Bacterin International Holdings, Inc.
Form S-1/A
December 07, 2010

As filed with the Securities and Exchange Commission on December 7, 2010

File No. 333-169620

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

Amendment No.1
to
FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

BACTERIN INTERNATIONAL HOLDINGS, INC.
(Exact name of registrant as specified in its charter)

| Delaware | 3841 | 20-5313323 |
|---|---|---|
| (State or other jurisdiction of incorporation or organization) | (Primary Standard Industrial Classification Code Number) | (I.R.S. Employer Identification Number) |

600 Cruiser Lane
Belgrade, Montana 59714
(406) 388-0480
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

John P. Gandolfo
Chief Financial Officer
600 Cruiser Lane
Belgrade, Montana 59714
(406) 388-0480
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Jill Gilpin
Exemplar Law LLC
115 Broad Street, 5th Floor
Boston, MA 02110
(617) 542-7400

Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this

registration statement.

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. þ

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

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

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

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

| | | | |
|---|---|---|---|
| Large accelerated filer | £ | Accelerated filer | £ |
| Non-accelerated filer | £ (Do not check if a smaller reporting company) | Smaller reporting company | þ |

CALCULATION OF REGISTRATION FEE

| Title of Each Class of Securities to be Registered | Amount to be Registered (1)(2) | Proposed Maximum Offering Price Per Share (3) | Proposed Maximum Aggregate Offering Price | Amount of Registration Fee |
|---|---|---|---|---|
| Common Stock, $0.000001 par value per share | 11,250,597 | $ 5.75 | $ 64,345,467 | $ 4,587.83(4) |

(1) Pursuant to Rule 416 under the Securities Act, this registration statement also covers an indeterminate number of additional shares as may be issued as a result of adjustments by reason of any stock split, stock dividend, or similar transaction.

(2) Such shares are being registered for resale from time to time by certain selling stockholders and include 4,126,630 shares issuable upon the exercise of warrants.

(3) Estimated pursuant to Rule 457(c) solely for the purpose of calculating the amount of the registration fee based upon the average of the bid and asked prices of the registrant's common stock on December 2, 2010 as reported on the OTCBB and OTCQB Marketplace.

(4) $6,273.10 previously paid

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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 or until the

Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

The information in this prospectus is not complete and may be changed. The selling stockholders 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 is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED DECEMBER 7, 2010

PROSPECTUS

11,250,597 Shares

Common Stock

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The stockholders of Bacterin International Holdings, Inc. listed in this prospectus are offering for sale up to 11,250,597 shares of common stock, which includes up to 4,126,630 shares of common stock issuable upon the exercise of warrants.

We expect that sales made pursuant to this prospectus will be made

- in broker's transactions;
- in block trades on the OTCBB and OTCQB Marketplace;
- in transactions directly with market makers; or
- in privately negotiated sales or otherwise.

We will not receive any of the proceeds of sales by the selling stockholders. We will pay the expenses incurred to register the shares for resale, but the selling stockholders will pay any underwriting discounts, concessions, or brokerage commissions associated with the sale of their shares of common stock.

The selling stockholders will determine when they will sell their shares, and in all cases they will sell their shares at the current market price or at negotiated prices at the time of the sale. Securities laws and SEC regulations may require the selling stockholders to deliver this prospectus to purchasers when they resell their shares of common stock.

Our common stock is listed on the OTCBB and OTCQB Marketplace under the symbol "BIHI.OB." On December 2, 2010, the last reported asked price of our common stock on the OTCBB and OTCQB Marketplace was $6.40 per share.

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Investing in our common stock involves a high degree of risk. See "Risk Factors" beginning on page 4 of this prospectus for a discussion of information that should be considered in connection with an investment in our common stock.

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

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The date of this prospectus is , 2010

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You should rely only on the information contained in this prospectus. We have not authorized anyone to provide you with information different from that contained in this prospectus. The selling stockholders are offering to sell, and seeking offers to buy, shares of common stock only in jurisdictions where offers and sales are permitted. The information contained in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or of any sale of our common stock.

## PROSPECTUS SUMMARY

This summary highlights certain information appearing elsewhere in this prospectus. For a more complete understanding of this offering, you should carefully read the entire prospectus and the registration statement of which this prospectus is a part, including the risk factors and the financial statements. Unless the context otherwise requires, "we," "our," "us," "our company" and similar expressions used in this prospectus refer to Bacterin International, Inc., a Nevada corporation, or Bacterin, prior to the closing of the Reverse Merger, as defined below, on June 30, 2010, and Bacterin International Holdings, Inc., f/k/a K-Kitz, Inc., a Delaware corporation, or the Company, as successor to the business of Bacterin, following the closing of the Reverse Merger transaction.

### Bacterin International Holdings, Inc.

We develop, manufacture and market biologics products to domestic and international markets through our biologics division. Our products are used in a variety of applications including enhancing fusion in spine surgery, relief of back pain with a facet joint stabilization, promotion of bone growth in foot and ankle surgery, promotion of skull healing following neurosurgery and subcondral bone defect repair in knee and other joint surgeries.

Our medical devices division develops medical devices intended for use in several diverse clinical areas including orthopedic, plastic, and cardiovascular surgery. Our background and expertise is in the research, testing, and development of coatings for medical devices, particularly antimicrobial-based coatings.

The manufacturing and operations of the biologics and device divisions are organized separately while products from both are marketed through several channels including independent distributors, joint development projects and our direct sales network which we began to implement in the last half of 2009. To date, we have established 13 regions with a regional vice-president in charge of all activities within the region and have hired and trained 52 sales representatives. Our customers are located worldwide, with approximately 97% of our third quarter 2010 sales being derived from customers located in the United States. Our headquarters, laboratory and manufacturing facilities are located in Belgrade, Montana.

### Recent Developments

On June 30, 2010, we completed a reverse merger transaction, or the Reverse Merger, in which we caused Bacterin to be merged with and into a wholly-owned Nevada subsidiary created for purposes of effecting the Reverse Merger, and the stockholders of Bacterin obtained control of the Company. The Reverse Merger was consummated under Nevada corporate law pursuant to an Agreement and Plan of Merger, dated as of June 30, 2010. As a result of the Reverse Merger, Bacterin became our wholly owned subsidiary and we are now engaged, through Bacterin, in the business of biomaterials research, development, and commercialization.

Pursuant to the terms of the Reverse Merger, the stockholders of Bacterin immediately preceding the Reverse Merger received one share of the Company's common stock for each two shares of Bacterin common stock such stockholder held prior to the Reverse Merger with the aggregate number of the Company's shares of common stock so issued to the Bacterin stockholders, being 28,257,133 shares (after rounding down fractional shares), representing approximately 96% of our outstanding common stock as of the closing of the Reverse Merger on June 30, 2010, prior to taking into account the issuance of any shares of our common stock pursuant to the private placement described below. The remaining 4% of our common stock, or 1,180,596 shares, remained with the predecessor company's shareholders, and the holders of 180,596 of those shares are included as selling stockholders in this registration statement.

Before the Reverse Merger, our corporate name was K-Kitz, Inc., and our trading symbol was KKTZ.OB. On June 29, 2010, we changed our corporate name to “Bacterin International Holdings, Inc.” which name change became effective for trading purposes on July 1, 2010. Effective July 21, 2010, our trading symbol was changed from KKTZ.OB to BIHI.OB.

Concurrently with the closing of the Reverse Merger, we completed an initial closing of a private placement to selected qualified investors of shares of our common stock at a purchase price of $1.60 per share and detachable warrants to purchase one-quarter share of our common stock for each share of our common stock purchased in the private placement (at an exercise price of $2.50 per share). In total, we sold 4,934,533 shares of our common stock and warrants to purchase 1,233,646 shares of common stock as part of this initial closing. We received gross proceeds of $7,508,329 in consideration for the sale of the shares of common stock and warrants, which consisted of (i) $4,026,000 in cash from investors in the private placement and (ii) $3,482,329 from note holders in two earlier Bacterin bridge financings (conducted to fund working capital and capital expenditures during the months prior to the Reverse Merger) who converted their outstanding principal and interest into the private placement at a 10% discount to the purchase price, being $1.44 per share, and received identical warrant coverage as the cash investors except that the exercise price of the converting note holders' warrants is $2.25 per share, a 10% discount to the exercise price of the warrants received by the cash investors. The note holders in the bridge financings also received warrants to purchase 1,482,256 shares of our common stock and our placement agent received warrants to purchase 328,125 shares of our common stock as part of our bridge financing.

