications who wish to notify the FDA of their intention to use our products in their product development and manufacturing process can now request a cross-reference to our master files.

There can be no assurance that we will not be required to obtain approval from the FDA or foreign regulatory authorities prior to marketing any of our products in the future.

Intellectual Property

Currently, we have three issued U.S. patents, two pending U.S. patent applications, one issued European patent, one issued Japanese patent, and several pending patent applications in foreign jurisdictions.

In addition to our corporate logo and name, we have registered the following marks:

HYPOTHERMOSOL  
GELSTOR  
POWERING THE PRESERVATION SCIENCES  
BIOPRESERVATION TODAY  
BLOODSTOR  
CRYOSTOR  
PREPASTOR  
PRESERVATION CHAIN

We have applied for trademark protection in the following marks:

KATA  
CELLENERGY  
GRAFTSTOR

While we believe that the protection of patents and trademarks is important to our business, we also rely on a combination of trade secrets, nondisclosure and confidentiality agreements, scientific expertise and continuing technological innovation to maintain our competitive position. Despite these precautions, it may be possible for unauthorized third parties to copy certain aspects of our products and/or to obtain and use information that we regard as proprietary. The laws of some foreign countries in which we may sell our products do not protect our proprietary rights to the same extent as do the laws of the United States.

#### Research and Development

Currently, we employ a small team of researchers, some of whom hold Ph.D. degrees in molecular biology or related fields, who also engage in customer support and marketing activities. Also, we conduct collaborative research with several leading academic and commercial entities in our strategic markets.

During 2012 and 2011, we spent approximately \$463,600 and \$516,500, respectively, on research and development activities.

Our Scientific Advisory Board is comprised of leaders in the fields of regenerative medicine, biopreservation, quality systems, and regulatory compliance. These members advise us on our product development, quality systems, and overall marketing strategies.

#### Competition

The markets for our products are competitive and are characterized by the application of advanced technologies. Our competition comes from a wide array of competitors with a high degree of technical proficiency, ranging from in-house formulated biopreservation media, whereby the user purchases raw ingredients and manually mixes the ingredients, to larger manufacturers such as Life Technologies Corp. (formally Invitrogen), and distributors including STEMCELL Technologies, Sigma-Aldrich, VWR, Fisher, and smaller specialized companies, offering a broad array of biotechnology products and services that have significantly more financial, operational, sales and marketing and other resources than we do. These and other companies may have developed or could in the future develop new technologies that compete with our products or even render our products obsolete. It is our belief that in-house formulated biopreservation media, whereby the user purchases raw ingredients and manually mixes the ingredients, satisfies the large majority of the annual worldwide demand.

We believe that our products offer significant advantages over in-house formulations including, time saving, improved quality of components, more rigorous quality control release testing, and improved preservation efficacy. We believe that a company's competitive position in the markets we compete in is determined by product function, product quality, speed of delivery, technical support, price, and distribution capabilities. Our customers are diverse and may place varying degrees of importance on the competitive attributes listed above. While it is difficult to rank these attributes for all our customers in the aggregate, we believe we are well positioned to compete in each category.

We expect competition to intensify with respect to the areas in which we are involved as technical advances are made and become more widely known.

Employees

As of December 16, 2013, we had 24 employees, all of whom were full time. Our employees are not covered by any collective bargaining agreement. We consider relations with our employees to be good.

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## PROPERTIES

We lease approximately 26,000 square feet of property being used in current operations in our Bothell, Washington principal location which contains office, manufacturing, storage and laboratory facilities.

We consider the facilities to be in a condition suitable for their current uses. Because of anticipated growth in the business and due to the increasing requirements of customers or regulatory agencies, we may need to acquire additional space or upgrade and enhance existing space prior to the expiry of the lease in 2021. We believe that adequate facilities will be available upon the conclusion of our leases.

All of our products and services are manufactured or provided from our Bothell, Washington facility.

## LEGAL PROCEEDINGS

On February 7, 2007, Kristi Snyder, a former employee of the Company filed a complaint in the New York State Supreme Court, County of Broome, against us alleging a breach of an employment agreement and seeking damages of up to \$300,000 plus attorneys' fees. This case currently is in discovery. We are vigorously defending our position.

On April 6, 2007, we were served with a complaint filed by John G. Baust, our former Chief Executive Officer and President, and thereafter, until January 8, 2007, the Chairman, Sr. Vice President and Chief Scientific Officer, in the New York State Supreme Court, County of Tioga, against us seeking, among other things, damages under his employment agreement to be determined upon trial of the action plus attorneys' fees, a declaratory judgment that he did not breach his fiduciary duties to the Company, and that his covenant not to compete is void as against public policy or unenforceable as a matter of law, and to enjoin us from commencing an action against him in Delaware courts seeking damages for breaches of his fiduciary obligations to us. The parties have engaged in extensive motion practice. By decision of December 18, 2009, Justice Tait rejected Plaintiff Baust's efforts to obtain partial summary judgment. This case currently is in discovery. We are vigorously defending our position.

On June 15, 2007, we filed a lawsuit in the State of New York Supreme Court, County of Tioga against Cell Preservation Services, Inc. ("CPSI") and Coraegis Bioinnovations, Inc. ("Coraegis"), both of which are owned and/or controlled by John M. Baust, a former employee of the Company and the son of John G. Baust, both of whose employment with us was terminated on January 8, 2007.

On March 15, 2004, we had entered into a Research Agreement with CPSI, pursuant to which CPSI took over the processing of our existing SBIR grants, on our behalf and was to apply for additional SBIR grants and, in each case, was to perform the research with respect to such grants. In connection therewith, we granted to CPSI a limited license to use our technology ("BioLife's Technology"), including our proprietary cryopreservation solutions (collectively, "Intellectual Property"), solely for the purpose of conducting the research pertaining to the SBIR grants, and CPSI agreed to keep confidential all of our confidential information disclosed to CPSI ("Confidential Information"). On January 8, 2007, we informed CPSI that the Research Agreement would not be extended and would terminate in accordance with its terms on March 15, 2007.

The lawsuit states various causes of action, including, (1) repeated violations of the Research Agreement by CPSI by improperly using BioLife's Technology, Intellectual Property and Confidential Information for its own purposes, (2) the unlawful misappropriation by CPSI and Coraegis of our trade secrets, (3) unfair competition on the part of CPSI and Coraegis through their unlawful misappropriation and misuse of BioLife's Technology, Intellectual Property and Confidential Information, and (4) the conversion of BioLife's Technology, Intellectual Property and Confidential Information by CPSI and Coraegis to their own use without our permission.

The lawsuit seeks, among other things, (1) to enjoin CPSI from continuing to violate the Research Agreement, (2) damages as a result of CPSI's breaches of the Research Agreement, (3) to enjoin CPSI and Coraegis from any further use of the Company's trade secrets, (4) damages (including punitive damages) as a result of CPSI's and Coraegis' misappropriation of the Company's trade secrets, (5) to enjoin CPSI and Coraegis from any further use of BioLife's Technology, Intellectual Property and Confidential Information, (6) damages (including punitive damages) as a result of CPSI's and Coraegis' unfair competition against the Company, and (7) damages (including punitive damages) as a result of CPSI's and Coraegis' conversion of BioLife's Technology, Intellectual Property and Confidential Information to their own use. On September 30, 2008, Justice Jeffrey Tait issued a Letter Decision and Order which provides for a multi-phase process for discovery concerning contested discovery disclosures. By letter dated January 14, 2009, Justice Tait ordered that CPSI deliver by February 13, 2009 certain confidential documents to chambers for an in camera review. The parties are awaiting Justice Tait's review of these confidential documents in order to move forward with discovery. The parties have also engaged in extensive motion practice. By decision of December 18, 2009, Justice Tait denied the attempt of the Defendants to dismiss Plaintiff's complaint. This case currently is in discovery. The Company is vigorously pursuing its position.

On December 4, 2007, John M. Baust, the son of John G. Baust, filed a complaint in the New York State Supreme Court, County of Tioga, against the Company and Michael Rice, our Chief Executive Officer and former chairman of the board, alleging, among other things, a breach of an employment agreement and defamation of character and seeking damages against us in excess of \$300,000 plus attorney's fees. This case currently is in discovery. We are vigorously defending our position.

## DIRECTORS AND EXECUTIVE OFFICERS

The following table and text set forth the names and ages of our directors and executive officers as of December 16, 2013. The board is comprised of only one class. All of the directors will serve until the next annual meeting of shareholders, and until their successors are elected and qualified, or until their earlier death, retirement, resignation or removal. There are no family relationships among directors and executive officers. Also provided herein are brief descriptions of the business experience of each director and executive officer during the past five years (based on information supplied by them) and an indication of directorships held by each director in other public companies subject to the reporting requirements under the Federal securities laws. During the past ten years, none of our directors or executive officers has been involved in any legal proceedings that are material to an evaluation of the ability or integrity of such person.

| Name                 | Age | Position and Offices With the Company   |
|----------------------|-----|---|
| Joe Annicchiarico    | 38  | Vice President, Manufacturing   |
| Aby J. Mathew, Ph.D. | 41  | Chief Technology Officer and Senior Vice President                                |
| Michael Rice         | 50  | Chief Executive Officer, President, and Director                                  |
| Mark Sandifer        | 55  | Chief Quality Officer   |
| Daphne Taylor        | 47  | Secretary, Chief Financial Officer and Vice President, Finance and Administration |
| Raymond Cohen        | 54  | Chairman of the Board   |
| Thomas Girschweiler  | 56  | Director  |
| Andrew Hinson        | 50  | Director  |
| Joseph Schick        | 52  | Director  |
| Rick Stewart         | 61  | Director  |

Joe Annicchiarico has served as Vice President, Manufacturing since September 2012 and as Director of Manufacturing from December 2011 through August 2012. Prior to joining the Company, Mr. Annicchiarico served in various roles at Mediquest Therapeutics, Inc., from May 2005 through September 2011, including Scientist, Formulation Manager, and most recently, as Director of Manufacturing and Clinical Supplies. From January 2004 through September 2005, Mr. Annicchiarico worked in specialty chemical sales at Drummond American and prior to that, he spent four years as a formulation development Chemist.

Dr. Aby J. Mathew, Ph.D., has been Senior Vice President and Chief Technology Officer since February 2011. From January 2007 through February 2011, Dr. Mathew served as Senior Scientist, Director of Strategic Relations, and Senior Director of Strategic Relations. From June 2003 through January 2007, Dr. Mathew served as Director of Manufacturing. From September 2000 through June 2003, Dr. Mathew served as Clinical Accounts Manager and Director of Hypothermic Preservation for Cryomedical Sciences/BioLife Solutions. Dr. Mathew has been working on low temperature biopreservation since 1994, and his studies contributed to the development of our current commercial HypoThermosol® and CryoStor® product platforms and intellectual property foundation. Beginning in 1994 to 2000, Dr. Mathew performed research at the State University of New York at Binghamton (now Binghamton University) related to research grants (including as a consultant) co-supervised by the Vice President of Research and Development of Cryomedical Sciences, Inc., the former parent of BioLife Solutions.

Michael Rice has been President and Chief Executive Officer and a director of the Company since August 2006, and chairman of the board from August 2007 to November 2013. Mr. Rice has more than 20 years of leadership and entrepreneurial experience in the medical and high tech industries. He was most recently the senior business development manager for medical and wireless products at AMI Semiconductor, from October 2004 to August 2006. From October 2000 to October to August 2006, Mr. Rice also served as the director of marketing and business development at Cardiac Science, Inc., a manufacturer of automated external defibrillators. Prior to that, from May

1998 to October 2000, he was the Vice President, Sales and Marketing for TEGRIS Corporation, a privately held network services provider. Mr. Rice also spent 12 years, from May 1986 to May 1998 at Physio Control Corporation in several sales and marketing management roles prior to its acquisition by Medtronic Inc. The board has determined that Mr. Rice should serve as a director because it values management's insight.

Mark Sandifer has served as Chief Quality Officer since September 2012. From February 2011 through September of 2012, he served as Vice President of Quality and from August 2008 through February 2011 as Director of Quality. From July 2008 through August 2008 Mr. Sandifer served as Quality Assurance Manager. Prior to joining the Company, Mr. Sandifer was Senior Quality Analyst for Natestch Pharmaceutical, where he worked from January 2006 through August 2008. From March 1997 through June of 2005, Mr. Sandifer worked as Research Assistant, Medical Program Coordinator, and Senior Administrative Coordinator at Georgetown University Hospital.

Daphne Taylor has been Vice President, Finance & Administration, and Chief Financial Officer since August 2011, and Secretary since January 30, 2013 and from March 2011 through July 2011 she served as Corporate Controller. Prior to joining the Company, Ms. Taylor served as Vice President, Corporate Controller and Chief Accounting Officer of Cardiac Science Corporation from November 2005 through January 2009. From April 2002 through November 2005, she held various positions, including Vice President and Corporate Controller for LookSmart, Inc.



Raymond W. Cohen joined the board in May 2006, and has served as chairman of the board since November 2013. Mr. Cohen is an Accredited Public Company Director and currently serves as the Chairman of Lombard Medical Technologies a UK-based public company manufacturing and marketing endovascular stent graphs, and as Chairman of JenaValve Technology, a Munich-based venture-capital backed manufacturer and marketer of transcatheter aortic valve systems and as a member of the board of directors and the audit committee of Spectrum Pharmaceuticals, a oncology drug manufacturer based in Irvine, CA. Previously, from 2010, Mr. Cohen served as the Chief Executive Officer and member of the board of directors of Vessix Vascular, Inc., a developer of a novel RF balloon catheter technology for treatment of hypertension that was acquired by Boston Scientific Corp. in November 2013. Previously, from 1997 to 2006, Mr. Cohen served as Chairman and Chief Executive Officer of publicly-traded Cardiac Science, Inc., which in 2004 was ranked as the 4th fastest growing technology company in North America on Deloitte & Touche's Fast 500 listing. Mr. Cohen has also currently serves as the Chairman of the board of directors of Synchroness, Inc., a private engineering and product development firm since 2006. In addition, Mr. Cohen is a member of the board of directors of LoneStar Heart, Inc. (formerly CardioPolymers, Inc.) a privately-held developer of novel biotherapeutics for the treatment of congestive heart failure and also serves an advisor to Fjord Ventures, LLC., a life science incubator. In 2008, Mr. Cohen was named by AeA as the Private Company Life Science CEO of the Year. Mr. Cohen was named Entrepreneur of the Year in 2002 by the Orange County Business Journal and was a finalist for Ernst & Young's Entrepreneur of the Year in the medical company category in 2004. Mr. Cohen holds a B.S. in Business Management from Binghamton University. The board has determined that Mr. Cohen should serve as a director because of his extensive experience with public companies.

Thomas Girschweiler joined the board in 2003. Mr. Girschweiler has been engaged in corporate financing activities on his own behalf since 1996. From 1981 to 1996 he was an investment banker with Union Bank of Switzerland. Mr. Girschweiler is a graduate of the Swiss Banking School. The board has determined that Mr. Girschweiler should serve as a director because of his substantial shareholdings.

Andrew Hinson joined the board in February 2007. He is currently the Vice President of Clinical and Regulatory Affairs for LoneStar Heart, Inc., a global developer of medical devices, small molecule, and cellular-based therapies for cardiovascular disease. Mr. Hinson joined CardioPolymers, now a wholly-owned subsidiary of LoneStar Heart, in November 2004. From 2001 to 2004, Mr. Hinson served as the Senior Director of research and clinical development at AnGes MG, Inc. (TSE: 4563) a biotechnology firm engaged in the development and commercialization of novel gene and cell therapies for the treatment of cardiovascular disease. Prior to that Mr. Hinson had a long career with Procter & Gamble Pharmaceutical (NYSE:PG) holding multiple technical and management positions in research, clinical development and medical affairs. Mr. Hinson has diverse experience in the cell and gene therapy markets and extensive experience with regulatory affairs and clinical development of new therapies for cardiac, neurologic, and gastrointestinal diseases. The board has determined that Mr. Hinson should serve as a director because of his experience and knowledge of companies in the biotechnology space.

Joseph Schick joined the board in November 2013. He is currently Chief Financial Officer of Corbis, a global digital media company, since May 2013. Prior to his position at Corbis, from March 2009 through July 2013, Mr. Schick was Chief Financial Officer at Talyst, a pharmacy automation hardware and software company. Mr. Schick served as Chief Financial Officer at Vertafore from October 2006 through January 2009, an enterprise software company for the insurance industry. Mr. Schick was also in various roles at travel company Expedia (NASDAQ: EXPE), including Senior Vice President of Finance. Mr. Schick has significant experience with SEC reporting, strategic planning, and mergers and acquisitions. Mr. Schick started his career with Arthur Andersen and is a CPA who received his B.S. in Accounting from the University of Illinois. The board has determined that Mr. Schick should serve as a director because of his financial expertise.

Rick Stewart joined the board in February 2013. Mr. Stewart has served as President and Chief Executive Officer, and a member of the board of directors of Cardiac Dimensions since 2001. From 1998 to 2001 he was President and Chief

Executive Officer of Tegrus Corporation, a leading IT infrastructure and enterprise applications provider for vertical markets. Prior to that Mr. Stewart had a long career within Eli Lilly in its Medical Device and Diagnostics Unit, holding multiple executive positions in general and technical management, sales, marketing and business development. Mr. Stewart was a member of the senior team that led a buyout of the Physio-Control subsidiary from Eli-Lilly in 1994 which shortly thereafter was taken public. He received an MBA from the University of Washington. The board has determined that Mr. Stewart should serve as a director because his experience in the medical device field and executive acumen.

## CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

Each of the transactions described below was reviewed and approved or ratified by the audit committee of the board. It is anticipated that any future transactions between us and our officers, directors, principal stockholders and affiliates will be on terms no less favorable to us than could be obtained from unaffiliated third parties and that such transactions will be reviewed and approved by our Audit Committee and a majority of the independent and disinterested members of the board.

### Legal Fees

Howard S. Breslow, a director of the Company until February 4, 2013, is a member of Breslow & Walker, LLP, and served as general counsel to the Company. As of December 16, 2013, Mr. Breslow owned 53,600 of our shares of common stock and held rights to purchase an aggregate of 1,100,000 additional shares pursuant to stock options and warrants issued to him and/or affiliates. We incurred approximately \$18,636 in legal fees during the year ended December 31, 2012 for services provided by Breslow & Walker, LLP. As of December 16, 2013, we had no amount due to Breslow & Walker, LLP.

### Facility Agreements

On January 11, 2008, we entered into the facility agreements with each of Thomas Girschweiler, a director and stockholder of the Company, and Walter Villiger, an affiliate of the Company, pursuant to which each noteholder extended to us a secured convertible multi-draw term loan facility of \$2,500,000, which facility (a) incorporated (i) a refinancing of then existing indebtedness of the Company to the Investor, and accrued interest thereon, in the aggregate amount of \$1,431,563.30, (ii) a then current advance of \$300,000, and (iii) a commitment to advance to the Company, from time to time, additional amounts up to a maximum of \$768,436.70, (b) bears interest at the rate of 7% per annum on the principal balance outstanding from time to time, (c) is evidenced by a secured convertible multi-draw term loan, which was due and payable, together with accrued interest thereon, the earlier of (i) January 11, 2010, or (ii) a certain events of default, and (d) is secured by all of our assets.

In May and July 2008, we received \$1,000,000 in total from the noteholders pursuant to the facility agreements. On October 20, 2008, the amounts available under each of the facility agreements was increased by \$2,000,000 to \$4,500,000 (an aggregate of \$9,000,000), and, on October 24, 2008, we received \$600,000 in total from the noteholders pursuant to the amended facility agreements. In 2009, we received an additional \$2,825,000 in total from the noteholders pursuant to the amended facility agreements. In December 2009, the noteholders extended the repayment date to January 11, 2011. On November 16, 2010, the amount available under each of the facility agreements was increased by \$250,000 to \$4,750,000 (an aggregate of \$9,500,000) and the noteholders granted an extension of the repayment date to January 11, 2013. In 2010, we received \$1,145,000 in total from the noteholders pursuant to the amended facility agreements. In 2011, we received \$1,095,000 in total from the noteholders pursuant to the amended facility agreements. In August 2011 we entered into an amendment to each of the facility agreements pursuant to which the amount of each facility agreement was increased to \$5,250,000. The multi-draw term loan notes previously delivered to each of the noteholders also was amended to reflect the changes to the facility agreements. In consideration of such amendments, we issued to each of the noteholders a five-year warrant to purchase 1,000,000 shares of our common stock, par value \$0.001 per share, at a price of \$0.063 per share. On May 30, 2012, the amounts available under each of the facility agreements were increased to \$5,750,000 (an aggregate of \$11,500,000) and the noteholders granted an extension of the repayment date to January 11, 2016. The multi-draw term loan notes previously delivered to each of the noteholders also was amended to reflect the changes to the facility agreements. In consideration of such amendments, we issued to each of the noteholders a five-year warrant to purchase 1,000,000 shares, at a price of \$0.08 per share, which share amount and price was adjusted to [ ] and [ ] respectively, to reflect the reverse stock split on [ ], 2014.

On December 16, 2013, we entered into note conversion agreements with the noteholders. Pursuant to the note conversion agreements, we will issue units pursuant to a private placement on substantially similar terms as the offering to each of the noteholders in exchange for the conversion of the \$10.6 million principal amount outstanding under the promissory notes and accrued and unpaid interest of \$[ ] through the assumed conversion date of [ ], 2014. In connection with the note conversions, the noteholders will release all security interests and the facility agreements will be terminated. Such conversions will occur concurrently with the conversion.

## DIRECTOR COMPENSATION

[During the year ended December 31, 2012, non-employee directors were compensated with a quarterly retainer fee of \$1,500. The Audit Committee Chairman was compensated an additional quarterly retainer fee of \$2,000. All non-employee directors receive \$1,000 per meeting for attending board meetings in person and \$500 per meeting for attending board meetings telephonically. Non-employee Directors who attend audit committee and the compensation committee meetings in person or telephonically receive \$500 per meeting. A total of \$50,000 in director compensation was recorded during the year ended December 31, 2012.

The following table summarizes the compensation of our directors who served during 2012 and who are not listed as named executive officers.

| Name                | Fees Earned          |                    |     | All Other Compensation (\$) | Total (\$) |
|---------------------|----------------------|--------------------|-----|-----------------------------|------------|
|                     | Or Paid In Cash (\$) | Option Awards (\$) | (2) |                             |            |
| Howard Breslow(1)   | 6,500                | 10,072             | (3) | --                          | 16,572     |
| Thomas Girschweiler | 11,000               | 10,072             | (3) | --                          | 21,072     |
| Roderick de Greef   | 7,500                | 10,072             | (3) | --                          | 17,572     |
| Raymond Cohen       | 17,000               | 10,072             | (3) | --                          | 27,072     |
| Andrew Hinson       | 8,000                | 10,072             | (3) | --                          | 18,072     |

(1) Mr. Breslow served as a director until February 4, 2013.

(2) See Note 1 to Notes to Financial Statements for the years ended December 31, 2012 and 2011 for a description on the valuation methodology of stock option awards.

(3) Amount is a result of options to purchase shares at \$0.10 per share granted to director on February 15, 2012, which options vested on May 10, 2013.

## EXECUTIVE COMPENSATION

## Summary Compensation Table

The following Summary Compensation Table sets forth certain information regarding the compensation, for services rendered in all capacities to us during 2012 and 2011, of our current principal executive officer and our two other most highly compensated executive officers at the end of 2012 (together, the "named executive officers").

| Name and Principal Positions                            | Year | Salary (\$) | Bonus (\$) | Stock Awards (\$) | Option Awards (\$) | All Other Compensation (\$) | Total (\$) |
|---|------|-------------|------------|-------------------|--------------------|-----------------------------|------------|
| (a)   | (b)  | (c)         | (d)        | (e)               | (f)(1)             | (i)                         | (j)        |
| Michael Rice  | 2012 | 285,002     | 150,000    | —                 | —                  | 24,143 (7)                  | 459,145    |
| President, Chief Executive Officer and Director (8/06 – | 2011 | 270,000     | —          | —                 | 161,220 (2)        | —                           | 431,220    |

|   |      |         |        |   |        |     |   |         |
|---|------|---------|--------|---|--------|-----|---|---------|
| present)                                  |      |         |        |   |        |     |   |         |
| Daphne Taylor                             | 2012 | 160,000 | 18,000 | — | 19,762 | (3) | — | 197,762 |
| Chief                                     | 2011 | 102,087 | —      | — | 44,192 | —   | — | 146,279 |
| Financial<br>Officer (3/11 –<br>present)  |      |         |        |   |        |     |   |         |
| Aby J.<br>Mathew                          | 2012 | 177,833 | 20,000 | — | 19,762 | —   | — | 217,595 |
| Chief                                     | (6)  |         |        |   |        |     |   |         |
| Technology<br>Officer (9/00 –<br>present) |      |         |        |   |        |     |   |         |

- (1) See Note 1 to Notes to Financial Statements for the years ended December 31, 2012 and 2011 for a description on the valuation methodology of stock option awards.
- (2) Amount is a result of options to purchase 400,000 shares at \$0.08 per share granted to officer on February 25, 2011, which options vested 100% upon grant of the awards, and options to purchase 2,247,939 shares at \$0.08 per share granted to officer on February 25, 2011, which options vested during the fourth quarter of 2012.
- (3) Amount is a result of options to purchase 250,000 shares at \$0.10 per share granted to officer on February 15, 2012, which options vested to the extent of 62,500 shares on February 15, 2013 and, thereafter, vest in monthly increments of 5,208 shares.
- (4) Amount is the result of options to purchase 250,000 shares at \$0.10 per share granted to officer on March 1, 2011, which options vested to the extent of 62,500 shares on each of March 1, 2012, 2013, 2014 and 2015, and options to purchase 500,000 shares at \$0.063 per share granted to officer on August 17, 2011, which options vested to the extent of 125,000 shares on August 17, 2012, and, thereafter, will vest in monthly increments of 10,417 shares.
- (5) Amount is a result of options to purchase 250,000 shares at \$0.10 per share granted to officer on February 15, 2012, which options vested to the extent of 62,500 shares on February 15, 2013 and, thereafter, will vest in monthly increments of 5,208 shares.
- (6) Mr. Mathew was appointed an executive officer position in September of 2012.
- (7) Amount represents accrued vacation paid in cash.

## Outstanding Equity Awards at Fiscal Year-End 2012

The following table sets forth information concerning the outstanding equity awards as of December 31, 2012 granted to the named executive officers.

| Name (a)      | OPTION AWARDS   |   |  |                                |                            |
|---------------|---|---|--|--------------------------------|----------------------------|
|               | Number of Securities Underlying Unexercised Options (#) Exercisable (b) | Number of Securities Underlying Unexercised Options (#) Unexercisable (c) | Equity Incentive Plan Awards: Number of Securities Underlying Unexercised Unearned Options (#) (d) | Option Exercise Price (\$) (e) | Option Expiration Date (f) |
| Michael Rice  | 1,500,000   | —   | —  | 0.07                           | 8/7/2016(1)                |
| Michael Rice  | 1,000,000   | —   | —  | 0.08                           | 2/7/2017(2)                |
| Michael Rice  | 733,125   | 31,875  | —  | 0.09                           | 2/2/2019(3)                |
| Michael Rice  | 595,439   | 595,439   | —  | 0.10                           | 2/5/2020(4)                |
| Michael Rice  | 400,000   | —   | —  | 0.08                           | 2/25/2021(5)               |
| Michael Rice  | 2,247,939   | —   | —  | 0.08                           | 2/25/2021(6)               |
| Daphne Taylor | 62,500  | 187,500   | —  | 0.10                           | 3/1/2021(7)                |
| Daphne Taylor | 166,667   | 333,333   | —  | 0.063                          | 8/17/2021(8)               |
| Daphne Taylor | —   | 250,000   | —  | 0.10                           | 2/15/2022(9)               |
| Aby J. Mathew | 30,000  | —   | —  | 0.08                           | 9/28/15(10)                |
| Aby J. Mathew | 100,000   | —   | —  | 0.07                           | 10/12/16(11)               |
| Aby J. Mathew | 500,000   | —   | —  | 0.08                           | 2/7/17(12)                 |
| Aby J. Mathew | 340,000   | —   | —  | 0.10                           | 8/7/17(13)                 |
| Aby J. Mathew | 100,000   | —   | —  | 0.05                           | 2/11/18(14)                |
| Aby J. Mathew | 100,000   | —   | —  | 0.04                           | 11/5/18(15)                |
| Aby J. Mathew | 265,766   | 265,766   | —  | 0.10                           | 2/5/20(16)                 |
| Aby J. Mathew | 194,079   | 582,237   | —  | 0.08                           | 2/11/21(17)                |
| Aby J. Mathew | —   | 250,000   | —  | 0.10                           | 2/15/22(18)                |

(1) This award vested 500,000 shares on each of August 7, 2007, 2008 and 2009.

(2) This award vested 333,333 shares on each of February 7, 2008 and 2009, and 333,334 shares on February 7, 2010.

(3) This award vested 191,250 shares on February 2, 2010 and, thereafter, in monthly increments of 15,938 shares.

(4) This award vests 297,719 shares on each of February 5, 2012 and 2013, and 297,721 shares on February 5, 2014.

(5) This award vested on the date of grant.

(6) This award vested at the end of the fourth quarter of 2012, when the Company achieved cash flow break even.

(7) This award vests 62,500 shares on each of March 1, 2012, 2013, 2014 and 2015.

(8) This award vested 125,000 shares on August 17, 2012 and, thereafter, vests in monthly increments of 10,417 shares.

(9) This award vested 62,500 shares on February 15, 2013 and, thereafter, vests in monthly increments of 5,208 shares.

- (10) This award vested 15,000 shares on each of September 28, 2006, 2007, 2008 and 2009.
- (11) This award vested 25,000 shares on each of October 12, 2007, 2008, 2009 and 2010.
- (12) This award vested 125,000 shares on each of February 7, 2008, 2009, 2010 and 2011.
- (13) This award vested 85,000 shares on each of August 7, 2008, 2009, 2010 and 2011.
- (14) This award vested 25,000 shares on each of February 11, 2009, 2010, 2011 and 2012.
- (15) This award vested 25,000 shares on each of November 5, 2009, 2010, 2011 and 2012.
- (16) This award vests 132,883 shares on each of February 5, 2011, 2012, 2013 and 2014.
- (17) This award vests 194,079 shares on each of February 11, 2012, 2013, 2014 and 2015.
- (18) This award vests 62,500 shares on February 15, 2013 and, thereafter, in monthly increments of 5,208 shares.