In the second and final closing of this private placement on July 30, 2010, we sold a total of 1,102,500 additional shares of our common stock together with additional warrants to purchase an aggregate of 275,625 shares of our common stock for total gross cash proceeds of $1,764,000.

Our placement agents received an aggregate of $463,200 in cash fees in connection with the private placement ($322,080 from the initial closing and $141,120 from the second and final closing) and were reimbursed for their out-of-pocket-expenses. In addition, the placement agents received an aggregate of 106,217 shares of our common stock (84,167 shares from the initial closing and 22,050 shares from the second and final closing) and warrants to purchase 361,875 shares of our common stock (251,625 shares from the initial closing and 110,250 shares from the second and final closing) at an exercise price of $1.60 per share.

Following the private placement transaction, the Company has permitted an additional $400,000 in principal amount outstanding from the Bacterin bridge financings to convert into 280,411 shares of the Company's common stock and warrants to purchase 70,103 shares of the Company's common stock on the same terms as if such debt had actually converted in the private placement transaction. All other outstanding debt from those bridge financings that did not convert has been repaid.

In connection with the closing of the Reverse Merger, the Company repurchased 4,319,404 shares of its common stock from one of its stockholders for aggregate consideration of $100, as well as certain other good and valuable consideration, and Bacterin repurchased 77,029 shares of its common stock from certain of its stockholders for aggregate consideration of $123,245. Immediately after these repurchases, all of these shares were cancelled.

On August 6, 2010, we paid certain of Bacterin's former stockholders, who held approximately 743,940 shares of Bacterin common stock in the aggregate (or the equivalent of 371,970 shares of our common stock post-Reverse Merger), the fair value for such shares in connection with the exercise of their dissenters' rights. As a result, and pursuant to the terms of the agreement governing the Reverse Merger, the former Bacterin stockholders (excluding the dissenting shareholders) are entitled to be issued 371,970 shares of our common stock (i.e., the same number of shares that the dissenting stockholders would have received had they not exercised their dissenters rights) in proportion to such stockholders' pre-Reverse Merger share holding percentages in Bacterin.

On November 19, 2010, the Company entered into financing arrangement with two subsidiaries of Western Technology Investment ("WTI"), whereby WTI, through its subsidiaries, agreed to provide a credit facility which allows the Company to draw down $2.5 million initially, and gives the Company the ability to draw down an additional $2.5

million through April 30, 2011 provided the Company has achieved 90% of performance based milestones for the next two quarters. In addition, upon the mutual agreement of Bacterin and WTI, WTI has agreed to an additional commitment through December 31, 2011 of up to 25% of the next new round of equity financing or up to $3.0 million. The credit facility is secured by the Company's personal property and carries an all-in interest rate of 12.5%. Repayment of the initial $2.5 million will be interest only for the first six months, with principal and interest for the subsequent 30 months. The WTI facility also allows the company to obtain separate accounts receivable financing. In connection with the financing, WTI also received warrants to purchase up to 375,000 shares of the Company's common stock. The warrants have an exercise price of the lower of $4.00 per share or the price at which shares of the Company's stock are sold in the next qualified financing, if applicable prior to the date of exercise. The WTI warrants expire on April 30, 2018. WTI also has the right to receive additional warrants to purchase 125,000 shares of the Company's common stock at the same exercise price if the Company draws down the second $2.5 million tranche of the facility.

The Company also issued warrants to purchase a total of 489,710 shares of the Company's common stock to a limited group of existing investors who exercised existing warrants. The new warrants have an exercise price of $4.00 per share and expire on the fifth anniversary of the date of issuance. The Company received a total of $1,111,374 from the cash payments of the exercise price of the existing warrants.

The Company also issued 30,000 shares to a former executive in connection with a settlement agreement and converted the former executive's stock options to an equivalent number of warrants.

Our Offices

Our executive offices are located at 600 Cruiser Lane, Belgrade, Montana 59714 and our telephone number is (406) 388-0480. Our website is located at www.bacterin.com. The information contained on our website does not constitute part of this prospectus.

Through our website, we make available free of charge our annual reports on Form 10-K, our quarterly reports on Form 10-Q, our current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934. These reports are available as soon as reasonably practicable after we electronically file those materials with the Securities and Exchange Commission, or SEC. When available, we also expect to post on our website investor presentations and webcast earnings calls and transcripts, in addition to the charters of our committees of our Board of Directors; our Corporate Governance Guidelines, our Code of Ethics, and any amendments or waivers thereto; and any other corporate governance materials contemplated by SEC regulations. The documents are available in print by contacting our corporate secretary at our executive offices.

The Offering

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|---|---|
| Common stock offered by the selling stockholders | 11,250,597 shares, which includes up to 4,126,630 shares of common stock issuable upon the exercise of warrants. |
| Use of proceeds | We will not receive any of the proceeds of sales of common stock by the selling stockholders. To the extent we receive any proceeds from the exercise of warrants by the selling stockholders, we expect to use such proceeds for working capital and other general corporate purposes. However, such warrants contain a "cashless" exercise provision, so there can be no assurance that we will receive any proceeds upon the exercise of warrants. |
| Risk factors | See "Risk Factors" and other information included in this prospectus for a discussion of factors that you should consider before deciding to invest in shares of our common stock. |
| OTCBB and OTCQB Marketplace Symbol | BIHI.OB |

# RISK FACTORS

Before you invest in our common stock, you should be aware that there are risks, including those set forth below. You should carefully consider these risk factors, together with all the other information included in this prospectus, before you decide to purchase shares of our common stock.

## Risks Related to Our Business and Our Industry

### Our products are relatively new and long-term results are incomplete, thus, the future of our business still remains uncertain.

Many of our current products are relatively new and have been in use for a relatively short period of time. See "Business - Products and Services." The results of the use of these products will be monitored for many years. While preliminary results have been good, there can be no assurance that any or all of these products will perform well over longer periods of time. Future product issues may expose us to legal actions, removal of regulatory approvals or products being pulled from use. If we become subject to product or general liability or errors and omissions claims, they could be time-consuming and costly. The U.S. Food and Drug Administration, or the FDA, and foreign regulatory authorities may impose significant restrictions on the use or marketing of our products or impose additional requirements. Later discovery of previously unknown problems with any of these products or their manufacture may result in further restrictions, including withdrawal of the product from the market. Any such restrictions or withdrawals could materially affect our ability to execute our business plan. In addition, governmental authorities could seize our inventory of products, or force us to recall any product already in the market if we fail to comply with FDA or other governmental regulations.

### Many competitive products exist and more will be developed, and we may not be able to successfully compete because we are smaller and have fewer financial resources.

Our business is in a very competitive and evolving field. Rapid new developments in this field have occurred over the past few years, and are expected to continue to occur. Other companies already have competing products available or about to be available or may develop products to compete with ours.

Many of these products may have short regulatory timeframes and our competitors, many with more substantial development resources, may be able to develop competing products that are equal to or better than ours. This may make our products obsolete or undesirable by comparison and reduce our revenue. Our success will depend, in large part, on our ability to maintain a competitive position concerning our intellectual property, and to develop new technologies and new applications for our technologies. Many of our competitors have substantially greater financial and technical resources, as well as greater production and marketing capabilities, than us.

### The medical community and the general public may perceive synthetic materials and growth factors as safer, which could have a material adverse effect on our business.

Members of the medical community and the general public may perceive synthetic materials and growth factors as safer than our allograft-based bone tissue products.

Our products may be incapable of competing successfully with synthetic bone graft substitutes and growth factors developed and commercialized by others, which could have a material adverse effect on our business, financial condition and results of operations.