## Securities Authorized for Issuance Under Equity Compensation Plans at December 31, 2012

The following table sets forth information as of December 31, 2012 relating to all of our equity compensation plans:

| Plan category   | Number of securities to be issued upon exercise of outstanding options and warrants (in thousands) | Weighted Average exercise price of outstanding options and warrants | Number of securities remaining available for future issuance (in thousands) |
|---|--|---|---|
| Equity compensation plans approved by security holders      | 6,150  | \$ .08  | —   |
| Equity compensation plans not approved by security holders* | 14,230   | \$ .09  | —   |
| <b>Total</b>  | <b>20,380</b>  | <b>\$ .09</b>   | <b>—</b>  |

\* See note 6 of Notes to our financial statements for the years ended December 31, 2012 and 2011.

#### Employment Agreements

We have an employment agreement with Michael Rice, our President and Chief Executive Officer, which automatically renews for successive one year periods in the event either party does not send the other a “termination notice” not less than 90 days prior to the expiration of the initial term or any subsequent term. The agreement provided for a salary of \$200,000 per year and an incentive bonus based on certain quarterly milestones, to be determined by the board. Mr. Rice also received a ten-year incentive stock option to purchase 1,500,000 shares of common stock at \$.07 per share (the fair market value on the date of grant), which vested to the extent of 500,000 shares on each of the first three anniversary dates of the date of grant. We amended this employment agreement on February 7, 2007 to provide that if, in connection with a “change in control,” Mr. Rice’s employment is terminated without “Cause” or he resigns for “Good Reason,” he will be entitled to the continued payment of salary and bonuses and the reimbursement of medical insurance premiums for 24 months following the change in control event. On February 11, 2008, Mr. Rice’s salary was increased to \$300,000 per annum, retroactive to January 1, 2008 and his quarterly bonus plan was supplanted by annual reviews of the Compensation Committee in 2008, 2009, and 2010. Beginning on August 1, 2009, Mr. Rice’s salary was decreased 10% in conjunction with our 10% across the board pay cuts. On July 1, 2012, Mr. Rice’s salary was increased to \$300,000 per annum. On January 30, 2013, Mr. Rice was granted a bonus of \$150,000 for the year ended December 31, 2012.

We have an employment agreement with Dr. Aby J. Mathew, Ph.D., our Senior Vice President and Chief Technology Officer, which automatically renews for successive one year periods in the event either party does not send the other a “termination notice” not less than 90 days prior to the expiration of the initial term or any subsequent term. The agreement provides for a salary of \$200,000 per year and an incentive bonus based on certain quarterly milestones of up to 10% of Dr. Mathew’s base salary. If, in connection with a “change in control,” Dr. Mathew’s employment is terminated without “Cause” or he resigns for “Good Reason,” he will be entitled to the continued payment of salary and bonuses and the reimbursement of medical insurance premiums for 12 months following the change in control event. On January 30, 2013, Dr. Mathew’s salary was increased to \$218,000 per annum, retroactive to January 1, 2013.

We have an employment agreement with Daphne Taylor, our Chief Financial Officer, which automatically renews for successive one year periods in the event either party does not send the other a “termination notice” not less than 90 days

prior to the expiration of the initial term or any subsequent term. The agreement provides for a salary of \$150,000 per year and an incentive bonus based on certain quarterly milestones of up to 10% of Ms. Taylor's base salary. If, in connection with a "change in control," Ms. Taylor's employment is terminated without "Cause" or she resigns for "Good Reason," she will be entitled to the continued payment of salary and bonuses and the reimbursement of medical insurance premiums for 6 months following the change in control event. On August 10, 2012, Ms. Taylor's salary was increased to \$180,000 per annum, effective September 1, 2012. On January 30, 2013, Ms. Taylor's salary was increased to \$194,000 per annum, retroactive to January 1, 2013.

## SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

Except as otherwise indicated, all share and per share information included under this “Security Ownership of Certain Beneficial Ownership and Management” heading does not reflect (i) the proposed 1-for-[•] reverse stock split which we intend to effectuate prior to the consummation of the offering, or (ii) the issuance of [ ] units to the noteholders in exchange for the conversion of \$10.6 million principal amount of outstanding promissory notes and \$[ ] of accrued and unpaid interest.

[The following table sets forth, as of December 16, 2013, certain information regarding the beneficial ownership of common stock by (i) each stockholder known by the Company to be the beneficial owner of more than 5% of the outstanding shares thereof; (ii) each director of the Company; (iii) each Executive Officer of the Company; and (iv) all of our current directors and executive officers as a group.

## Directors and Executive Officers

| Name and Address of Beneficial Owner  | Common Stock | Percentage of Class |   |
|---|--------------|---------------------|---|
| <b>Directors and Executive Officers</b>   |              |                     |   |
| Thomas Girschweiler (Director)(1)   | 18,256,552   | 24.6                | % |
| Michael Rice (Officer and Director)(2)  | 7,103,817    | 9.2                 | % |
| Aby J. Mathew (Officer) (3)   | 2,857,454    | 3.9                 | % |
| Raymond Cohen (Director) (4)  | 1,395,000    | 1.9                 | % |
| Andrew Hinson (Director)(5)   | 850,000      | 1.2                 | % |
| Daphne Taylor (Officer) (6)   | 546,874      | 0.8                 | % |
| Rick Stewart (Director)   | 66,667       | 0.1                 | % |
| Joseph Schick (Director)  | --           | --                  |   |
| Total shares owned by Executive Officers and Directors(7)   | 32,448,825   | 36.9                | % |
| <b>5% Stockholders</b>  |              |                     |   |
| Walter Villiger(8)  | 22,240,081   | 30.3                | % |
| Beskivest Chart LTD<br>Goodmans Bay Center<br>West Bay Street & Sea View Drive<br>Nassau, Bahamas | 7,255,026    | 10.3                | % |
| Roderick de Greef(9)  | 5,469,762    | 7.5                 | % |
| John G. Baust<br>175 Raish Hill Road<br>Candor, NY 13743  | 3,694,722    | 5.2                 | % |

Shares of common stock subject to options and warrants that are exercisable or will be exercisable within 60 days of December 16, 2013 are deemed outstanding for computing the number of shares beneficially owned. The percentage of the outstanding shares held by a person holding such options or warrants includes those currently exercisable or exercisable within 60 days of December 16, 2013, but such options and warrants are not deemed outstanding for computing the percentage of any other person. Except as indicated by footnote, and subject to community property laws where applicable, we believe that the persons named in the table have sole voting and investment power with respect to all shares shown as beneficially owned by them. Unless otherwise indicated, the business address of each person listed is in care of 3303 Monte Villa Parkway, #310, Bothell, WA 98021.

(1)

- Includes options to purchase 850,000 shares of common stock issuable under stock options exercisable within 60 days from December 16, 2013 and 3,000,000 shares of common stock issuable upon the exercise of outstanding warrants, all of which are currently exercisable.
- (2) Includes options to purchase 7,103,817 shares of common stock issuable under stock options exercisable within 60 days from December 16, 2013.
  - (3) Includes options to purchase 2,403,560 shares of common stock issuable under stock options exercisable within 60 days from December 16, 2013.
  - (4) Includes options to purchase 1,350,000 shares of common stock issuable under stock options exercisable within 60 days from December 16, 2013.
  - (5) Includes options to purchase 850,000 shares of common stock issuable under stock options exercisable within 60 days from December 16, 2013.
  - (6) Includes options to purchase 546,874 shares of common stock issuable under stock options exercisable within 60 days from December 16, 2013.
  - (7) Includes the securities listed in footnotes 1-6, in addition to options to purchase 1,372,461 shares of common stock issuable under stock options exercisable within 60 days from December 16, 2013.
  - (8) Includes 3,000,000 shares of common stock issuable upon the exercise of outstanding warrants, all of which are currently exercisable.
  - (9) Includes options to purchase 1,559,459 shares of common stock issuable under stock options exercisable within 60 days from December 16, 2013 and 1,250,000 shares of common stock issuable upon the exercise of outstanding warrants, all of which are currently exercisable; includes 80,000 shares of common stock beneficially owned by Mr. de Greef in the name of deGreef & Company Inc.

## DIRECTOR INDEPENDENCE

We currently have six directors: Michael Rice, Thomas Girschweiler, Raymond Cohen, Andrew Hinson, Rick Stewart and Joe Schick. Messrs. Cohen, Hinson, Schick and Stewart are considered independent under the rules of the Nasdaq Stock Market.

## DESCRIPTION OF SECURITIES

Except as otherwise indicated, all share and per share information included under this “Description of Securities” heading does not reflect (i) the proposed reverse stock split which we intend to effectuate prior to the consummation of the offering, or (ii) the issuance of [ ] units to the noteholders in exchange for the conversion of \$10.6 million principal amount of outstanding promissory notes and \$[ ] of accrued and unpaid interest thereon.

### General

As of the date of this prospectus, our authorized capital stock consisted of 150,000,000 shares of common stock, \$0.001 par value per share, and 1,000,000 shares of preferred stock, \$0.001 par value per share. Our board of directors may establish the rights and preferences of the preferred stock from time to time. As of December 16, 2013, there were 70,414,877 shares of our common stock outstanding, and there were no shares of preferred stock issued and outstanding.

On December 16, 2013, our stockholders approved by non-unanimous written consent a proposal to authorize the board to implement a reverse stock split at a ratio ranging from 1-for-4 to 1-for-16 of all of the outstanding shares of common stock, the final ratio to be determined at the discretion of the board and to be implemented, if at all, within 12 months after the date of the mailing of the information statement. No fractional shares of our common stock will be issued as a result of the reverse stock split. In the event the proposed reverse stock split leaves a stockholder with a fraction of a share, the number of shares due to the stockholder will be rounded up to the nearest whole share. The board may, but is not required, to reduce the number of authorized shares of common stock in connection with the reverse stock split. As a result, immediately following the consummation of the offering and after giving effect to the consummation of the proposed stock split (at an assumed ratio of 1:[ ] with [no] reduction in our authorized capital), and the sale by us of [ ] shares of common stock in this offering, we expect to have authorized capital stock consisting of 150,000,000 shares of common stock, \$0.001 par value per share, and 1,000,000 shares of preferred stock, \$0.001 par value per share, and [ ] shares of common stock outstanding and no shares of preferred stock outstanding.

### Common Stock

Holders of our common stock are entitled to one vote per share. Our certificate of incorporation does not provide for cumulative voting. Holders of our common stock are entitled to receive dividends declared by our board of directors out of funds legally available for the payment of dividends, subject to the rights, if any, of preferred stockholders. In the event of our liquidation, dissolution, or winding up, holders of common stock are entitled to share ratably in all of our assets remaining after we pay our liabilities and distribute the liquidation preference of any then outstanding preferred stock. The rights, preferences and privileges of holders of common stock are subject to, and may be adversely affected by, the rights of holders of any series of preferred stock that we may designate and issue in the future. Holders of common stock have no preemptive or other subscription or conversion rights. There are no redemption or sinking fund provisions applicable to the common stock. All outstanding shares of our common stock are fully paid and nonassessable, and any shares of our common stock to be issued upon an offering pursuant to this prospectus and the related prospectus supplement will be fully paid and nonassessable upon issuance.

### Warrants

The material terms and provisions of the warrants being offered pursuant to this prospectus are summarized below. This summary of some provisions of the warrants is not complete. For the complete terms of the warrants, you should refer to the form warrant filed as an exhibit to the registration statement of which this prospectus is a part.

Each unit issued in this offering includes [ ] common stock warrant(s). The warrants issued in this offering will be governed by the terms of a physical warrant certificate. Each whole warrant entitles its purchaser to purchase one share of our common stock at a price equal to [ ] per share at any time for up to [ ] after the closing of this offering. The holder of a warrant will not be deemed a holder of our underlying common stock until the warrant is exercised.

Subject to certain limitations as described below the warrants are immediately exercisable and expire on the [ ] anniversary of the date of issuance. Subject to limited exceptions, a holder of warrants will not have the right to exercise any portion of its warrants 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 such exercise.

The exercise price and the number of shares issuable upon exercise of the warrants is subject to appropriate adjustment in the event of recapitalization events, stock dividends, stock splits, stock combinations, reclassifications, reorganizations or similar events affecting our common stock, and also upon any distributions of assets, including cash, stock or other property to our stockholders. The warrant holders must pay the exercise price in cash upon exercise of the warrants, unless such warrant holders are utilizing the cashless exercise provision of the warrants. After the close of business on the expiration date, unexercised warrants will become void.

In addition, in the event we consummate a merger or consolidation with or into another person or other reorganization event in which our common shares are converted or exchange for securities, cash or other property, or we sell, lease, license, assign, transfer, convey or otherwise dispose of all or substantially all of our assets or we or another person acquire 50% or more of our outstanding common shares, then following such event, the holders of the warrants will be entitled to receive upon exercise of the warrants the same kind and amount of securities, cash or property which the holders would have received had they exercised the warrants immediately prior to such fundamental transaction. Any successor to us or surviving entity shall assume the obligations under the warrants. In addition, as further described in the form of warrant filed as an exhibit to the registration statement of which this prospectus forms a part, in the event of any fundamental transaction completed for cash, or a going private transaction under Rule 13e-3 of the Exchange Act, or involving a person not trading on a national securities exchange, the holders of the warrants will have the right to require us to purchase the warrants for an amount in cash that is determined in accordance with a formula set forth in the warrants.

Upon the holder's exercise of a warrant, we will issue the shares of common stock issuable upon exercise of the warrant within three business days following our receipt of notice of exercise and payment of the exercise price.

Prior to the exercise of any warrants to purchase common stock, holders of the warrants will not have any of the rights of holders of the common stock purchasable upon exercise, including the right to vote or to receive any payments of dividends on the common stock purchasable upon exercise.

Warrant holders may exercise warrants only if the issuance of the common shares upon exercise of the warrants is covered by an effective registration statement, or an exemption from registration is available under the Securities Act and the securities laws of the state in which the holder resides. We intend to use commercially reasonable efforts to have the registration statement, of which this prospectus forms a part, effective when the warrants are exercised. The warrant holders must pay the exercise price in cash upon exercise of the warrants unless there is not an effective registration statement covering the issuance of the shares underlying the warrants (in which case, the warrants may be exercised via a "cashless" exercise provision).

#### Anti-Takeover Provisions

Our certificate of incorporation and bylaws include a number of provisions that could deter hostile takeovers or delay or prevent changes in control of our company, including the following:

- only the chairman of the board, the chief executive officer, the president or a majority of our board of directors may call special meetings of stockholders, and the business transacted at special meetings of stockholders is limited to the business stated in the notice of such meetings;

- advance notice procedures for stockholders seeking to bring business before our annual meeting of stockholders or to nominate candidates for election as directors at our annual meeting of stockholders, including certain requirements regarding the form and content of a stockholder's notice;

  - our board of directors may designate the terms of and issue new series of preferred stock;

- unless otherwise required by our bylaws, our certificate of incorporation or by law, our board may amend our bylaws without stockholder approval; and

only our board may fill vacancies on our board of directors.

In addition, we are subject to Section 203 of the Delaware General Corporation Law, which prohibits a Delaware corporation from engaging in any “business combination” with an “interested stockholder,” for a period of three years after the date of the transaction in which a person became an “interested stockholder,” unless:

prior to such date the board of directors of the corporation approved either the “business combination” or the transaction that resulted in the stockholder becoming an “interested stockholder”;

upon consummation of the transaction which resulted in the stockholder becoming an “interested stockholder,” the “interested stockholder” owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of voting shares outstanding (but not the voting shares owned by the “interested stockholder”) those shares owned (1) by persons who are directors and also officers and (2) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or

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



A “business combination” includes mergers, stock or asset sales and other transactions resulting in a financial benefit to the “interested stockholders.” An “interested stockholder” is a person who, together with affiliates and associates, owns (or within three years, did own) 15% or more of the corporation’s voting stock. Although Section 203 permits us to elect not to be governed by its provisions, we have not made this election. As a result of the application of Section 203, our potential acquirers may be discouraged from attempting to effect an acquisition transaction with us, thereby possibly depriving holders of our securities of certain opportunities to sell or otherwise dispose of such securities at above-market prices pursuant to such transactions.

#### Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company.

#### Listing

The shares of our common stock are currently quoted on the OTCQB under the symbol “BLFS.” We have applied for the listing of our common stock on the Nasdaq Capital Market under the symbol “BLFS.” We do not intend to apply for listing of the warrants on any securities exchange or other trading system.

### PLAN OF DISTRIBUTION

Ladenburg Thalmann & Co. Inc., which we refer to herein as the placement agent, has agreed to act as exclusive placement agent in connection with this offering subject to the terms and conditions of the placement agency agreement dated [ ], 2014. The placement agent is not purchasing or selling any units offered by this prospectus, nor is it required to arrange the purchase or sale of any specific number or dollar amount of units, but has agreed to use its best efforts to arrange for the sale of all of the units offered hereby. Therefore, we will enter into a purchase agreement directly with investors in connection with this offering and we may not sell the entire amount of units offered pursuant to this prospectus. This is a “best efforts” offering and there can be no assurance that we will sell the entire amount of units pursuant to this prospectus.

We have agreed: (A) to pay the placement agent a cash fee equal to: (i) 7% of aggregate gross proceeds of \$1.00 up to \$5,000,000 to us from the sale of the units; (ii) 8% of aggregate gross proceeds of \$5,000,001 up to \$10,000,000 to us from the sale of the units; or 10% of the incremental amount of aggregate gross proceeds above \$10,000,000 to us from the sale of units; and (B) grant the placement agent or its designees warrants to purchase the number of shares that is equivalent to 3% of the number of shares sold in the transaction at an exercise price equal to 125% of the per share equivalent paid in the offering by investors. These warrants will contain a cashless exercise provision and piggyback registration rights for the life of these warrants. The term of these warrants will be three years from the effective date of this registration statement. Pursuant to FINRA Rule 5110(g)(1), neither the placement agent warrants nor any shares of common stock issued upon exercise of the placement agent warrants may be sold, transferred, assigned, pledged, or hypothecated, or be subject to any hedging, short sale, derivative, put, or call transaction that would result in the effective economic disposition of such securities by any person for a period of 180 days immediately following the date of effectiveness or commencement of sales of the public offering, except the transfer of any security:

- (i) by operation of law or by reason of our reorganization;
- (ii) to any FINRA member firm participating in the offering and the officers and partners thereof, if all securities so transferred remain subject to the lock-up restriction described above for the remainder of the time period;

- (iii) if the aggregate amount of our securities held by the Placement Agent or related person does not exceed 1% of the securities being offered;
- (iv) that is beneficially owned on a pro-rata basis by all equity owners of an investment fund, provided that no participating member manages or otherwise directs investments by the fund, and participating members in the aggregate do not own more than 10% of the equity in the fund; or
- (v) the exercise or conversion of any security, if all securities received remain subject to the lock-up restriction set forth above for the remainder of the time period.

Subject to compliance with FINRA Rule 5110(f)(2)(D), we have also agreed to reimburse the placement agent's reasonable out-of-pocket expenses in connection with the offering in an amount not to exceed 1% of the aggregate gross proceeds of the offering. In addition, subject to FINRA Rule 5110(f)(2)(D), we have granted to the placement agent a right of first refusal with respect to additional raises of funds by means of a public offering or a private placement of equity or debt securities during the 12 months following the closing of the offering pursuant to this prospectus. The following table shows the per unit and total placement agent's fees (excluding placement agent expenses) that we will pay to the placement agent in connection with the sale of the shares and warrants offered pursuant to this prospectus assuming the purchase of all of the units offered hereby.

|                                 |    |     |
|---------------------------------|----|-----|
| Per unit placement agent's fees | \$ | [ ] |
| Maximum offering total          | \$ | [ ] |

Because there is no minimum amount required as a condition to the closing of this offering, the actual total offering commissions, if any, are not presently determinable and may be substantially less than the maximum amount set forth above.

Our obligations to issue and sell units to the purchasers is subject to the conditions set forth in the securities purchase agreement, which may be waived by us at our discretion. A purchaser's obligation to purchase units is subject to the conditions set forth in the securities purchase agreement as well, which may also be waived.

We estimate the total offering expenses in this offering that will be payable by us, excluding the placement agent's fees, will be approximately \$[ ] which include legal, accounting and printing costs, various other fees and reimbursement of the placement agent's expenses. The foregoing does not purport to be a complete statement of the terms and conditions of the placement agent agreement and the securities purchase agreement. A copy of the placement agent agreement and the form of securities purchase agreement with investors are included as exhibits to the registration statement of which this prospectus forms a part.

The placement agent may be deemed to be an underwriter within the meaning of Section 2(a)(11) of the Securities Act, and any commissions received by it and any profit realized on the resale of the units sold by it while acting as principal might be deemed to be underwriting discounts or commissions under the Securities Act. As an underwriter, the placement agent would be required to comply with the Securities Act and the Exchange Act including without limitation, Rule 10b- 5 and Regulation M under the Exchange Act. These rules and regulations may limit the timing of purchases and sales of shares of common stock and warrants by the placement agent acting as principal. Under these rules and regulations, the placement agent: may not engage in any stabilization activity in connection with our securities; and may not bid for or purchase any of our securities or attempt to induce any person to purchase any of our securities, other than as permitted under the Exchange Act, until it has completed its participation in the distribution.

#### Indemnification

Pursuant to the placement agency agreement, we have agreed to indemnify the placement agent against certain liabilities, including liabilities under the Securities Act, and liabilities arising from breaches of representations and warranties contained in the placement agency agreement, or to contribute to payments which the placement agent or other indemnified parties may be required to make in respect of any such liabilities.

#### Determination of Offering Price

In determining the offering price for the shares of common stock and warrants, and the exercise price of the warrants, we will consider a number of factors including, but not limited to, the current market price of our common stock, trading prices of our common stock over a period of time, the illiquidity and volatility of our common stock prevailing market conditions, our historical performance, our future prospects and the future prospects of our industry in general, our capital structure, estimates of our business potential and earnings prospects, the present state of our development and an assessment of our management and the consideration of the above factors in relation to market valuation of companies engaged in businesses and activities similar to ours. Once the offering price has been determined, the common stock offering price and warrant offering price will remain fixed for the duration of the offering. In addition to prevailing market conditions, the factors considered in determining the initial public offering price were our financial information, our historical performance, our future prospects and the future prospects of our industry in general, our capital structure, estimates of our business potential and earnings prospects, the present state of our development and an assessment of our management and the consideration of the above factors in relation to market valuation of companies engaged in businesses and activities similar to ours.

It is also possible that after the offering, the shares of common stock will not trade in the public market at or above the offering price.

CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL  
DISCLOSURE

None.

LEGAL MATTERS

The validity of the shares of common stock offered by this prospectus will be passed upon for us by Dorsey and Whitney LLP. The placement agent was represented by Ellenoff Grossman & Schole LLP in the United States.

EXPERTS

The financial statements for the years ended December 31, 2012 and 2011, consisting of our balance sheets as of December 31, 2012 and 2011, and the related statements of operations, shareholders' equity (deficiency), and cash flows for the years then ended, included in this prospectus have been audited by Peterson Sullivan LLP, independent registered public accounting firm, to the extent and for the periods set forth in their report appearing elsewhere herein, and are included in reliance upon such report given upon the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the informational requirements of the Securities Exchange Act of 1934 and are required to file annual, quarterly and other reports, proxy statements and other information with the SEC. You may inspect and copy these reports, proxy statements and other information at the public reference facilities maintained by the SEC in Washington, D.C. (100 F Street N.E., Washington, D.C. 20549). You may obtain information on the operation of the public reference rooms by calling the SEC at (800) SEC-0330. Additionally, the SEC maintains an Internet site (<http://www.sec.gov>) that contains our filed reports, proxy and information statements, and other information that we file electronically with the SEC.

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## BIOLIFE SOLUTIONS, INC.

## Balance Sheets

(unaudited)

|   | September 30,<br>2013 | December 31,<br>2012 |
|---|-----------------------|----------------------|
| Assets  |                       |                      |
| Current assets  |                       |                      |
| Cash and cash equivalents   | \$ 79,287             | \$ 196,478           |
| Accounts receivable, trade, net of allowance for doubtful accounts of \$1,100 at September 30, 2013 and December 31, 2012   | 1,026,858             | 600,153              |
| Inventories   | 409,195               | 656,397              |
| Prepaid expenses and other current assets   | 140,077               | 174,731              |
| Total current assets  | 1,655,417             | 1,627,759            |
| Property and equipment  |                       |                      |
| Leasehold improvements  | 1,121,362             | 919,035              |
| Furniture and computer equipment  | 300,143               | 288,725              |
| Manufacturing and other equipment   | 763,135               | 741,771              |
| Subtotal  | 2,184,640             | 1,949,531            |
| Less: Accumulated depreciation  | (798,335)             | (615,085)            |
| Net property and equipment  | 1,386,305             | 1,334,446            |
| Long term deposits  | 36,166                | 36,166               |
| Deferred financing costs, net   | 129,136               | 171,458              |
| Total assets  | \$ 3,207,024          | \$ 3,169,829         |
| Liabilities and Shareholders' Equity (Deficiency)   |                       |                      |
| Current liabilities   |                       |                      |
| Accounts payable  | \$ 840,498            | \$ 862,492           |
| Accrued expenses and other current liabilities  | 52,532                | 8,495                |
| Accrued compensation  | 224,625               | 363,101              |
| Deferred rent   | 111,250               | 111,250              |
| Deferred revenue  | —                     | 20,000               |
| Total current liabilities   | 1,228,905             | 1,365,338            |
| Long term liabilities   |                       |                      |
| Promissory notes payable, related parties   | 10,603,127            | 10,603,127           |
| Accrued interest, related parties   | 3,316,055             | 2,759,391            |
| Deferred rent, long term  | 918,307               | 838,829              |
| Deferred revenue, long term   | —                     | 89,167               |
| Total liabilities   | 16,066,394            | 15,655,852           |
| Commitments and Contingencies (Note 9)  |                       |                      |
| Shareholders' equity (deficiency)   |                       |                      |
| Common stock, \$0.001 par value; 150,000,000 shares authorized, 70,414,877 and 69,679,854 shares issued and outstanding at September 30, 2013 and December 31, 2012, respectively | 70,415                | 69,680               |

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|   |              |              |
|---|--------------|--------------|
| Additional paid-in capital                              | 43,480,884   | 43,255,374   |
| Accumulated deficit                                     | (56,410,669) | (55,811,077) |
| Total shareholders' equity (deficiency)                 | (12,859,370) | (12,486,023) |
| Total liabilities and shareholders' equity (deficiency) | \$ 3,207,024 | \$ 3,169,829 |

The accompanying Notes to Financial Statements are an integral part of the financial statements

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## BIOLIFE SOLUTIONS, INC.

## Statements of Operations

(unaudited)

|  | Three Months<br>Ended September 30, |              | Nine Months<br>Ended September 30, |                |
|--|-------------------------------------|--------------|------------------------------------|----------------|
|  | 2013                                | 2012         | 2013                               | 2012           |
| <b>Revenue</b>   |                                     |              |                                    |                |
| Product sales  | \$2,170,491                         | \$1,676,480  | \$6,051,354                        | \$3,599,770    |
| Licensing revenue  | —                                   | 5,000        | 609,167                            | 15,000         |
| Total revenue  | 2,170,491                           | 1,681,480    | 6,660,521                          | 3,614,770      |
| Cost of product sales  | 1,281,634                           | 1,086,031    | 3,817,737                          | 2,073,909      |
| Gross profit   | 888,857                             | 595,449      | 2,842,784                          | 1,540,861      |
| <b>Operating expenses</b>  |                                     |              |                                    |                |
| Research and development   | 160,528                             | 110,689      | 361,404                            | 353,837        |
| Sales and marketing  | 208,080                             | 145,735      | 625,600                            | 379,774        |
| General and administrative   | 630,342                             | 487,733      | 1,856,386                          | 1,441,852      |
| Total operating expenses   | 998,950                             | 744,157      | 2,843,390                          | 2,175,463      |
| Operating loss   | (110,093 )                          | (148,708 )   | (606 )                             | (634,602 )     |
| <b>Other income (expenses)</b>   |                                     |              |                                    |                |
| Other income   | —                                   | —            | —                                  | 94,253         |
| Interest expense   | (185,554 )                          | (185,554 )   | (556,664 )                         | (547,875 )     |
| Gain on disposal of property and equipment   | —                                   | 431          | —                                  | 368            |
| Amortization of deferred financing costs   | (14,263 )                           | (18,397 )    | (42,322 )                          | (60,142 )      |
| Total other income (expenses)  | (199,817 )                          | (203,520 )   | (598,986 )                         | (513,396 )     |
| Net Loss   | \$(309,910 )                        | \$(352,228 ) | \$(599,592 )                       | \$(1,147,998 ) |
| Basic and diluted net loss per common share  | \$(0.00 )                           | \$(0.01 )    | \$(0.01 )                          | \$(0.02 )      |
| Basic and diluted weighted average common shares used to calculate net loss per common share | 70,106,312                          | 69,679,854   | 70,005,207                         | 69,679,854     |

The accompanying Notes to Financial Statements are an integral part of the financial statements



## BIOLIFE SOLUTIONS, INC.

## Statements of Cash Flows

(unaudited)

|   | Nine Month Period Ended<br>September 30, |               |
|---|--|---------------|
|   | 2013                                     | 2012          |
| Cash flows from operating activities  |  |               |
| Net loss  | \$ (599,592)                             | \$(1,147,998) |
| Adjustments to reconcile net loss to net cash provided by operating activities                            |  |               |
| Depreciation  | 183,250                                  | 110,018       |
| Gain on disposal of property and equipment  | —  | (368)         |
| Stock-based compensation expense  | 175,787                                  | 154,747       |
| Amortization of deferred financing costs  | 42,322                                   | 60,142        |
| Lease incentives received from landlord, net of amortization of deferred rent related to lease incentives | 88,258                                   | 766,082       |
| Change in operating assets and liabilities  |  |               |
| (Increase) Decrease in  |  |               |
| Accounts receivable, trade  | (426,705)                                | (250,800)     |
| Inventories   | 247,202                                  | (343,255)     |
| Prepaid expenses and other current assets   | 34,654                                   | (32,470)      |
| Increase (Decrease) in  |  |               |
| Accounts payable  | (21,994)                                 | 661,180       |
| Accrued compensation and other current liabilities  | (94,439)                                 | 129,786       |
| Accrued interest, related parties   | 556,664                                  | 547,875       |
| Deferred rent   | (8,780)                                  | 46,189        |
| Deferred revenue  | (109,167)                                | (15,000)      |
| Net cash provided by operating activities   | 67,460                                   | 686,128       |
| Cash flows from investing activities  |  |               |
| Cash received from sale of property and equipment   | —  | 1,400         |
| Purchase of property and equipment  | (235,109)                                | (1,171,863)   |
| Net cash used in investing activities   | (235,109)                                | (1,170,463)   |
| Cash flows from financing activities  |  |               |
| Proceeds from exercise of common stock options and warrants   | 50,458                                   | —             |
| Proceeds from notes payable   | —  | 475,000       |
| Net cash provided by financing activities   | 50,458                                   | 475,000       |
| Net decrease in cash and cash equivalents   | (117,191)                                | (9,335)       |
| Cash and cash equivalents - beginning of period   | 196,478                                  | 16,864        |
| Cash and cash equivalents - end of period   | \$ 79,287                                | \$ 7,529      |
| Non-cash financing activities   |  |               |

|   |   |         |
|---|---|---------|
| Deferred financing costs from issuance of warrants (See Note 7) | — | 137,955 |
|---|---|---------|

The accompanying Notes to Financial Statements are an integral part of the financial statements

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BIOLIFE SOLUTIONS, INC.