Negative publicity concerning methods of human tissue recovery and screening of donor tissue in the industry in which we operate may reduce demand for our allografts and impact the supply of available donor tissue.

Media reports or other negative publicity concerning both improper methods of tissue recovery from donors and disease transmission from donated tissue may limit widespread acceptance of our allografts. Unfavorable reports of improper or illegal tissue recovery practices, both in the United States and internationally, as well as incidents of improperly processed tissue leading to transmission of disease, may broadly affect the rate of future tissue donation and market acceptance of allograft technologies. Potential patients may not be able to distinguish our allografts, technologies and the tissue recovery and the processing procedures from those of our competitors or others engaged in tissue recovery. In addition, families of potential donors may become reluctant to agree to donate tissue to for-profit tissue processors.

We are highly dependent on the availability of human donors; any disruptions could cause our customers to seek alternative providers or technologies.

We are highly dependent on our ability to obtain donor cadavers as the raw material for many of our products. The availability of acceptable donors is relatively limited and we compete with many other companies for this limited availability. The availability of donors is also impacted by regulatory changes, general public opinion of the donor process and our reputation for our handling of the donor process. In addition, due to seasonal changes in the mortality rates, some scarce tissues are at times in short supply. Any disruption in the supply of this crucial raw material could have significant consequences for our revenue, operating results and continued operations. See "Business - Donor Procurement."

We will need to continue to innovate and develop new products to be desirable to our customers.

The markets for our products and services are characterized by rapid technological change, frequent new introductions, changes in customers' demands and evolving industry standards. Accordingly, we will need to continue to innovate and develop additional products. These efforts can be costly, subject to long development and regulatory delays and may not result in products approved for sale. These costs may hurt operating results and may require additional capital. If additional capital is not available, we may be forced to curtail development activities. In addition, any failure on our behalf to react to changing market conditions could create an opportunity for other market participants to capture a critical share of the market within a short period of time.

Our success will depend on our ability to engage and retain qualified technical personnel who are difficult to attract.

Our success will depend on our ability to attract and retain qualified technical personnel to assist in research and development, testing, product implementation, low-scale production and technical support. Competition for qualified technical personnel is intense, and we may encounter difficulty in engaging and retaining qualified personnel needed to implement our growth plan. The demand for such personnel is high and the supply of qualified technical personnel is limited. A significant increase in the wages paid by competing employers could result in a reduction of our technical work force and increases in the wage rates that we must pay or both. If either of these events were to occur, our cost structure could increase and our growth potential could be impaired.

Loss of key members of our management who we need to succeed could adversely affect our business.

We are highly dependent on the services of Guy Cook, our President and Chief Executive Officer, and other key members of our management team and the loss of his or any of their services could have an adverse effect on our future operations. See "Management." We do not currently maintain a key-man life insurance policy insuring the life of Mr. Cook or any other member of our management team.

We are highly dependent on the continued availability of our facilities and would be harmed if they were unavailable for any prolonged period of time.

Any failure in the physical infrastructure of our facilities or services could lead to significant costs and disruptions that could reduce our revenues and harm our business reputation and financial results. We are highly reliant on our Belgrade, Montana facilities. See "Business - Facilities." Any natural or man-made event that impacts our ability to utilize these facilities could have a significant impact on our operating results, reputation and ability to continue operations. The regulatory process for approval of facilities is time-consuming and our ability to rebuild facilities would take a considerable amount of time and expense and cause a significant disruption in service to our customers. Further, the FDA or some other regulatory agency could identify deficiencies in future inspections of our facilities or our supplies that could disrupt our business, reducing profitability. We carry business interruption insurance of up to $1 million per location to help in these instances, but it may not cover all costs or our standing in the market.

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We will be required to invest in facilities and equipment on a continuing basis, which will put pressure on us to finance these investments.

We have invested, and intend to continue to invest, in facilities and state-of-the-art equipment in order to increase, expand or update our capabilities and facilities. See “Business - Facilities.” Changes in technology or sales growth beyond currently established production capabilities, which we anticipate, will require further investment. We currently anticipate that we will need to spend between $4 and $5 million over the next five years in order to increase, expand or update our existing facilities to meet our expected growth over that period. However, there can be no assurance that we will generate sufficient funds from operations to maintain our existing facilities and equipment or to finance any required capital investments or that other sources of funding will be available. Additionally, there can be no guarantee that any future expansion will not negatively affect earnings.

Future revenue will depend on our ability to develop new sales channels and there can be no assurance that these efforts will result in significant sales.

We are in the process of developing sales channels for our products but there can be no assurance that these channels can be developed or that we will be successful in selling our products. We currently sell our products through direct sales by our employees and indirectly through distributor relationships. We are engaging in a major initiative to build and further expand our direct sales force. See “Business - Sales and Marketing.” This effort will have significant costs that will be incurred prior to the generation of revenue sufficient to cover these costs. In 2010, we incurred sales and marketing expenses of approximately $8 million. The costs incurred for these efforts may impact our operating results and there can be no assurance of their effectiveness. Many of our competitors have well-developed sales channels and it may be difficult for us to break through these competitors to take market share. If we are unable to develop these sales channels, we may not be able to grow revenue or maintain our current level of revenue generation.

There may be fluctuations in our operating results, which will impact our stock price.

Significant annual and quarterly fluctuations in our results of operations may be caused by, among other factors, our volume of revenues, the timing of new product or service announcements, releases by us and our competitors in the marketplace of new products or services, and general economic conditions. There can be no assurance that the level of revenues and profits, if any, achieved by us in any particular fiscal period will not be significantly lower than in other comparable fiscal periods. Our expense levels are based, in part, on our expectations as to future revenues. As a result, if future revenues are below expectations, net income or loss may be disproportionately affected by a reduction in revenues, as any corresponding reduction in expenses may not be proportionate to the reduction in revenues.

We are dependent on the ability of our licensees and development partners for obtaining regulatory approvals and market acceptance of their products, for which we may have no control.

A large part of our success will depend on our ability, or that of our licensees, to obtain timely regulatory approval for products employing our technology. Moreover, our success will also depend on whether, and how quickly, our licensees gain market acceptance of products incorporating our technology, compared to competitors using competing technologies.

Our revenues will depend upon prompt and adequate reimbursement from public and private insurers and national health systems.

Political, economic and regulatory influences are subjecting the healthcare industry in the United States to fundamental change. The ability of hospitals to pay fees for allograft bone tissue products depends in part on the extent to which reimbursement for the costs of such materials and related treatments will continue to be available from governmental health administration authorities, private health coverage insurers and other organizations. We may

have difficulty gaining market acceptance for our products if government and third-party payors do not provide adequate coverage and reimbursement to hospitals. Major third-party payors of hospital services and hospital outpatient services, including Medicare, Medicaid and private healthcare insurers, annually revise their payment methodologies, which can result in stricter standards for reimbursement of hospital charges for certain medical procedures or the elimination of reimbursement. Further, Medicare, Medicaid and private healthcare insurer cutbacks could create downward price pressure on our products.

Our operating results will be harmed if we are unable to effectively manage and sustain our future growth.

We might not be able to manage our future growth efficiently or profitably. Our business is unproven on a large scale and actual revenue and operating margins, or revenue and margin growth, may be less than expected. If we are unable to scale our production capabilities efficiently, we may fail to achieve expected operating margins, which would have a material and adverse effect on our operating results. Growth may also stress our ability to adequately manage our operations, quality of products, safety and regulatory compliance. If growth significantly decreases our reserves, we may be required to obtain additional financing, which may increase our indebtedness or result in dilution to our stockholders. Further, there can be no assurance that we would be able to obtain any additional financing.

Future business combinations or acquisitions may be difficult to integrate and cause our attention to be diverted.