Notes to Financial Statements  
(unaudited)

1. Business

BioLife Solutions, Inc. ("BioLife," "us," "we," "our," or the "Company") develops, manufactures and markets patented hypothermic storage and cryopreservation solutions for cells and tissues. The Company's proprietary HypoThermosol® and CryoStor® platform of solutions are marketed to academic and commercial organizations involved in the biobanking, drug discovery, and regenerative medicine markets. BioLife's products are serum-free and protein-free, fully defined, and are formulated to reduce preservation-induced, delayed-onset cell damage and death. BioLife's enabling technology provides academic and clinical researchers significant improvements in post-thaw cell, tissue, and organ viability and function. Additionally, for our direct, distributor, and contract customers, we perform custom formulation, fill, and finish services.

2. Liquidity

We have incurred annual operating losses since inception, and may continue to incur operating losses. As of September 30, 2013, our accumulated deficit was \$56.4 million. We may not be able to successfully achieve or sustain profitability. Successful transition to profitable operations is dependent upon achieving a level of revenues adequate to support our cost structure.

3. Summary of Significant Accounting Policies

Basis of Presentation

We have prepared the accompanying unaudited financial statements pursuant to the rules and regulations of the Securities and Exchange Commission (the "SEC"). Pursuant to these rules and regulations, we have condensed or omitted certain information and footnote disclosures we normally include in our annual financial statements prepared in accordance with accounting principles generally accepted in the United States of America ("GAAP"). In management's opinion, we have made all adjustments (consisting only of normal, recurring adjustments) necessary to fairly present our financial position, results of operations and cash flows. Our interim period operating results do not necessarily indicate the results that may be expected for any other interim period or for the full year. These financial statements and accompanying notes should be read in conjunction with the financial statements and notes thereto in our Annual Report on Form 10-K for the year ended December 31, 2012 on file with the SEC.

There have been no material changes to our significant accounting policies as compared to the significant accounting policies described in the financial statements in our Annual Report on Form 10-K for the year ended December 31, 2012.

Fair value of financial instruments

The carrying value of cash and cash equivalents approximate their fair value (determined based on level 1 inputs in the fair value hierarchy) based on the short-term nature of these financial instruments. The carrying values of notes payable and accrued interest approximate their fair value (determined based on level 3 inputs in the fair value hierarchy) because interest rates of notes payable approximate market interest rates.

Revenue recognition – license revenue

Revenue related to licensing agreement activity is recognized over the estimated term of the service period or when no further performance obligations exist. Payments received in advance of the related licensing agreement period are recorded as deferred revenue and recognized when earned. During the first quarter of 2013, we negotiated a new intellectual property license agreement that provides one customer with limited access to our intellectual property under certain conditions. This customer paid upfront fees for the specific rights and there are no future performance obligations. The upfront fee of \$500,000 was recognized as revenue during the quarter and \$109,167 in deferred revenue associated with this customer was recognized as all future performance obligations associated with the previous license agreements were cancelled with the agreement signed in the first quarter of 2013.

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#### Concentrations of credit risk and business risk

In the three and nine months ended September 30, 2013, we derived approximately 54% and 55%, respectively, of our product revenue from our relationship with one contract manufacturing customer. No other customer accounted for more than 10% of revenue in the three or nine months ended September 30, 2013. At September 30, 2013, one contract manufacturing customer accounted for 39% of gross accounts receivable and no other customer accounted for more than 10% of gross accounts receivable. In the three and nine months ended September 30, 2012, we derived approximately 60% and 38%, respectively, of our product revenue from our relationship with one contract manufacturing customer, which we commenced deliveries to in the second quarter of 2012. At December 31, 2012, one contract manufacturing customer accounted for 36% of gross accounts receivable and one other customer accounted for 11% of gross accounts receivable. All license revenue recognized in the nine months ended September 30, 2013 and 2012 was derived from one customer.

#### Stock-based compensation

The value, at the date of grant, of stock awarded under restricted stock unit grants is amortized as compensation expense over the vesting period.

#### Recent Accounting Pronouncements

There have been no new accounting pronouncements during the nine month period ended September 30, 2013, as compared to our Annual Report on Form 10-K for the year ended December 31, 2012, that are of significance, or potential significance, to us.

#### 4. Inventory

Inventory consists of the following at September 30, 2013 and December 31, 2012:

|                  | September<br>30,<br>2013 | December<br>31,<br>2012 |
|------------------|--------------------------|-------------------------|
| Raw materials    | \$ 192,096               | \$ 398,510              |
| Work in progress | 150,784                  | 116,319                 |
| Finished goods   | 66,315                   | 141,568                 |
| Total            | \$ 409,195               | \$ 656,397              |

During the nine months ended September 30, 2012, the Company recorded a nonreciprocal, non-monetary receipt of inventory in the amount of \$87,215. This amount was also recorded as Other Income in the Statement of Operations during the nine month period ended September 30, 2012. The transaction was accounted for at fair value on the date the inventory was received.

#### 5. Deferred Rent

Deferred rent consists of the following at September 30, 2013 and December 31, 2012:

|  | September<br>30,<br>2013 | December 31,<br>2012 |
|--|--------------------------|----------------------|
| Landlord-funded leasehold improvements | \$ 1,059,186             | \$ 900,989           |

|                                   |              |            |
|-----------------------------------|--------------|------------|
| Less accumulated amortization     | (109,127     | (39,187)   |
| Total (current portion \$111,250) | 950,059      | 861,802    |
| Straight line rent adjustment     | 79,498       | 88,277     |
| Total deferred rent               | \$ 1,029,557 | \$ 950,079 |

During the nine month period ended September 30, 2013, the Company recorded an additional \$191,583 in deferred rent relating to leasehold improvements funded by the Company's landlord as incentives under the facility lease, offset by payments to the landlord of \$33,386. During the three and nine month periods ended September 30, 2013, the Company recorded \$23,925 and \$69,940, respectively, in deferred rent amortization of these landlord funded leasehold improvements.

Straight line rent adjustment represents the difference between cash rent payments and the recognition of rent expense on a straight-line basis over the terms of the lease.

## 6. Share-based Compensation

## Stock Options

The fair value of share-based payments made with stock options to employees and non-employee directors was estimated on the measurement date using the Black-Scholes model using the following weighted average assumptions.

|                          | Three Month Period Ended |   |                    |   | Nine Month Period Ended |   |                    |   |
|--------------------------|--------------------------|---|--------------------|---|-------------------------|---|--------------------|---|
|                          | September 30, 2013       |   | September 30, 2012 |   | September 30, 2013      |   | September 30, 2012 |   |
| Risk free interest rate  | 2.25                     | % | 0.71               | % | 2.25                    | % | 0.78               | % |
| Dividend yield           | 0.0                      | % | 0.0                | % | 0.0                     | % | 0.0                | % |
| Expected term (in years) | 7                        |   | 7                  |   | 7                       |   | 6.6                |   |
| Volatility               | 105.20                   | % | 101.57             | % | 105.20                  | % | 102.76             | % |

We recorded stock compensation expense for the three and nine month periods ended September 30, 2013 and 2012, as follows:

|                                  | Three Month Period Ended |                    | Nine Month Period Ended |                    |
|----------------------------------|--------------------------|--------------------|-------------------------|--------------------|
|                                  | September 30, 2013       | September 30, 2012 | September 30, 2013      | September 30, 2012 |
| Research and development costs   | \$5,893                  | \$6,954            | \$19,801                | \$20,441           |
| Sales and marketing costs        | 1,265                    | 630                | 2,525                   | 840                |
| General and administrative costs | 71,294                   | 42,720             | 120,608                 | 118,542            |
| Cost of product sales            | 9,782                    | 6,830              | 32,853                  | 14,924             |
| Total                            | \$88,234                 | \$57,134           | \$175,787               | \$154,747          |

Management applies an estimated forfeiture rate that is derived from historical employee termination data. The estimated forfeiture rate applied for the three and nine month periods ended September 30, 2013 and 2012 was approximately 7%.

The following is a summary of stock option activity for the nine month period ended September 30, 2013, and the status of stock options outstanding at September 30, 2013:

|   | Nine Month Period Ended |                          |
|---|-------------------------|--------------------------|
|   | September 30, 2013      | Wtd. Avg. Exercise Price |
|   | Shares                  | Price                    |
| Outstanding at beginning of year                | 20,329,602              | \$0.09                   |
| Granted   | 175,000                 | 0.75                     |
| Exercised                                       | (355,855 )              | 0.07                     |
| Unvested Shares Forfeited                       | (380,000 )              | 0.12                     |
| Expired   | (25,000 )               | 0.08                     |
| Outstanding at September 30, 2013               | 19,743,747              | \$0.09                   |
| Stock options exercisable at September 30, 2013 | 16,261,588              | \$0.08                   |

Fair value of options granted during the three and nine months ended September 30, 2013 was approximately \$0.63. Weighted average fair value of options granted was \$0.11 and \$0.08 per share for the three and nine month periods ended September 30, 2012, respectively.

As of September 30, 2013, there was \$13,838,469 of aggregate intrinsic value of outstanding stock options, including \$11,565,711 of aggregate intrinsic value of exercisable stock options. Intrinsic value is the total pretax intrinsic value for all “in-the-money” options (i.e., the difference between the Company’s closing stock price on the last trading day of the quarter and the exercise price, multiplied by the number of shares) that would have been received by the option holders had all option holders exercised their options on September 30, 2013. This amount will change based on the fair market value of the Company’s stock.

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As of September 30, 2013, we had approximately \$342,383 of unrecognized compensation expense related to unvested stock options. We expect to recognize this compensation expense over a weighted average period of approximately 2.1 years.

#### Restricted Stock

During the three months ended September 30, 2013, the Company granted 66,667 restricted stock units to a Director under the 2013 Performance Incentive Plan, which was approved on June 20, 2013. The stock units were granted at the price of \$0.75 per share, which was the fair value of the stock on the grant date. The Company recognized \$50,000 in stock compensation related to this grant in the third quarter of 2013, which is included in General and Administrative expenses. This grant was converted to Common Stock upon grant, as it was fully vested on the date of the grant. At September 30, 2013, there were no unvested restricted stock units outstanding.

#### 7. Warrants

At September 30, 2013, we had 7,406,250 warrants outstanding and exercisable with a weighted average exercise price of \$0.07. There were no warrants issued, forfeited or expired in the nine month period ended September 30, 2013. During the nine months ended September 30, 2013, 312,500 warrants were exercised with a value of \$0.08 per share, for proceeds of \$25,000. The outstanding warrants have expiration dates between November 2013 and May 2017.

During the quarter ended June 30, 2012, the Company issued a total of 2,000,000 warrants to the current note holders as consideration for restructuring of their existing promissory notes. The warrants were valued using the Black-Scholes option pricing model resulting in a total value of \$137,995 which was recorded as Deferred Financing Costs on the Balance Sheet and is being amortized to expense over the revised term of the notes.

During the three and nine month periods ended September 30, 2013, the Company recorded \$14,263 and \$42,322, respectively, in amortization of deferred financing costs. During the three and nine month periods ended September 30, 2012, the Company recorded \$18,397 and \$60,142, respectively, in amortization of deferred financing costs.

#### 8. Net Loss per Common Share

Basic net loss per common share is calculated by dividing the net loss by the weighted average number of common shares outstanding during the period. Diluted earnings per share is calculated using the weighted average number of common shares outstanding plus dilutive common stock equivalents outstanding during the period. Common stock equivalents are excluded for the three and nine month periods ended September 30, 2013 and 2012, respectively, since the effect is anti-dilutive due to the Company's net losses. Common stock equivalents include stock options and warrants.

Basic weighted average common shares outstanding, and the potentially dilutive securities excluded from loss per share computations because they are anti-dilutive, are as follows as of September 30, 2013 and 2012, respectively:

|  | Three Month Period Ended<br>September 30, |            | Nine Month Period Ended<br>September 30, |            |
|--|---|------------|--|------------|
|  | 2013                                      | 2012       | 2013                                     | 2012       |
| Basic and diluted weighted average common stock shares outstanding         | 70,106,312                                | 69,679,854 | 70,005,207                               | 69,679,854 |
| Potentially dilutive securities excluded from loss per share computations: |   |            |  |            |

|                                |            |            |            |            |
|--------------------------------|------------|------------|------------|------------|
| Common stock options           | 19,743,747 | 20,248,227 | 19,743,747 | 20,248,227 |
| Common stock purchase warrants | 7,406,250  | 7,718,750  | 7,406,250  | 7,718,750  |

## 9. Commitments & Contingencies

### Legal Proceedings

We are a party in a number of legal matters filed in the state of New York by the Company or John G. Baust, the Company's former Chief Executive Officer, and members of his extended family, that are described more fully in the Company's Annual Report on Form 10-K for the year ended December 31, 2012. During the nine months ended September 30, 2013, there were no significant developments related to these complaints. We have not made any accrual related to future litigation outcomes as of September 30, 2013 and December 31, 2012.

### Leases

In November of 2012 we signed an amended lease agreement, which expanded the premises leased by us from the landlord to approximately 26,000 rentable square feet. The term of the lease was extended to July 31, 2021. The amendment includes two (2) options to extend the term of the lease, each option is for an additional period of five (5) years, with the first extension term commencing, if at all, on August 1, 2021, and the second extension term commencing, if at all, immediately following the expiration of the first extension term. In accordance with the amended lease agreement, our monthly base rent increased to approximately \$46,000 effective August 1, 2013, with scheduled annual increases each August. We will be required to pay an amount equal to our proportionate share of certain taxes and operating expenses.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders  
BioLife Solutions, Inc.  
Bothell, Washington

We have audited the accompanying balance sheets of BioLife Solutions, Inc. ("the Company") as of December 31, 2012 and 2011, and the related statements of operations, shareholders' equity (deficiency), 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 the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Company has determined that it is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. Our audits 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 includes examining, on a test basis, evidence supporting the amounts and disclosures in the 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 financial statements referred to above present fairly, in all material respects, the financial position of BioLife Solutions, Inc. as of December 31, 2012 and 2011, and the results of its operations and its cash flows for the years then ended, in conformity with accounting principles generally accepted in the United States.