We may pursue various business combinations with other companies or strategic acquisitions of complementary businesses, product lines or technologies. There can be no assurance that such acquisitions will be available at all, or on terms acceptable to us. These transactions may require additional financing which may increase our indebtedness or outstanding shares, resulting in dilution to stockholders. The inability to obtain such future financing may inhibit our growth and operating results. Integration of acquisitions or additional products can be time consuming, difficult and expensive and may significantly impact operating results. Furthermore, the integration of any acquisition may divert management's time and resources from our core business. We may sell some or all of our product lines to other companies or may agree to combine with another company. Selling some of our product lines may inhibit our ability to generate positive operating results going forward. While we, from time to time, evaluate potential acquisitions of businesses, products and technologies, and anticipate continuing to make these evaluations, we have no present understandings, commitments or agreements with respect to any acquisitions.

We may be subject to future product liability litigation that could be expensive and our insurance coverage may not be adequate in a catastrophic situation.

Although we are not currently subject to any product liability proceedings, and we have no reserves for product liability disbursements, we may incur material liabilities relating to product liability claims in the future, including product liability claims arising out of the usage of our products. We currently carry product liability insurance of up to $10 million at an annual premium cost of approximately $140,000, however, our insurance coverage and any reserves we may maintain in the future for product related liabilities may not be adequate and our business could suffer material adverse consequences.

We may implement a product recall or voluntary market withdrawal due to product defects or product enhancements and modifications, which would significantly increase our costs.

The manufacturing and marketing of our biologic products, medical devices and coating technologies involves an inherent risk that our products may prove to be defective. In that event, we may voluntarily implement a recall or market withdrawal or may be required to do so by a regulatory authority. A recall of one of our products, or a similar product manufactured by another manufacturer, could impair sales of the products we market as a result of confusion concerning the scope of the recall or as a result of the damage to our reputation for quality and safety.

## Risks Related to the Regulatory Environment in which We Operate

U.S. governmental regulation could restrict the use of our products or our procurement of tissue.

In the United States, the procurement and transplantation of allograft bone tissue is subject to federal law pursuant to the National Organ Transplant Act, or NOTA, a criminal statute which prohibits the purchase and sale of human organs used in human transplantation, including bone and related tissue, for "valuable consideration." NOTA permits

reasonable payments associated with the removal, transportation, processing, preservation, quality control, implantation and storage of human bone tissue. We provide services in all of these areas in the United States, with the exception of removal and implantation, and receive payments for all such services. We make payments to certain of our clients and tissue banks for their services related to recovering allograft bone tissue on our behalf. If NOTA is interpreted or enforced in a manner which prevents us from receiving payment for services we render or which prevents us from paying tissue banks or certain of our clients for the services they render for us, our business could be materially and adversely affected.

We are engaged through our marketing employees, independent sales agents and sales representatives in ongoing efforts designed to educate the medical community as to the benefits of our products, and we intend to continue our educational activities. Although we believe that NOTA permits payments in connection with these educational efforts as reasonable payments associated with the processing, transportation and implantation of our products, payments in connection with such education efforts are not exempt from NOTA's restrictions and our inability to make such payments in connection with our education efforts may prevent us from paying our sales representatives for their education efforts and could adversely affect our business and prospects. No federal agency or court has determined whether NOTA is, or will be, applicable to every allograft bone tissue-based material which our processing technologies may generate. Assuming that NOTA applies to our processing of allograft bone tissue, we believe that we comply with NOTA, but there can be no assurance that more restrictive interpretations of, or amendments to, NOTA will not be adopted in the future which would call into question one or more aspects of our method of operations.

Our business is subject to continuing regulatory compliance by the FDA and other authorities which is costly and could result in delays in the commercialization of our products.

As a manufacturer and marketer of medical devices, we are subject to extensive regulation by the FDA and the Center for Medicare Services of the U.S. Department of Health and Human Services and other federal governmental agencies and, in some jurisdictions, by state and foreign governmental authorities. These regulations govern the introduction of new medical devices, the observance of certain standards with respect to the design, manufacture, testing, labeling, promotion and sales of the devices, the maintenance of certain records, the ability to track devices, the reporting of potential product defects, the import and export of devices and other matters. We are facing an increasing amount of scrutiny and compliance costs as more states are implementing regulations governing medical devices, pharmaceuticals and/or biologics which affect many of our products.

Medical devices that incorporate coatings technology are subject to FDA regulation and compliance. Generally, any medical device manufacturer that wishes to incorporate our coatings technology into its products will be responsible for obtaining FDA approval for the medical devices it intends to market though we will assist in the 510(k) filing submitted by licensees. The FDA process can take several months to several years in the United States. The time required to obtain approval for international sales may be longer or shorter, depending on the laws of the particular country. There can be no assurance that our licensees will be able to obtain FDA or international approval on a timely basis. The FDA may also require the more extensive Premarket Approval Application, or PMA, process for certain products, which results, in effect, in a private license being granted to the applicant for marketing a particular medical device and requires an additional level of FDA scientific review to ensure the safety and effectiveness of such devices. Approval or clearance may place substantial restrictions on the indications for which the product may be marketed or to whom it may be marketed, warnings that may be required to accompany the product or additional restrictions placed on the sale and/or use of the product. Changes in regulations or adoption of new regulations could also cause delays in obtaining product approval. In addition, regulatory approval is subject to continuing compliance with regulatory standards, and product approval is subject to withdrawal if a licensee fails to comply with standards, or if an unforeseen event should occur concerning a product. Significant delays in obtaining product approval could have a significantly detrimental impact on our business. See "Business - Government Regulation."

Human tissues intended for transplantation have been regulated by the FDA since 1993. In May 2005, three new comprehensive regulations went into effect that address manufacturing activities associated with human cells, tissues and cellular and tissue-based products, or HCT/Ps. The first requires that companies that produce and distribute HCT/Ps register with the FDA. The second provides criteria that must be met for donors to be eligible to donate tissues and is referred to as the "Donor Eligibility" rule. The third rule governs the processing and distribution of the tissues and is often referred to as the "Current Good Tissue Practices" rule. The "Current Good Tissue Practices" rule covers all stages of allograft processing, from procurement of tissue to distribution of final allografts. Together they are designed to ensure that sound, high quality practices are followed to reduce the risk of tissue contamination and of

communicable disease transmission to recipients. These regulations increased regulatory scrutiny within the industry in which we operate and have lead to increased enforcement action which affects the conduct of our business. In addition, these regulations can increase the cost of tissue recovery activities. See “Business - Government Regulation.”

Other regulatory entities include state agencies with statutes covering tissue banking. Regulations issued by Florida, New York, California and Maryland will be particularly relevant to our business. Most states do not currently have tissue banking regulations. However, recent incidents of allograft related infections in the industry may stimulate the development of regulation in other states. It is possible that others may make allegations against us or against donor recovery groups or tissue banks about non-compliance with applicable FDA regulations or other relevant statutes or regulations. Allegations like these could cause regulators or other authorities to take investigative or other action, or could cause negative publicity for our business and the industry in which we operate.

Our products may be subject to regulation in the EU as well should we enter that market. In the European Union, or EU, regulations, if applicable, differ from one EU member state to the next. Because of the absence of a harmonized regulatory framework and the proposed regulation for advanced therapy medicinal products in the EU, as well as for other countries, the approval process for human derived cell or tissue based medical products may be extensive, lengthy, expensive and unpredictable. Some of our products may be subject to European Union member states' regulations that govern the donation, procurement, testing, coding, traceability, processing, preservation, storage, and distribution of human tissues and cells and cellular or tissue-based products. Some EU member states have their own tissue banking regulations.

Clinical trials can be long, expensive and ultimately uncertain which could jeopardize our ability to obtain regulatory approval and market our products.

Clinical trials are required to develop products, gain market acceptance and obtain 510(k) certifications from the FDA. We have several clinical trials planned and will likely undertake future trials. These trials often take two years to execute and are subject to factors within and outside of our control. The outcome of these trials is uncertain and may have a significant impact on the success of our current and future products and future profits.

The commencement or completion of any of our clinical trials may be delayed or halted for numerous reasons, including, but not limited to, a regulatory body placing clinical trials on hold, patients not enrolling in clinical trials at the rate we expect, patients experiencing adverse side effects, third party contractors failing to perform in accordance with our anticipated schedule or consistent with good clinical practices, inclusive or negative interim trial results or our inability to obtain sufficient quantities of raw materials to produce our products. Our development costs will increase if we have material delays in our clinical trials or if we need to perform more or larger clinical trials than planned. If this occurs, our financial results and the commercial prospects for our products will be harmed and our prospects for profitability will be harmed.

Product pricing (and, therefore, profitability) is subject to regulatory control which could impact our revenue and financial performance.

The pricing and profitability of our products may become subject to control by the government and other third-party payors. The continuing efforts of governmental and other third-party payors to contain or reduce the cost of healthcare through various means may adversely affect our ability to successfully commercialize our products. In most foreign markets, the pricing and/or profitability of certain diagnostics and prescription pharmaceuticals are subject to governmental control. In the United States, we expect that there will continue to be federal and state proposals to implement similar governmental control though it is unclear which proposals will ultimately become law, if any. Changes in prices, including any mandated pricing, could impact our revenue and financial performance. See "Business - Government Regulation."

## Risks Related to Our Intellectual Property

Failure to protect our intellectual property rights could result in costly and time consuming litigation and our loss of any potential competitive advantage.

Our success will depend, to a large extent, on our ability to successfully obtain and maintain patents, prevent misappropriation or infringement of intellectual property, maintain trade secret protection, and conduct operations without violating or infringing on the intellectual property rights of third parties. See “Business - Technology and Intellectual Property.” There can be no assurance that our patented and patent-pending technologies will provide us with a competitive advantage, that we will be able to develop or acquire additional technology that is patentable, or that third parties will not develop and offer technologies which are similar to ours. Moreover, we can provide no assurance that confidentiality agreements, trade secrecy agreements or similar agreements intended to protect unpatented technology will provide the intended protection. Intellectual property litigation is extremely expensive and time-consuming, and it is often difficult, if not impossible, to predict the outcome of such litigation. A failure by us to protect our intellectual property could have a materially adverse effect on our business and operating results and our ability to successfully compete in this industry.

We may not be able to obtain or protect our proprietary rights relating to our products without resorting to costly and time consuming litigation.

We may not be able to obtain, maintain and protect certain proprietary rights necessary for the development and commercialization of our products or product candidates. Our commercial success will depend in part on obtaining and maintaining patent protection on our products and successfully defending these patents against third-party challenges. Our ability to commercialize our products will also depend in part on the patent positions of third parties, including those of our competitors. The patent positions of pharmaceutical and biotechnology companies can be highly uncertain and involve complex legal and factual questions. Accordingly, we cannot predict with certainty the scope and breadth of patent claims that may be afforded to other companies' patents. We could incur substantial costs in litigation if we are required to defend against patent suits brought by third parties, or if we initiate suits to protect our patent rights.

In addition to the risks involved with patent protection, we also face the risk that our competitors will infringe on our trademarks. We are currently pursuing claims against two of our competitors who we believe have infringed on our trademarks.

In the first case, Bacterin International, Inc. v. Allosource, we claim that Allosource has infringed on our OSTEOSPONGE trademark through the use of the name ALLOSPONGE. We believe that ALLOSPONGE is deceptively similar to our OSTEOSPONGE mark, and that there would be a likelihood of confusion in the market place, which could result in lost sales for Bacterin, if Allosource continues to use the ALLOSOURCE name. We are seeking an injunction against the use of ALLOSPONGE, as well as commercial monetary damages.

In the second instance, we filed a complaint and sent a demand letter to Advanced Biologics, Inc. and Advanced Biologics, LLC, demanding that Advanced Biologics cease and desist any and all use of its "OsteoAMP Sponge" mark or any other "OSTEO" and/or "SPONGE" formative mark in connection with human allograft tissue, demineralized bone matrix, and cancellous bone products. We are currently negotiating with Advanced Biologics in an effort to resolve this matter. We believe that continued infringement would lead to a likelihood of confusion and could result in lost sales.

There can be no assurance that we will prevail in any claims we make to protect our intellectual property.

Future protection for our proprietary rights is uncertain which may impact our ability to successfully compete in our industry.

The degree of future protection for our proprietary rights is uncertain. We cannot ensure that:

- we were the first to make the inventions covered by each of our 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 issued patents or those of our licensors will be valid and enforceable;
- any patents issued to us or our collaborators will provide a basis for commercially viable products or will provide us with any competitive advantages or will not be challenged by third parties;

- we will develop additional proprietary technologies that are patentable;
- the patents of others will not have a material adverse effect on our business rights; or
- the measures we rely on to protect the intellectual property underlying our products may not be adequate to prevent third parties from using our technology, all of which could harm our ability to compete in the market.

Our success depends on our ability to avoid infringing on the intellectual property rights of third parties which could expose us to litigation or commercially unfavorable licensing arrangements.

Our commercial success depends in part on our ability and the ability of our collaborators to avoid infringing patents and proprietary rights of third parties. Third parties may accuse us or our collaborators of employing their proprietary technology in our products, or in the materials or processes used to research or develop our products, without authorization. Any legal action against our collaborators or us claiming damages and/or seeking to stop our commercial activities relating to the affected products, materials and processes could, in addition to subjecting us to potential liability for damages, require our collaborators or us to obtain a license to continue to utilize the affected materials or processes or to manufacture or market the affected products. We cannot predict whether we or our collaborators would prevail in any of these actions or whether any license required under any of these patents would be made available on commercially reasonable terms, if at all. If we are unable to obtain such a license, we or our collaborators may be unable to continue to utilize the affected materials or processes or manufacture or market the affected products or we may be obligated by a court to pay substantial royalties and/or other damages to the patent holder. Even if we are able to obtain such a license, the terms of such a license could substantially reduce the commercial value of the affected product or products and impair our prospects for profitability. Accordingly, we cannot predict whether or to what extent the commercial value of the affected product or products or our prospects for profitability may be harmed as a result of any of the liabilities discussed above. Furthermore, infringement and other intellectual property claims, with or without merit, can be expensive and time-consuming to litigate and can divert management’s attention from our core business. We may be unable to obtain and enforce intellectual property rights to adequately protect our products and related intellectual property.

Others may claim an ownership interest in our intellectual property which could expose us to litigation and have a significant adverse effect on our prospects.

A third-party may claim an ownership interest in one or more of our patents or intellectual property. While we believe we own 100% of the right, title and interest in the patents for which we have applied and our other intellectual property, including that which we license from third parties, we cannot guarantee that a third-party will not, at some time, assert a claim or an interest in any of such patents or intellectual property. We are presently unaware of any claims or assertions by third-parties with respect to its patents or intellectual property, except that, (1) as a defense to a lawsuit we brought against Allosource for infringement of our OsteoSponge® trademark, Allosource has counterclaimed in an attempt to invalidate such mark; and (2) we, along with many companies in our industry, have been served a complaint filed by miniSURG International, Inc. alleging patent infringement. See "Business - Legal Proceedings." A successful challenge or claim by a third party to our patents or intellectual property could have a significant adverse effect on our prospects.

The result of litigation may result in financial loss and/or impact our ability to sell our products going forward.

We will vigorously defend any future intellectual property litigation that may arise but there can be no assurance that we will prevail in these matters. An unfavorable judgment may result in a financial burden on us. An unfavorable judgment may also result in restrictions on our ability to sell certain products and therefore may impact future operating results.

## Risks Related to Our Common Stock

Because we became public through a reverse merger, we may not be able to attract the attention of major brokerage firms.

There are coverage risks associated with our becoming public through a reverse merger, including, among other things, security analysts of major brokerage firms may not provide coverage of us since there is no incentive to brokerage firms to recommend the purchase of our common stock. We cannot assure you that brokerage firms will want to conduct any public offerings on our behalf in the future.

If we do not timely file and have declared effective the registration statement required pursuant to our private placement, we will be required to pay liquidated damages.

As part of our private placement, we entered into a registration rights agreement. See "Description of Securities - Registration Rights." Under this agreement, we are obligated to file a registration statement providing for the resale of the shares of common stock acquired in the private placement and underlying the warrants by September 28, 2010. Pursuant to the agreement, we agreed to file and have declared effective this registration statement by December 27, 2010. If we do not meet this timeline, we must pay liquidated damages in the amount equal to 1% of the aggregate investment amount per month, subject to a maximum limit of 12% of the aggregate investment amount.