/S/ PETERSON SULLIVAN LLP

Seattle, Washington  
March 29, 2013

## BioLife Solutions, Inc.

## Balance Sheets

|  | December 31,<br>2012 | December 31,<br>2011 |
|--|----------------------|----------------------|
| Assets   |                      |                      |
| Current assets   |                      |                      |
| Cash and cash equivalents  | \$ 196,478           | \$ 16,864            |
| Accounts receivable, trade, net of allowance for doubtful accounts of \$1,100 at December 31, 2012 and 2011                            | 600,153              | 547,143              |
| Inventories  | 656,397              | 505,956              |
| Prepaid expenses and other current assets  | 174,731              | 90,444               |
| Total current assets   | 1,627,759            | 1,160,407            |
| Property and equipment   |                      |                      |
| Leasehold improvements   | 919,035              | —                    |
| Furniture and computer equipment   | 288,725              | 177,013              |
| Manufacturing and other equipment  | 741,771              | 623,782              |
| Subtotal   | 1,949,531            | 800,795              |
| Less: Accumulated depreciation   | (615,085)            | (447,393)            |
| Net property and equipment   | 1,334,446            | 353,402              |
| Long term deposits   | 36,166               | 36,166               |
| Deferred financing costs, net  | 171,458              | 112,042              |
| Total assets   | \$ 3,169,829         | \$ 1,662,017         |
| Liabilities and Shareholders' Equity (Deficiency)  |                      |                      |
| Current liabilities  |                      |                      |
| Accounts payable   | \$ 862,492           | \$ 403,103           |
| Accrued expenses and other current liabilities   | 8,495                | 57,315               |
| Accrued compensation   | 363,101              | 86,563               |
| Deferred rent  | 111,250              | 12,267               |
| Deferred revenue   | 20,000               | 20,000               |
| Total current liabilities  | 1,365,338            | 579,248              |
| Long term liabilities  |                      |                      |
| Promissory notes payable, related parties  | 10,603,127           | 10,128,127           |
| Accrued interest, related parties  | 2,759,391            | 2,025,961            |
| Deferred rent, long term   | 838,829              | —                    |
| Deferred revenue, long term  | 89,167               | 109,167              |
| Total liabilities  | 15,655,852           | 12,842,503           |
| Commitments and Contingencies (Note 8)   |                      |                      |
| Shareholders' equity (deficiency)  |                      |                      |
| Common stock, \$0.001 par value; 100,000,000 shares authorized, 69,679,854 shares issued and outstanding at December 31, 2012 and 2011 | 69,680               | 69,680               |
| Additional paid-in capital   | 43,255,374           | 42,901,325           |
| Accumulated deficit  | (55,811,077)         | (54,151,491)         |
| Total shareholders' equity (deficiency)  | (12,486,023)         | (11,180,486)         |

|   |              |              |
|---|--------------|--------------|
| Total liabilities and shareholders' equity (deficiency) | \$ 3,169,829 | \$ 1,662,017 |
|---|--------------|--------------|

The accompanying Notes to Financial Statements are an integral part of these financial statements

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## BioLife Solutions, Inc.

## Statements of Operations

|  | Years Ended December 31, |                |
|--|--------------------------|----------------|
|  | 2012                     | 2011           |
| Revenue  |                          |                |
| Product sales  | \$ 5,642,990             | \$ 2,738,729   |
| Licensing revenue  | 20,000                   | 20,000         |
| Total revenue  | 5,662,990                | 2,758,729      |
| Cost of product sales  | 3,370,571                | 1,355,571      |
| Gross profit   | 2,292,419                | 1,403,158      |
| Operating expenses   |                          |                |
| Research and development   | 463,638                  | 516,454        |
| Sales and marketing  | 619,202                  | 267,080        |
| General and administrative   | 2,151,817                | 1,829,307      |
| Total operating expenses   | 3,234,657                | 2,612,841      |
| Operating loss   | (942,238)                | (1,209,683)    |
| Other income (expenses)  |                          |                |
| Other income   | 94,253                   | 46             |
| Interest expense   | (733,430)                | (670,986)      |
| Amortization of deferred financing costs   | (78,539)                 | (74,403)       |
| Gain (loss) on disposal of property and equipment  | 368                      | (1,613)        |
| Total other income (expenses)  | (717,348)                | (746,956)      |
| Net Loss   | \$ (1,659,586)           | \$ (1,956,639) |
| Basic and diluted net loss per common share  | \$ (0.02)                | \$ (0.03)      |
| Basic and diluted weighted average common shares used to calculate net loss per common share | 69,679,854               | 69,679,854     |

The accompanying Notes to Financial Statements are an integral part of these financial statements

## BioLife Solutions, Inc.

## Statements of Shareholders' Equity (Deficiency)

|  | Common Stock |           | Additional    | Accumulated     | Total           |
|--|--------------|-----------|---------------|-----------------|-----------------|
|  | Shares       | Amount    | Paid-in       | Deficit         | Shareholders'   |
|  |              |           | Capital       |                 | Equity          |
|  |              |           |               |                 | (Deficiency)    |
| Balance, December 31, 2010                                       | 69,679,854   | \$ 69,680 | \$ 42,576,260 | \$ (52,194,852) | \$ (9,548,912)  |
| Stock-based compensation   | —            | —         | 235,840       | —               | 235,840         |
| Warrants issued as consideration<br>for deferred financing costs | —            | —         | 89,225        | —               | 89,225          |
| Net loss   | —            | —         | —             | (1,956,639)     | (1,956,639)     |
| Balance, December 31, 2011                                       | 69,679,854   | \$ 69,680 | \$ 42,901,325 | \$ (54,151,491) | \$ (11,180,486) |
| Stock-based compensation   | —            | —         | 216,094       | —               | 216,094         |
| Warrants issued as consideration<br>for deferred financing costs | —            | —         | 137,955       | —               | 137,955         |
| Net loss   | —            | —         | —             | (1,659,586)     | (1,656,586)     |
| Balance, December 31, 2012                                       | 69,679,854   | \$ 69,680 | \$ 43,255,374 | \$ (55,811,077) | \$ (12,486,023) |

The accompanying Notes to Financial Statements are an integral part of the financial statements

## BioLife Solutions, Inc.

## Statements of Cash Flows

|  | Years Ended December 31, |                |
|--|--------------------------|----------------|
|  | 2012                     | 2011           |
| Cash flows from operating activities   |                          |                |
| Net loss   | \$ (1,659,586            | \$ (1,956,639) |
| Adjustments to reconcile net loss to net cash provided by (used in) operating activities |                          |                |
| Depreciation   | 169,644                  | 97,115         |
| Loss (gain) on disposal of property and equipment  | (368                     | 1,613          |
| Stock-based compensation expense   | 216,094                  | 235,840        |
| Amortization of deferred financing costs   | 78,539                   | 74,403         |
| Lease incentive received from landlord, net of amortization                              | 861,802                  | —              |
| Change in operating assets and liabilities   |                          |                |
| (Increase) Decrease in   |                          |                |
| Accounts receivable, trade   | (53,010                  | (208,244 )     |
| Inventories  | (150,441                 | (95,470 )      |
| Prepaid expenses and other current assets and long-term deposits                         | (84,287                  | (28,067 )      |
| Increase (Decrease) in   |                          |                |
| Accounts payable   | 459,389                  | 286,035        |
| Accrued compensation and other expenses and other current liabilities                    | 227,718                  | (59,756 )      |
| Accrued interest, related parties  | 733,430                  | 670,986        |
| Deferred rent  | 76,010                   | 12,267         |
| Deferred revenue   | (20,000                  | (20,000 )      |
| Net cash provided by (used in) operating activities                                      | 854,934                  | (989,917 )     |
| Cash flows from investing activities   |                          |                |
| Cash received from sale of property and equipment  | 1,400                    | 2,100          |
| Purchase of property and equipment   | (1,151,720               | (93,530 )      |
| Net cash used in investing activities  | (1,150,320               | (91,430 )      |
| Cash flows from financing activity   |                          |                |
| Proceeds from notes payable  | 475,000                  | 1,095,000      |
| Net increase in cash and cash equivalents  | 179,614                  | 13,653         |
| Cash and cash equivalents - beginning of year  | 16,864                   | 3,211          |
| Cash and cash equivalents - end of year  | \$ 196,478               | \$ 16,864      |
| Non-cash financing activities  |                          |                |
| Deferred financing costs from issuance of warrants (see note 6)                          | \$ 137,955               | \$ 89,225      |

The accompanying Notes to Financial Statements are an integral part of the financial statements



## NOTES TO FINANCIAL STATEMENTS

## 1. Organization and Significant Accounting Policies

## Business

BioLife Solutions, Inc. ("BioLife," "us," "we," "our," or the "Company") develops, manufactures and markets patented hypothermic storage and cryopreservation solutions for cells and tissues. The Company's proprietary HypoThermosol® and CryoStor® platform of solutions are marketed to academic and commercial organizations involved in the biobanking, drug discovery, and regenerative medicine markets. BioLife's products are serum-free and protein-free, fully defined, and are formulated to reduce preservation-induced, delayed-onset cell damage and death. BioLife's enabling technology provides academic and clinical researchers significant improvements in post-thaw cell, tissue, and organ viability and function. Additionally, for our direct, distributor, and contract customers, we perform custom formulation, fill, and finish services.

## Use of estimates

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates.

## Net loss per share

Basic net loss per common share is calculated by dividing the net loss by the weighted average number of common shares outstanding during the period. Diluted earnings per share is calculated using the weighted average number of common shares outstanding plus dilutive common stock equivalents outstanding during the period. Common stock equivalents are excluded for the years ending December 31, 2012 and 2011 since the effect is anti-dilutive due to the Company's net losses. Common stock equivalents include stock options and warrants.

Basic weighted average common shares outstanding, and the potentially dilutive securities excluded from loss per share computations because they are antidilutive, are as follows for the years ended December 31, 2012 and 2011:

|  | 2012       | 2011       |
|--|------------|------------|
| Basic and diluted weighted average common stock shares outstanding         | 69,679,854 | 69,679,854 |
| Potentially dilutive securities excluded from loss per share computations: |            |            |
| Common stock options   | 20,379,602 | 17,873,277 |
| Common stock purchase warrants   | 7,718,750  | 6,218,750  |

## Cash and cash equivalents

Cash equivalents consist primarily of interest-bearing money market accounts. We consider all highly liquid debt instruments purchased with an initial maturity of three months or less to be cash equivalents. We maintain cash balances that may exceed federally insured limits. We do not believe that this results in any significant credit risk.

## Inventories

Inventories represent biopreservation solutions and raw materials and are stated at the lower of cost or market. Cost is determined using the first-in, first-out (“FIFO”) method.

#### Accounts receivable

Accounts receivable are stated at principal amount, do not bear interest, and are generally unsecured. We provide an allowance for doubtful accounts based on an evaluation of customer account balances past due ninety days from the date of invoicing. Accounts considered uncollectible are charged against the established allowance.

#### Property and equipment

Furniture and equipment are stated at cost and are depreciated using the straight-line method over estimated useful lives of three to ten years.

#### Deferred Financing Costs

Deferred financing costs consist of fees associated with obtaining or restructuring existing debt. These fees are amortized over the term of the related debt using the effective interest method.

#### Deferred Rent

For our operating leases, we recognize rent expense on a straight-line basis over the terms of the leases and, accordingly, we record the difference between cash rent payments and the recognition of rent expense as a deferred rent liability. Landlord-funded leasehold improvements, to the extent the improvements are not landlord property upon lease termination, are also recorded as deferred rent liabilities and are amortized as a reduction of rent expense over the non-cancelable term of the related operating lease.

#### Revenue recognition

We recognize product revenue, including shipping and handling charges billed to customers, upon shipment of product when title and risk of loss pass to customers. Shipping and handling costs are classified as part of cost of product sales. Generally, revenue related to licensing agreement activity is recognized ratably over the estimated term of the service period. Payments received in advance of the related licensing agreement period are recorded as deferred revenue and recognized when earned.

#### Income taxes

We account for income taxes using an asset and liability method which generally requires recognition of deferred tax assets and liabilities for the expected future tax effects of events that have been included in the financial statements or tax returns. Under this method, deferred tax assets and liabilities are recognized for the future tax effects of differences between tax bases of assets and liabilities, and financial reporting amounts, based upon enacted tax laws and statutory rates applicable to the periods in which the differences are expected to affect taxable income. We evaluate the likelihood of realization of deferred tax assets and provide an allowance where, in management's opinion, it is more likely than not that the asset will not be realized.

We have not recorded any liabilities for uncertain tax positions or any related interest and penalties. Our tax returns are open to audit for years ending December 31, 2009 to 2012.

#### Advertising

Advertising costs are expensed as incurred and totaled \$15,607 and \$16,521 for the years ended December 31, 2012 and 2011, respectively.

#### Fair value of financial instruments

We generally have the following financial instruments: cash and cash equivalents, accounts receivable, accounts payable, accrued expenses and notes payable. The carrying value of cash and cash equivalents, accounts receivable, accounts payable and accrued expenses approximate their fair value based on the short-term nature of these financial instruments. The carrying values of notes payable approximate their fair value because interest rates of notes payable approximate market interest rates.

#### Operating segments

As described above, our activities are directed in the life sciences field of biopreservation products and services. As of December 31, 2012 and 2011 this is the Company's only operating unit and segment.

#### Concentrations of credit risk and business risk

In 2012, we derived approximately 46% of our product revenue from our relationship with one contract manufacturing customer, which we commenced deliveries to in the second quarter of 2012. No other customer accounted for more than 10% of revenue in 2012. At December 31, 2012, our contract manufacturing customer accounted for 36% of gross accounts receivable and one other customer accounted for 11% of gross accounts receivable. Either party may terminate the agreement with our contract manufacturing customer for any reason on six months' notice. In 2011, no individual customer made up more than 10% of sales. At December 31, 2011, two customers accounted for approximately 29% of total gross accounts receivable.

Revenue from customers located in foreign countries represented 11% and 13% of total revenue during the years ended December 31, 2012 and 2011, respectively.

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## Research and development

Research and development costs are expensed as incurred.

## Stock-based compensation

We use the Black-Scholes option pricing model as our method of valuation for share-based awards. Share-based compensation expense is based on the value of the portion of the stock-based award that will vest during the period, adjusted for expected forfeitures. Our determination of the fair value of share-based awards on the date of grant using an option pricing model is affected by our stock price as well as assumptions regarding a number of highly complex and subjective variables. These variables include, but are not limited to, the expected life of the award, expected stock price volatility over the term of the award and historical and projected exercise behaviors. The estimation of share-based awards that will ultimately vest requires judgment, and to the extent actual or updated results differ from our current estimates, such amounts will be recorded in the period estimates are revised. Although the fair value of share-based awards is determined in accordance with authoritative guidance, the Black-Scholes option pricing model requires the input of highly subjective assumptions and other reasonable assumptions could provide differing results. Share-based compensation expense is recognized ratably over the applicable requisite service period based on the fair value of such share-based awards on the grant date.