If and when our registration statement becomes effective, a significant number of shares of common stock will be eligible for sale, which could depress the market price of our common stock.

Following the effective date of the registration statement, a significant number of our shares of common stock will become eligible for sale in the public market, which could harm the market price of the stock. Further, shares may be offered from time to time in the open market pursuant to Rule 144, and these sales may have a depressive effect as well.

There has been no active public trading market for our common stock.

Although our common stock is traded in very limited volumes on the OTCBB and OTCQB Marketplace, there is currently no active public market for our common stock. An active trading market may not develop or, if developed, may not be sustained. The lack of an active market may impair your ability to sell your shares of common stock at the time you wish to sell them or at a price that you consider reasonable. The lack of an active market may also reduce the market value and increase the volatility of your shares of common stock. An inactive market may also impair our ability to raise capital by selling shares of common stock and may impair our ability to acquire other companies or assets by using shares of our common stock as consideration.

The market price of our common stock may be volatile and may decline in value.

The market price of our common stock has been and will likely continue to be highly volatile, as is the stock market in general, and the market for OTCBB and OTCQB Marketplace quoted stocks, in particular. Some of the factors that may materially affect the market price of our common stock are beyond our control, such as changes in financial estimates by industry and securities analysts, conditions or trends in the industry in which we operate or sales of our common stock. These factors may materially adversely affect the market price of our common stock, regardless of our performance. In addition, the public stock markets have experienced extreme price and trading volume volatility. This volatility has significantly affected the market prices of securities of many companies for reasons frequently unrelated to the operating performance of the specific companies. These broad market fluctuations may adversely affect the market price of our common stock.

Our stockholders may experience significant dilution if future equity offerings are used to fund operations or acquire complementary businesses.

If our future operations or acquisitions are financed through the issuance of equity securities, our stockholders could experience significant dilution. In addition, securities issued in connection with future financing activities or potential acquisitions may have rights and preferences senior to the rights and preferences of our common stock. We also have established an equity incentive plan for our management and employees. We expect to grant options to purchase shares of our common stock to our directors, employees and consultants and we will grant additional options in the future. The issuance of shares of our common stock upon the exercise of these options may result in dilution to our stockholders.

Our current management can exert significant influence over us and make decisions that are not in the best interests of all stockholders.

Our executive officers and directors beneficially own as a group approximately 39% of our outstanding shares of common stock. As a result, these stockholders will be able to assert significant influence over all matters requiring stockholder approval, including the election and removal of directors and any change in control. In particular, this concentration of ownership of our outstanding shares of common stock could have the effect of delaying or preventing a change in control, or otherwise discouraging or preventing a potential acquirer from attempting to obtain control. This, in turn, could have a negative effect on the market price of our common stock. It could also prevent our stockholders from realizing a premium over the market prices for their shares of common stock. Moreover, the interests of the owners of this concentration of ownership may not always coincide with our interests or the interests of other stockholders and, accordingly, could cause us to enter into transactions or agreements that we would not otherwise consider.

Our common stock is considered “penny stock” and may be difficult to sell.

The SEC has adopted Rule 3a51-1, which establishes the definition of a “penny stock” for the purposes relevant to us, as any equity security that has a market price of less than $5.00 per share or with an exercise price of less than $5.00 per share and trades on a national market system with certain initial quantitative listing standards, subject to certain exceptions. The market price of our common stock currently is traded near $5.00 per share, and our stock is currently listed on the OTCBB and OTCQB Marketplace, which do not have such quantitative listing standards and therefore may be designated as a “penny stock” according to SEC rules. For any transaction involving a penny stock, unless exempt, Rule 15g-9 requires:

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

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

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

- obtain financial information and investment experience objectives of the person; and

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

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

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

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

Disclosure also has to be made about the risks of investing in penny stocks in both public offerings and in secondary trading and about the commissions payable to both the broker-dealer and the registered representative, current quotations for the securities and the rights and remedies available to an investor in cases of fraud in penny stock transactions. Finally, monthly statements have to be sent disclosing recent price information for the penny stock held in the account and information on the limited market in penny stocks.

Generally, brokers may be less willing to execute transactions in securities subject to the "penny stock" rules. This may make it more difficult for investors to dispose of our common stock and cause a decline in the market value of our stock. In addition, since the common stock is currently traded on the OTCBB and OTCQB Marketplace, investors may find it difficult to obtain accurate quotations of the common stock and may experience a lack of buyers to purchase such stock or a lack of market makers to support the stock price.

We do not anticipate paying dividends in the foreseeable future; you should not buy our stock if you expect dividends.

We currently intend to retain our future earnings to support operations and to finance expansion and, therefore, we do not anticipate paying any cash dividends on our common stock in the foreseeable future.

Although we have applied for trading our common stock on Nasdaq, we may not satisfy its eligibility criteria for listing and may never be listed on Nasdaq.

We have applied to list our common stock for trading on the Nasdaq Capital Market. Notwithstanding such application, no assurance can be given that we will satisfy the eligibility criteria or other initial listing requirements, or that our shares of common stock will ever be listed on Nasdaq or another national securities exchange.

We could issue "blank check" preferred stock without stockholder approval with the effect of diluting then current stockholder interests and impairing their voting rights, and provisions in our charter documents and under Delaware law could discourage a takeover that stockholders may consider favorable.

Our certificate of incorporation provides for the authorization to issue up to 5,000,000 shares of "blank check" preferred stock with designations, rights and preferences as may be determined from time to time by our board of directors. Our

board of directors is empowered, without stockholder approval, to issue one or more series of preferred stock with dividend, liquidation, conversion, voting or other rights which could dilute the interest of, or impair the voting power of, our common stockholders. The issuance of a series of preferred stock could be used as a method of discouraging, delaying or preventing a change in control. For example, it would be possible for our board of directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change control of our company. In addition, advanced notice is required prior to stockholder proposals.

## CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

The statements contained in this prospectus that are not purely historical are forward-looking statements within the meaning of applicable securities laws. Our forward-looking statements include, but are not limited to, statements regarding our "expectations," "hopes," "beliefs," "intentions," or "strategies" regarding the future. In addition, any statements that refer to projections, forecasts, or other characterizations of future events or circumstances, including any underlying assumptions, are forward-looking statements. The words "anticipate," "believe," "continue," "could," "estimate," "expect," "intend," "may," "might," "plan," "possible," "potential," "predict," "project," "should" and "would," as well as simi may identify forward-looking statements, but the absence of these words does not mean that a statement is not forward looking. Forward-looking statements in this prospectus may include, for example, statements about:

- the future performance and market acceptance of our products;
- our ability to maintain our competitive position;
- negative media publicity;
- our ability to obtain donor cadavers for our products;
- our efforts to innovate and develop new products;
- our ability to engage and retain qualified technical personnel and members of our management team;
- our reliance on our current facilities;
- our ability to generate funds or raise capital to finance our growth;
- our efforts to expand our sales force;
- government regulations;
- fluctuations in our operating results;
- government and third-party coverage and reimbursement for our products;
- our ability to manage our growth;
- our ability to successfully integrate future business combinations or acquisitions;
- product liability claims and other litigation to which we may be subjected;
- product recalls and defects;
- timing and results of clinical trials;
- our ability to obtain and protect our intellectual property and proprietary rights;
- infringement and ownership of intellectual property;
- our ability to attract broker coverage;
- the trading market, market prices, dilution, and dividends of our common stock;
- influence by our management;
- our application for listing on Nasdaq; and
- our ability to issue preferred stock.

The forward-looking statements contained in this prospectus are based on our current expectations and beliefs concerning future developments and their potential effects on us. There can be no assurance that future developments affecting us will be those that we have anticipated. These forward-looking statements involve a number of risks, uncertainties, or assumptions, many of which are beyond our control, which may cause actual results or performance to be materially different from those expressed or implied by these forward-looking statements. These risks and uncertainties include, but are not limited to, those factors described under the heading "Risk Factors" in this prospectus. Should one or more of these risks or uncertainties materialize, or should any of our assumptions prove incorrect, actual results may vary in material respects from those projected in these forward-looking statements. We undertake no obligation to update or revise any forward-looking statements, whether as a result of new information, future events, or otherwise, except as may be required under applicable securities laws.

## USE OF PROCEEDS

We will not receive any of the proceeds from sales of shares of our common stock by the selling stockholders. To the extent we receive any proceeds from the exercise of warrants by the selling stockholders, we expect to use such proceeds for working capital and other general corporate purposes. However, such warrants contain a "cashless" exercise provision, so there can be no assurance that we will receive any proceeds upon the exercise of warrants. See also "Plan of Distribution" below.

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

You should read the following discussion of our financial condition and results of operations in conjunction with our financial statements and related notes set forth in this prospectus. Unless the context otherwise requires, "we," "our," "us" and similar expressions used in this Management's Discussion and Analysis of Financial Condition and Results of Operation section refer to Bacterin prior to the closing of the Reverse Merger on June 30, 2010, and Bacterin International Holdings, Inc., f/k/a K-Kitz, Inc., as successor to the business of Bacterin, following the closing of the Reverse Merger transaction.

### Overview

We develop, manufacture and market biologics products to domestic and international markets through our biologics division. Our products are used in a variety of applications including enhancing fusion in spine surgery, relief of back pain with a facet joint stabilization, promotion of bone growth in foot and ankle surgery, promotion of skull healing following neurosurgery and cartilage regeneration in knee and other joint surgeries.

Our medical devices division develops medical devices intended for use in several diverse clinical areas including orthopedic, plastic, and cardiovascular surgery. Our background and expertise is in the research, testing, and development of coatings for medical devices, particularly antimicrobial-based coatings.

The manufacturing and operations of the biologics and device divisions are organized separately while products from both are marketed through several channels including private label arrangements, independent distributors, joint development projects and our direct sales network which we began to implement in the last half of 2009. To date, we have established 13 regions with a regional vice-president in charge of all activities within the region and have hired and trained 52 sales representatives. Our customers are located worldwide, with approximately 97% of our third quarter 2010 sales being derived from customers located in the United States. Our headquarters, laboratory and manufacturing facilities are located in Belgrade, Montana.

### Revenue Model

We generate revenue from a variety of sources, including the following: license fees and royalties from collaborative product development efforts with medical device manufacturers; sales from products developed and manufactured by us under our own label; products manufactured by us under private labels for other device distributing companies; and contract revenue from analytical testing and development services provided to medical device manufacturer clients, which tailor our coating process to the client's specific product/medical application. In order for us to recognize revenue from these sources, the following criteria generally must be met:

- we have entered into a legally binding agreement with the customer for the product or services;
- the products or services have been delivered by us;
- our fee for providing the products or services is fixed and determinable; and
- our fee is actually collectible.

We record revenue net of any applicable sales, use, or excise taxes. If our arrangement with the customer includes a right of acceptance or a right to cancel, revenue is recognized when our products or services are accepted or when the right to cancel has expired. We sell to certain customers under consignment arrangements. Under these arrangements, revenue is recorded on the date of sale. Revenue for research and development services provided by us is recognized based upon our meeting certain performance standards, such as incurring qualifying costs, as set forth in the specific arrangement governing the provision of such services.

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Results of Operations

Comparison of Nine Months Ended September 30, 2010 and September 30, 2009

The following table sets forth key components of our results of operations during the nine months ended September 30, 2010 and 2009. The acquisition of Bacterin International Holdings, Inc. f/k/a K-Kitz, Inc. by Bacterin through the Reverse Merger was completed June 30, 2010. The combined presentation below refers to that of Bacterin International Holdings, Inc. f/k/a K-Kitz, Inc. and Bacterin.

| | Nine Months Ended September 30, 2010 | 2009 | Increase/ (Decrease) |
|---|---|---|---|
| Revenue | | | |
| Tissue sales | $ 9,936,095 | $ 4,995,682 | $ 4,940,413 |
| Royalties and other | 193,424 | 207,554 | (14,130) |
| Total Revenue | 10,129,519 | 5,203,236 | 4,926,283 |
| | | | |
| Cost of tissue sales (excluding depreciation expense presented below) | 1,832,967 | 1,631,555 | 201,412 |
| | | | |
| Gross Profit | 8,296,552 | 3,571,681 | 4,724,871 |
| | | | |
| Operating Expenses | | | |
| General and administrative | 5,741,315 | 3,705,892 | 2,035,423 |
| Sales and marketing | 5,465,431 | 1,120,996 | 4,344,435 |
| Depreciation | 457,156 | 495,218 | (38,062) |
| Stock Options/Restricted stock Compensation expense (excluded from general and administrative expense) | 1,227,871 | 446,960 | 780,911 |
| Total Operating Expenses | 12,891,773 | 5,769,066 | 7,122,707 |
| | | | |
| Loss from Operations | (4,595,221) | (2,197,385) | (2,397,836) |
| | | | |
| Other Income (Expense) | | | |
| Interest income (expense) | (680,418) | (337,303) | (343,115) |
| Change in warrant derivative liability | (6,826,533) | - | (6,826,533) |
| Other income/expense | (633,176) | 11,298 | (644,474) |
| | | | |
| Total Other Income (Expense) | (8,140,127) | (326,005) | (7,814,122) |
| | | | |
| Net Loss Before Benefit (Provision) for Income Taxes | (12,735,348) | (2,523,390) | (10,211,958) |
| | | | |
| Benefit (Provision) for Income Taxes | | | |
| Current | - | - | - |
| Deferred | - | - | - |
| | | | |
| Net Loss | $ (12,735,348) | $ (2,523,390) | $ (10,211,958) |

Revenue

Total revenue for the nine months ended September 30, 2010 increased 95% to $10,129,519 compared to $5,203,236 in the comparable prior year period. The increase of $4,926,283 was largely the result of transitioning the sales model in the second half of 2009 from a distributor based model with a limited direct sales force to a direct sales force model.

Cost of tissue sales

Costs of tissue sales consist primarily of tissue and device manufacturing costs. Costs of tissue sales increased by 12% or $201,412 to $1,832,967 from $1,631,555 for the nine months ended September 30, 2009. The increase was the result of increased costs associated with our higher sales partially offset by an inventory adjustment of the Company's biologics inventory of $669,000 which resulted in higher cost of sales as a percentage of revenue in the third quarter of 2009. Our gross profit margin for the nine months ended September 30, 2010 was 82% compared to 69% for the comparable prior year period. Excluding the Company's above noted inventory adjustment, the Company's gross margin was 81.5% for the nine months ended September 30, 2009.

Operating Expenses

Operating expenses include general and administrative expenses, selling and marketing expenses, depreciation, research and development expenses, and compensation costs, including incentive compensation. Operating expenses increased 124%, or $7,122,707, for the nine months ended September 30, 2010 compared to the nine months ended September 30, 2009, primarily due to the reasons set forth below.

General and Administrative

General and administrative expenses consist principally of corporate personnel compensation related costs and corporate expenses for legal, accounting and other professional fees as well as occupancy costs. General and administrative expenses increased 55%, or $2,035,423, to $5,741,315, for the nine months ended September 30, 2010 compared to 2009. The increase is largely associated with increased personnel costs as well as legal and professional fees incurred between the two periods.

Selling and Marketing

Selling and marketing expenses include sales based compensation expense and primarily consist of costs for trade shows, sales conventions and meetings, travel expenses, advertising and other sales and marketing related costs. Selling and marketing expenses increased 388%, or $4,344,435, to $5,465,431 for the nine months ended September 30, 2010 from $1,120,996 for the comparable prior year period. As a percentage of revenue, selling and marketing expenses increased to 54% in 2010 from 22% in the prior year. The increases were primarily the result of increased commissions and travel costs associated with the larger sales force as well as a substantial increase in marketing and advertising activities in 2010 as part of our switch to a direct sales force model from a distributor based model.