The fair value of options at the date of grant is determined under the Black-Scholes option pricing model. During the years ended December 31, 2012 and 2011, the following weighted-average assumptions were used:

| Assumptions              | 2012      |   | 2011      |
|--------------------------|-----------|---|-----------|
| Risk-free rate           | 0.77      | % | 2.12      |
| Annual rate of dividends | —         |   | —         |
| Historical volatility    | 103.02    | % | 92.91     |
| Expected life            | 6.7 years |   | 6.0 years |

The risk-free interest rate was based on the U.S. Treasury yield curve in effect at the time of grant. We do not anticipate declaring dividends in the foreseeable future. Volatility was based on historical data. We utilize the simplified method as allowed by SEC Staff Accounting Bulletin No. 107 and 110 in determining option lives. The simplified method is used due to the fact that we have had significant structural changes in our business such that our historical exercise data may not provide a reasonable basis to estimate option lives.

We recognize compensation expense for only the portion of options that are expected to vest. Therefore, management applies an estimated forfeiture rate that is derived from historical employee termination data. The estimated forfeiture rate applied for the years ended December 31, 2012 and 2011 was 8.15% and 9.37%, respectively. If the actual number of forfeitures differs from those estimated by management, additional adjustments to compensation expense may be required in future periods. Our stock price volatility, option lives and expected forfeiture rates involve management's best estimates at the time of such determination, all of which impact the fair value of the option calculated under the Black-Scholes methodology and, ultimately, the expense that will be recognized over the life of the option.

## Recent accounting pronouncements

There have been no new accounting pronouncements made effective during the year ended December 31, 2012 or not yet effective, that are of significance, or potential significance, to us.

## Liquidity

We have incurred annual operating losses since inception, and may continue to incur operating losses. For the fiscal years ended December 31, 2012 and December 31, 2011, we had net losses of \$1,659,586 and \$1,956,639, respectively. As of December 31, 2012, our accumulated deficit was \$55,811,077. We may not be able to successfully achieve or sustain profitability. Successful transition to profitable operations is dependent upon achieving a level of revenues adequate to support our cost structure.

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## 2. Inventories

Inventories consist of the following at December 31, 2012 and 2011:

|                  | 2012      | 2011      |
|------------------|-----------|-----------|
| Raw materials    | \$398,510 | \$173,510 |
| Work in progress | 116,319   | 11,768    |
| Finished goods   | 141,568   | 320,678   |
| Total            | \$656,397 | \$505,956 |

## 3. Deferred Rent

Deferred rent consists of the following at December 31, 2012 and 2011:

|  | 2012      | 2011     |
|--|-----------|----------|
| Landlord-funded leasehold improvements | \$900,989 | \$—      |
| Less accumulated amortization          | (39,187 ) | —        |
| Total (current portion \$111,250)      | 861,802   | —        |
| Straight line rent adjustment          | 88,277    | 12,267   |
| Total deferred rent                    | \$950,079 | \$12,267 |

During the year ended December 31, 2012, the Company recorded \$900,989 in deferred rent relating to leasehold improvements funded by the Company's landlord as incentives under the facility lease, which was amended in March 2012 and November 2012. The deferred rent related to the leasehold improvements will be amortized over the life of the lease. Amortization commenced in the third quarter of 2012. During the year ended December 31, 2012 the Company recorded \$39,187 in deferred rent amortization of these landlord funded leasehold improvements.

In addition, during the year ended December 31, 2012, the Company recorded deferred rent of \$88,277 which represented the difference between cash rent payments and the recognition of rent expense on a straight-line basis over the terms of the lease.

## 4. Promissory Notes Payable

On May 30, 2012, each of our two most significant investors agreed to (i) increase the amount of their credit facilities to \$5,750,000 (total of \$11,500,000), and (ii) extend the date their note becomes due and payable, together with accrued interest thereon, to January 11, 2016. The notes are secured by all assets of the Company and accrue interest at the rate of 7% per annum.

## 5. Income Taxes

Income tax benefit reconciled to tax calculated at statutory rates is as follows:

|  | 2012        | 2011         |
|--|-------------|--------------|
| Federal tax (benefit) at statutory rate        | \$(564,259) | \$(665,257 ) |
| Expiration of net operating loss carryforwards | 533,950     | 1,794,072    |
| Expiration of tax credits                      | —           | 33,000       |
| Change in valuation allowance                  | 30,403      | (1,162,821)  |
| Other  | (94)        | 1,006        |
| Provision for income taxes, net                | \$—         | \$—          |

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At December 31, 2012 and 2011, the components of the Company's deferred taxes are as follows:

|                                   | 2012        | 2011        |
|-----------------------------------|-------------|-------------|
| Deferred tax assets (liabilities) |             |             |
| Net operating loss carryforwards  | \$7,824,444 | \$8,209,728 |
| Accrued compensation              | 105,767     | 29,431      |
| Depreciation                      | 4,253       | 173         |
| Stock-based compensation          | 350,401     | 276,929     |
| Accrued related party interest    | 938,193     | 688,827     |
| Other                             | 20,082      | 7,649       |
| Total                             | 9,243,140   | 9,212,737   |
| Less: Valuation allowance         | (9,243,140) | (9,212,737) |
| Net deferred tax asset            | \$—         | \$—         |

The Company has the following net operating loss tax carryforwards available at December 31, 2012:

| Year of Expiration | Net Operating Losses |
|--------------------|----------------------|
| 2013               | \$1,425,000          |
| 2014               | 1,234,000            |
| 2020               | 2,849,000            |
| 2021               | 4,168,000            |
| 2023               | 1,217,000            |
| 2024               | 646,000              |
| 2025               | 589,000              |
| 2026               | 873,000              |
| 2027               | 2,607,000            |
| 2028               | 2,512,000            |
| 2029               | 2,196,000            |
| 2030               | 1,232,000            |
| 2031               | 1,028,000            |
| 2032               | 437,000              |
| Total              | \$23,013,000         |

In the event of a significant change in the ownership of the Company, the utilization of such loss and tax credit carryforwards could be substantially limited.

## 6. Shareholders' Equity (Deficiency)

## Warrants

The following table summarizes warrant activity for the years ended December 31, 2012 and 2011:

|  | Year Ended<br>December 31, 2012 |                                | Year Ended<br>December 31, 2011 |                                |
|--|---------------------------------|--------------------------------|---------------------------------|--------------------------------|
|  | Shares                          | Wtd. Avg.<br>Exercise<br>Price | Shares                          | Wtd. Avg.<br>Exercise<br>Price |
| Outstanding at beginning of year           | 6,218,750                       | \$ 0.08                        | 4,218,750                       | \$ 0.10                        |
| Granted                                    | 2,000,000                       | 0.08                           | 2,000,000                       | 0.06                           |
| Exercised                                  | —                               | —                              | —                               | —                              |
| Forfeited/Expired                          | (500,000)                       | 0.25                           | —                               | —                              |
| Outstanding and exercisable at end of year | 7,718,750                       | \$ 0.07                        | 6,218,750                       | \$ 0.08                        |

During the years ended December 31, 2012 and December 31, 2011, the Company issued a total of 2,000,000 warrants each year to the current note holders in consideration for financing fees related to the restructuring of the existing promissory notes. The warrants were valued using the Black-Scholes option pricing model resulting in a total value of \$137,955 in 2012 and \$89,225 in 2011, which was recorded as deferred financing costs and is being amortized to expense over the term of the notes.

The outstanding warrants have expiration dates between November 2013 and May 2017.

## Stock compensation plans

During 1998, we adopted the 1998 Stock Option Plan ("the Plan"). An aggregate of 4,000,000 shares of common stock were reserved for issuance upon the exercise of options granted under the Plan. In September 2005, the shareholders approved an increase in the number of shares available for issuance to 10,000,000 shares. The Plan expired on August 31, 2008. The options are exercisable for up to ten years from the grant date. As of December 31, 2012, there were outstanding options to purchase 6,150,000 share of Company common stock under the Plan.

Subsequent to the expiration of the Plan, the Company issued, outside of the Plan, non-incentive stock options for an aggregate of 14,229,602 (net of cancellations) shares of Company common stock. All non-incentive stock options issued in 2012 and 2011 were issued outside of the Plan.

Certain options awarded during 2012 and 2011 contain provisions which allow for the automatic proportionate adjustment of the number of shares covered and the exercise price of each share in the event that the Company changes its shares of common stock by a stock dividend, stock split, combination, reclassification, exchange, merger or consolidation.

The following is a summary of stock option activity under the Plan and outside of the Plan for 2012 and 2011, and the status of stock options outstanding at December 31, 2012 and 2011:

|  | Year Ended<br>December 31, 2012 |           | Year Ended<br>December 31, 2011 |           |
|--|---------------------------------|-----------|---------------------------------|-----------|
|  | Shares                          | Wtd. Avg. | Shares                          | Wtd. Avg. |

|                                       |            | Exercise<br>Price |             | Exercise<br>Price |
|---------------------------------------|------------|-------------------|-------------|-------------------|
| Outstanding at beginning of year      | 17,873,227 | \$ 0.08           | 14,564,815  | \$ 0.09           |
| Granted                               | 3,150,000  | 0.12              | 6,220,873   | 0.08              |
| Exercised                             | -          | -                 | -           | -                 |
| Forfeited                             | (643,625)  | (0.12)            | (2,912,461) | (0.08)            |
| Outstanding at end of year            | 20,379,602 | \$ 0.09           | 17,873,227  | \$ 0.08           |
| Stock options exercisable at year end | 14,105,066 | \$ 0.08           | 9,667,990   | \$ 0.08           |

Weighted average fair value of options granted was \$0.10 and \$0.06 per share for the years ended December 31, 2012 and 2011, respectively.

As of December 31, 2012, there was \$5,124,147 of aggregate intrinsic value of outstanding stock options, including \$3,657,911 of aggregate intrinsic value of exercisable stock options. Intrinsic value is the total pretax intrinsic value for all “in-the-money” options (i.e., the difference between the Company’s closing stock price on the last trading day of 2012 and the exercise price, multiplied by the number of shares) that would have been received by the option holders had all option holders exercised their options as of December 31, 2012. This amount will change based on the fair market value of the Company’s stock.

The following table summarizes information about stock options outstanding at December 31, 2012:

| Range of Exercise Prices | Number Outstanding at December 31, 2012 | Weighted Average Remaining Contractual Life | Weighted Average Exercise Price |
|--------------------------|---|---|---------------------------------|
| \$ 0.04-\$0.07           | 2,725,000                               | 5.11  | \$ 0.06                         |
| \$ 0.08-\$0.09           | 11,522,114                              | 6.47  | \$ 0.08                         |
| \$ 0.10-\$0.31           | 6,132,488                               | 7.75  | \$ 0.11                         |
|                          | 20,379,602                              | 6.67  | \$ 0.09                         |

Total unrecognized compensation cost at December 31, 2012 of \$376,977 is expected to be recognized over a weighted average period of 2.7 years.

When options and warrants are exercised, it is the Company's policy to issue new shares.

#### 7. Related Party Transactions

We incurred \$18,636 and \$52,132 in legal fees during the years ended December 31, 2012 and 2011, respectively, for services provided by Breslow & Walker, LLP in which Howard S. Breslow, who was a director of the Company until February 4, 2013 and is a current stockholder of the Company, is a partner. At December 31, 2012 and 2011, accounts payable included \$0 and \$22,631, respectively, due to Breslow & Walker, LLP for services rendered.

We incurred \$56,000 in consulting fees during the year ended December 31, 2011 to Roderick de Greef, a director of the Company, for the task of overseeing the Company's financing activities, internal accounting functions and SEC reporting, and assisting in the search for, and reviewing, strategic alternatives, on a part-time basis. At December 31, 2011, accounts payable included \$2,500 due to Mr. de Greef for services rendered. The agreement with Mr. De Greef was terminated in August of 2011 and no costs were incurred in 2012 related to his consulting services.

#### 8. Commitments and Contingencies

##### Leases

In November of 2012 we signed an amended lease agreement, which expanded the premises leased by the Company from the landlord to approximately 26,000 rentable square feet. The term of the lease was extended to July 31, 2021. The amendment includes two (2) options to extend the term of the lease, each option is for an additional period of five (5) years, with the first extension term commencing, if at all, on August 1, 2021, and the second extension term commencing, if at all, immediately following the expiration of the first extension term. In accordance with the amended lease agreement, the Company's monthly base rent will increase to approximately \$35,000 effective January 1, 2013, and will increase to approximately \$46,000 estimated to be effective in May 2013, upon the completion of leasehold improvement, with scheduled annual increases each August. The Company will be required to pay an amount equal to the Company's proportionate share of certain taxes and operating expenses.

The following is a schedule of future minimum lease payments required under the facility leases as of December 31, 2012:

| Year Ending December 31 |         |
|-------------------------|---------|
| 2013                    | 512,000 |

|       |            |             |
|-------|------------|-------------|
|       | 2014       | 568,000     |
|       | 2015       | 581,000     |
|       | 2016       | 593,000     |
|       | 2017       | 604,000     |
|       | Thereafter | 2,265,000   |
| Total |            | \$5,123,000 |

Rental expense for this facility lease for the years ended December 31, 2012 and 2011 totaled \$486,425 and \$368,273, respectively. These amounts include the Company's proportionate share of property taxes and other operating expenses as defined by the lease.

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#### Employment agreements

We have employment agreements with the Chief Executive Officer, Chief Financial Officer, Chief Technology Officer, Chief Quality Officer, and Vice President of Manufacturing which automatically renew for successive one year periods in the event either party does not send the other a “termination notice” not less than 90 days prior to the expiration of the initial term or any subsequent term. The agreements provide for certain minimum compensation per month and incentive bonuses at the discretion of the board of directors. Under certain conditions, we may be required to continue to pay the base salary under the agreement for a period of up to two years.

#### Litigation

We are a party in a number of legal matters filed in the state of New York by the Company or John G. Baust, the Company’s former Chief Executive Officer, and members of his extended family related to damages sought due to breaches of employment and other agreements. We cannot reasonably estimate the potential loss related to these matters and therefore no accrual has been made as of December 31, 2012 or 2011.

#### 9. Supplemental Cash Flow Disclosures

##### Actual cash payments

No cash was paid for either interest expense or income taxes for the years ended December 31, 2012 and 2011.

Units

Common Stock

Warrants

PROSPECTUS

[ ], 2014

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## PART II

## INFORMATION NOT REQUIRED IN PROSPECTUS

## ITEM 13. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION

The following table lists the costs and expenses payable by the Company in connection with the offering of securities covered by this prospectus, other than any sales commissions or discounts. All amounts shown are estimates except for the SEC registration fee and the FINRA filing fee, and all of the fees and expenses will be borne by the Company.

|   | Amount  |     |
|---|---------|-----|
| Securities and Exchange Commission registration fee | \$1,288 |     |
| FINRA filing fee                                    | 2,000   |     |
| Legal fees and expenses                             |         | [ ] |
| NASDAQ listing fee                                  |         | [ ] |
| Accounting fees and expenses                        |         | [ ] |
| Printing and engraving expenses                     |         | [ ] |
| Miscellaneous expenses                              |         | [ ] |
| Total   |         | [ ] |

## ITEM 14. INDEMNIFICATION OF DIRECTORS AND OFFICERS

Section 145 of the Delaware General Corporation Law, or Delaware law, inter alia, empowers a Delaware corporation to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding (other than an action by or in the right of the corporation) by reason of the fact that such person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by him in connection with such action, suit or proceeding if he acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful. Similar indemnity is authorized for such persons against expenses (including attorneys' fees) actually and reasonably incurred in connection with the defense or settlement of any such threatened, pending or completed action or suit if such person acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation, and provided further that (unless a court of competent jurisdiction otherwise provides) such person shall not have been adjudged liable to the corporation. Any such indemnification may be made only as authorized in each specific case upon a determination by the stockholders or disinterested directors or by independent legal counsel in a written opinion that indemnification is proper because the indemnitee has met the applicable standard of conduct.

Section 145 further authorizes a corporation to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation or enterprise, against any liability asserted against him and incurred by him in any such capacity, or arising out of his status as such, whether or not the corporation would otherwise have the power to indemnify him under Section 145. We maintain policies insuring our officers and directors against certain liabilities for actions taken in such capacities, including liabilities under the Securities Act.

Our certificate of incorporation and bylaws require us to indemnify our directors to the fullest extent permitted under Delaware law or any other applicable law in effect, but if such statute or law is amended, we may change the standard of indemnification only to the extent that such amended statute or law permits us to provide broader indemnification



rights to our directors. We must indemnify such officers and employees in the same manner and to the same extent that we are required to indemnify our directors under our certificate of incorporation and bylaws. Our certificate of incorporation limits the personal liability of a director to us or our stockholders to damages for breach of the director's fiduciary duty. Pursuant to indemnification agreements we entered into with each of our directors, we are further required to indemnify our directors to the fullest extent permitted under Delaware law and our bylaws; provided that each such director shall enjoy the greater of (i) the advancement and indemnification rights permitted under our certificate of incorporation and bylaws for directors and officers as of the date of such indemnification agreement or (ii) the benefits so afforded by amendments thereto.

#### ITEM 15. RECENT SALES OF UNREGISTERED SECURITIES

On September 16, 2013, we issued an additional 312,500 common shares to an investor in exchange for \$25,000 as a result of a warrant exercise.

On February 11, 2013, we issued an additional 355,856 common shares to a former employee in exchange for \$25,458 as a result of an option exercise.

The foregoing transactions were exempt from registration pursuant to Section 4(a)(2) of the Securities Act.

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ITEM 16. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) Exhibits.

The exhibits filed with this Registration Statement are set forth on the “Exhibit Index” set forth elsewhere herein.

ITEM 17. UNDERTAKINGS

(a) 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;

(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 Securities and Exchange Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the “Calculation of Registration Fee” table in the effective registration statement; and

(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, 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, if the registrant is relying on Rule 430B, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:

(i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the

initial bona fide offering thereof. 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 effective date, 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 effective date;

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(5) That, for the purpose of determining liability under the Securities Act of 1933 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.

(b) To supplement the prospectus, after the expiration of the subscription period, to set forth the results of the subscription offer, the transactions by the underwriters during the subscription period, the amount of unsubscribed securities to be purchased by the underwriters, and the terms of any subsequent reoffering thereof. If any public offering by the underwriters is to be made on terms differing from those set forth on the cover page of the prospectus, a post-effective amendment will be filed to set forth the terms of such offering.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the 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 Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Bothell, State of Washington, on this 16th day of December, 2013.

BIOLIFE SOLUTIONS, INC.

By: /s/ Michael Rice  
Name: Michael Rice  
Title: Chief Executive Officer

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## POWERS OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Michael Rice and Daphne Taylor, or either of them as the undersigned's true and lawful attorney-in-fact and agents, with full power of substitution and resubstitution for such person and in such person's name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments, exhibits thereto, and other documents in connection therewith to this registration statement and any related registration statements necessary to register additional securities and to file the same with exhibits thereto and other documents in connection therewith with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done, as fully to all intents and purposes as such person might or could do in person, hereby ratifying and confirming all that each of said attorney-in-fact and agent, or their substitute or substitutes may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

| Signature                                      | Title  | Date                 |
|--|--|----------------------|
| /s/ Michael Rice<br>Michael Rice               | President, Chief Executive Officer<br>and<br>Chairman (Principal Executive<br>Officer)       | December 16,<br>2013 |
| /s/ Daphne Taylor<br>Daphne Taylor             | Chief Financial Officer (Principal<br>Financial Officer<br>and Principal Accounting Officer) | December 16,<br>2013 |
| /s/ Roderick de Greef<br>Roderick de Greef     | Director   | December 16,<br>2013 |
| /s/ Thomas Girschweiler<br>Thomas Girschweiler | Director   | December 16,<br>2013 |
| /s/ Raymond Cohen<br>Raymond Cohen             | Director   | December 16,<br>2013 |
| /s/ Andrew Hinson<br>Andrew Hinson             | Director   | December 16,<br>2013 |
| /s/ Rick Stewart<br>Rick Stewart               | Director   | December 16,<br>2013 |

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## EXHIBIT INDEX

The following exhibits are filed as part of, or incorporated by reference into this registration statement:

| Exhibit | Description   |
|---------|---|
| 1.1+    | Form of Placement Agent Agreement   |
| 3.1     | Amended and Restated Certificate of Incorporation of BioLife Solutions, Inc. (included as Exhibit 4.1 to the Registration Statement on Form S-8 filed on June 24, 2013)   |
| 3.2     | Amended and Restated Bylaws of BioLife Solutions, Inc., effective April 25, 2013 (included as Exhibit A to the Registrant's Definitive Information Statement on Schedule 14C filed March 27, 2013)  |
| 4.1     | Specimen Common Stock Certificate (included as Exhibit to the Registration Statement on Form S-1 filed on November 21, 1989)  |
| 4.2+    | Form of Warrant   |
| 5.1+    | Opinion of Dorsey & Whitney LLP   |
| 10.1    | 1998 Stock Option Plan, as amended through September 28, 2005 (included as Exhibit 4.3 to the Registration Statement on Form S-8 filed on June 24, 2013)  |
| 10.2    | Employment Agreement dated July 26, 2006 between the Company and Michael Rice (included as Exhibit 10.3 to the Annual Report on Form 10-KSB for the fiscal year ended December 31, 2006 filed on April 2, 2007)   |
| 10.3    | Addendum to Employment Agreement dated February 7, 2007 between the Company and Michael Rice (included as Exhibit 10.4 to the Annual Report on Form 10-KSB for the fiscal year ended December 31, 2007 filed April 1, 2008)   |
| 10.4    | Manufacturing Service Agreement dated October 26, 2007 between the Company and Bioserv, Inc., a division of NextPharma Technologies, Inc. (included as Exhibit 10.26 to the Annual Report on Form 10-KSB for the fiscal year ended December 31, 2007 filed April 1, 2008)                               |
| 10.5    | Storage Services Agreement dated October 26, 2007 between the Company and Bioserv, Inc., a division of NextPharma Technologies, Inc. (included as Exhibit 10.25 to the Annual Report on Form 10-KSB for the fiscal year ended December 31, 2007 filed April 1, 2008)                                    |
| 10.6    | Order Fulfillment Services Agreement dated October 26, 2007 between the Company and Bioserv, Inc., a division of NextPharma Technologies, Inc. (included as Exhibit 10.23 to the Annual Report on Form 10-KSB for the fiscal year ended December 31, 2007 filed April 1, 2008)                          |
| 10.7    | Lease Agreement dated August 1, 2007 for facility space 3303 Monte Villa Parkway, Bothell, WA 98021 (included as Exhibit 10.27 and Exhibit 10.29 to the Annual Report on Form 10-KSB for the fiscal year ended December 31, 2007 filed April 1, 2008)   |
| 10.8    | Consulting Agreement dated November 15, 2007 between the Company and Roderick de Greef (included as Exhibit 10.28 to the Annual Report on Form 10-KSB for the fiscal year ended December 31, 2007 filed April 1, 2008)  |
| 10.9    | Secured Convertible Multi-Draw Term Loan Facility Agreement dated January 11, 2008, between the Company and Thomas Girschweiler (included as Exhibit 10.21 to the Annual Report on Form 10-KSB for the fiscal year ended December 31, 2007 filed April 1, 2008)   |
| 10.10   | Secured Convertible Multi-Draw Term Loan Facility Agreement dated January 11, 2008, between the Company and Walter Villiger (included as Exhibit 10.22 to the Annual Report on Form 10-KSB for the fiscal year ended December 31, 2007 filed April 1, 2008)   |
| 10.11   | First Amendment to the Secured Convertible Multi-Draw Term Loan Facility Agreement dated October 20, 2008, between the Company, Thomas Girschweiler, and Walter Villiger (included as Exhibit 10.13 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2008 filed March 31, 2009) |
| 10.12   | Promissory Note dated October 20, 2008 issued by the Company to Thomas Girschweiler (included as Exhibit 10.14 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2008 filed March  |



- 31, 2009)
- 10.13 Promissory Note dated October 20, 2008 issued by the Company to Walter Villiger (included as Exhibit 10.15 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2008 filed March 31, 2009)
- 10.14 First Amendment to the Lease, dated the November 4, 2008, between the Company and Monte Villa Farms, LLC (included as Exhibit 10.16 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2008 filed March 31, 2009)
- 10.15 Addendum to Employment Agreement dated December 31, 2008 between the Company and Michael Rice (included as Exhibit 10.16 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2012 filed March 29, 2013)
- 10.16 Second Amendment to the Secured Convertible Multi-Draw Term Loan Facility Agreement dated December 16, 2009, between the Company, Thomas Girschweiler and Walter Villiger (included as Exhibit 10.17 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2009 filed March 30, 2010)
- 10.17 Promissory Note dated December 16, 2009 issued by the Company to Thomas Girschweiler (included as Exhibit 10.18 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2009 filed March 30, 2010)
- 10.18 Promissory Note dated December 16, 2009 issued by the Company to Walter Villiger (included as Exhibit 10.19 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2009 filed March 30, 2010)
- 10.19 Third Amendment to the Secured Multi-Draw Term Loan Facility Agreement dated November 29, 2010, between the Company, Thomas Girschweiler and Walter Villiger (included as Exhibit 10.20 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2010 filed March 28, 2011)
- 10.20 Promissory Note dated November 29, 2010 issued by the Company to Thomas Girschweiler (included as Exhibit 10.21 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2010 filed March 28, 2011)
- 10.21 Promissory Note dated November 29, 2010 issued by the Company to Walter Villiger (included as Exhibit 10.22 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2010 filed March 28, 2011)
- 10.22 Warrant to purchase 1,000,000 shares of the Company's Common Stock, at \$0.07 per share, issued to Thomas Girschweiler (included as Exhibit 10.23 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2010 filed March 28, 2011)
- 10.23 Warrant to purchase 1,000,000 shares of the Company's Common Stock, at \$0.07 per share, issued to Walter Villiger (included as Exhibit 10.24 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2010 filed March 28, 2011)

| Exhibit | Description  |
|---------|--|
| 10.24   | Fourth Amendment to the Secured Multi-Draw Term Loan Facility Agreement dated August 10, 2011, between the Company, Thomas Girschweiler and Walter Villiger (included as Exhibit 10.24 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2011 filed March 29, 2012) |
| 10.25   | Promissory Note dated August 10, 2011 issued by the Company to Thomas Girschweiler (included as Exhibit 10.25 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2011 filed March 29, 2012)  |
| 10.26   | Promissory Note dated August 10, 2011 issued by the Company to Walter Villiger (included as Exhibit 10.26 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2011 filed March 29, 2012)  |
| 10.27   | Warrant to purchase 1,000,000 shares of the Company's Common Stock, at \$0.063 per share, issued to Thomas Girschweiler (included as Exhibit 10.27 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2011 filed March 29, 2012)                                     |
| 10.28   | Warrant to purchase 1,000,000 shares of the Company's Common Stock, at \$0.063 per share, issued to Walter Villiger (included as Exhibit 10.28 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2011 filed March 29, 2012)   |
| 10.29   | Employment Agreement dated August 17, 2011 between the Company and Daphne Taylor (included as Exhibit 10.29 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2011 filed March 29, 2012)  |
| 10.30   | Second Amendment to the Lease, dated the March 2, 2012, between the Company and Monte Villa Farms, LLC (included as Exhibit 10.30 to the Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2012 filed May 14, 2012)   |
| 10.31   | Fifth Amendment to the Secured Multi-Draw Term Loan Facility Agreement dated May 30, 2012, between the Company, Thomas Girschweiler and Walter Villiger (included as Exhibit 10.32 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2012 filed March 29, 2013)     |
| 10.32   | Promissory Note dated May 30, 2012 issued by the Company to Thomas Girschweiler (included as Exhibit 10.33 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2012 filed March 29, 2013)   |
| 10.33   | Promissory Note dated May 30, 2012 issued by the Company to Walter Villiger (included as Exhibit 10.34 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2012 filed March 29, 2013)   |
| 10.34   | Warrant to purchase 1,000,000 shares of the Company's Common Stock, at \$0.08 per share, issued to Thomas Girschweiler (included as Exhibit 10.35 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2012 filed March 29, 2013)                                      |
| 10.35   | Warrant to purchase 1,000,000 shares of the Company's Common Stock, at \$0.08 per share, issued to Walter Villiger (included as Exhibit 10.36 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2012 filed March 29, 2013)  |
| 10.36   | Third Amendment to the Lease, dated the June 15, 2012, between the Company and Monte Villa Farms, LLC (included as Exhibit 10.37 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2012 filed March 29, 2013)   |
| 10.37   | Employment Agreement dated September 1, 2012 between the Company and Aby J. Mathew (included as Exhibit 10.38 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2012 filed March 29, 2013)  |
| 10.38   | Employment Agreement dated September 1, 2012 between the Company and Mark Sandifer (included as Exhibit 10.39 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2012 filed March 29, 2013)  |
| 10.39   | Employment Agreement dated September 1, 2012 between the Company and Joseph Annicchiarico (included as Exhibit 10.40 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2012 filed March 29, 2013)   |
| 10.40   |  |

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|             | Fourth Amendment to the Lease, dated the November 26, 2012, between the Company and Monte Villa Farms, LLC (included as Exhibit 10.41 to the Annual Report on Form 10-K for the fiscal year ended December 31, 2012 filed March 29, 2013) |
| 10.41       | 2013 Performance Incentive Plan (included as Exhibit A to the Registrant's restated Definitive Proxy Statement filed on May 21, 2013)   |
| 10.42       | Note Conversion Agreement, dated December 16, 2013, by and among the Company and Walter Villiger (included as Exhibit 10.1 to the Current Report on Form 8-K filed on December 16, 2013)  |
| 10.43       | Note Conversion Agreement, dated December 16, 2013, by and among the Company and Thomas Girschweiler (included as Exhibit 10.2 to the Current Report on Form 8-K filed on December 16, 2013)  |
| <u>23.1</u> | Consent of Peterson Sullivan LLP  |
| 23.2+       | Consent of Dorsey & Whitney LLP (contained in Exhibit 5.1 hereto)   |
| 24.1        | Power of Attorney (contained on signature page to this registration statement)  |

+ To be filed by amendment.

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