Depreciation

Depreciation expense consists of depreciation of long-lived property and equipment. Depreciation expense remained relatively unchanged, decreasing to $457,156 for the nine months ended September 30, 2010 from $495,218 in the comparable prior year period..

Stock Options/Restricted Stock Compensation Expense

Stock options compensation expense consists of non-cash based stock compensation expense and non-cash expense associated with granting restricted stock to consultants. Stock options/restricted stock compensation expense increased $780,911 to $1,227,871 for the nine months ended September 30, 2010 from $446,960 in the comparable year period. As a percentage of revenues, stock options compensation expense for the nine months ended September 30, 2010 was 12%, compared to 9% in the prior year due to the granting of restricted shares to consultants during the third quarter of 2010.

Interest Expense

Interest expense is from our promissory notes and convertible debt instruments. Interest expense for the nine months ended September 30, 2010 increased 102%, to $680,418, as compared to the nine months ended September 30, 2009. The increase was the result of interest expense associated with the incurrence of convertible debt during the last half of 2009 and first half of 2010.

Change in Warrant Derivitive Liability

For the nine months ended September 30, 2010, the Company recorded a non-cash charge of $6,826,533 associated with the issuance of warrants as part of its convertible debt financing, based upon the closing price of the Company's common stock on September 30, 2010.

Liquidity and Capital Resources

Since our inception, we have historically financed our operations through operating cash flows, as well as the private placement of equity securities and debt, and other debt transactions. Most recently, on June 30 and July 30, 2010, we raised approximately $9,272,000 through a private placement of equity securities and conversion of a portion of a bridge loan financing. At September 30, 2010, we had approximately $3,133,000 of cash and cash equivalents and accounts receivables. In addition, we have access to credit lines secured by certain of our accounts receivable balances. At September 30, 2010, we had convertible notes payable of approximately $400,000.

Net cash used in operating activities for the nine months ended September 30, 2010 was $5,889,896 This was primarily related to cash used to fund our operations as well as an increase of accounts receivable of approximately $1,287,420 and an increase in our inventory balance of approximately $1,981,835 For the nine months ended September 30, 2009, net cash used in operating activities was $2,083,645 due to a lower net loss compared to 2010 resulting from our decision to go to a direct sales effort in the second half of 2009.

Net cash provided by financing activities was $6,839,940 and $1,922,508 for the nine months ended September, 2010 and 2009, respectively. The net cash provided from financing activities during 2010 was primarily the result of the sale of approximately $4,700,000 in convertible debt instruments and the issuance of $5,095,934 of common stock, net of issuance costs, in connection with the above referenced Reverse Merger and related financing transactions. These amounts were partially offset by principal payments on outstanding loan and lease obligations.

Off Balance Sheet Arrangements

We do not have any off balance sheet arrangements that have or are reasonably likely to have a current or future effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity or capital expenditures or capital resources that are material to an investor in our shares.

Cash Requirements

We believe that our cash on hand from recent private placement of equity securities, proceeds from the WTI financing and the exercise of warrants, as well as cash flow expected from operations will be sufficient to meet our anticipated cash requirements through March 31,2011. If we do not meet our revenue objectives over that period, we may need to sell additional equity securities, which could result in dilution to our stockholders, or seek additional loans. The incurrence of indebtedness would result in increased debt service obligations and could require us to agree to operating and financial covenants that would restrict our operations. Financing may not be available in amounts or on terms acceptable to us, if at all. Any failure by us to raise additional funds on terms favorable to us, or at all, could limit our ability to expand our business operations and could harm our overall business prospects.

In addition, we currently anticipate that we will need to spend between $4 and $5 million over the next 5 years in order to increase, expand or update our existing facilities to meet our expected growth over that period.

Comparison of Twelve Months Ended December 31, 2009 and December 31, 2008

The following table sets forth key components of our results of operations during the twelve months ended December 31, 2009 and 2008, both in actual dollars and as a percentage of our revenue. The acquisition of Bacterin International Holdings, Inc. f/k/a K-Kitz, Inc. by Bacterin through the Reverse Merger occurred after March 31, 2010. The combined presentation below refers to that of Bacterin International Holdings, Inc. f/k/a K-Kitz, Inc. and Bacterin.

| | Twelve Months Ended December 31, | | | |
|---|---|---|---|---|
| | 2009 | | 2008 | |
| | Amount | % of Revenue | Amount | % of Revenue |
| Revenues | | | | |
| Tissue sales | $ 7,101,357 | 96.05% | $ 8,031,611 | 97.80% |
| Royalties and other | 292,136 | 3.95% | 180,848 | 2.20% |
| Total Revenue | 7,393,493 | 100.00% | 8,212,459 | 100.00% |
| | | | | |
| Cost of tissue sales (excluding depreciation expense presented below) | 2,318,142 | 31.35% | 1,522,658 | 18.54% |
| | | | | |
| Gross Profit | 5,075,351 | 68.65% | 6,689,801 | 81.46% |
| | | | | |
| Operating Expenses | | | | |
| General and administrative | 5,916,776 | 80.02% | 3,750,273 | 45.66% |
| Selling and marketing | 1,281,932 | 17.34% | 429,170 | 5.23% |
| Depreciation | 661,847 | 8.95% | 646,846 | 7.88% |
| Research and development | - | 0.00% | 288,091 | 3.51% |
| Stock Options / Restricted Stock Compensation expense (excluded from general and administrative expense) | 837,350 | 11.33% | 460,974 | 5.61% |
| Total Operating Expenses | 8,697,905 | 117.64% | 5,575,354 | 67.89% |
| | | | | |
| Income (Loss) from Operations | (3,622,554) | -49.00% | 1,114,447 | 13.57% |
| | | | | |
| Other Income (Expense) | | | | |
| Interest income (expense) | (513,934) | -6.95% | (1,374,360) | -16.74% |
| Other income / expense | 10,746 | 0.15% | 20,601 | 0.25% |
| | | | | |
| Total Other Income (Expense) | (503,188) | -6.81% | (1,353,759) | -16.48% |
| | | | | |
| Net Income Before Benefit (Provision) for Income Taxes | (4,125,742) | -55.80% | (239,312) | -2.91% |
| | | | | |
| Benefit (Provision) for Income Taxes | | | | |
| Current | - | 0.00% | - | 0.00% |
| Deferred | - | 0.00% | - | 0.00% |
| | | | | |
| Net Loss | $ (4,125,742) | -55.80% | $ (239,312) | -2.91% |

Revenue

Revenue in 2009 and 2008 was comprised primarily of tissue and device sales as well as royalty payments. Total revenue decreased by 10.0% year-over-year at $7,393,493 in 2009, compared to $8,212,459 in 2008. The decrease was largely the result of transitioning the sales model from a distributor based model with a limited direct sales force to a direct sales force model. In addition, during 2009, we terminated an agreement with a distributor with annual sales of approximately $3,000,000 as part of our transition to a direct sales force model.

Our largest single customers, Seaspine and Nufix, accounted for 12% and 37% of total consolidated revenues for the years ended 2009 and 2008, respectively. Our relationship with these customers was governed by a contract which

identified prices for the services to be rendered and payments to be made by the customers to us. These contracts were terminated in the third quarter of 2009 when the Company migrated to a direct sales model from a distributor based model.

Costs of tissue sales

Costs of tissue sales consist primarily of tissue and device manufacturing costs. Costs of tissue sales increased by 52.2%, or $795,484, to $2,318,142 for the year ended December 31, 2009, from $1,522,658 for the year ended December 31, 2008. The increase was the result of increased costs associated with our sales and a product mix shift which resulted in higher sales of products with higher costs.

Operating Expenses

Operating expenses include general and administrative expenses, selling and marketing expenses, depreciation, research and development expenses, and compensation costs, including incentive compensation. Operating expenses increased 56.0%, or $3,122,551 for the year ended December 31, 2009 compared to the year ended December 31, 2008.

General and Administrative

General and administrative expenses consist principally of employee related costs and corporate expenses for legal, accounting and other professional fees as well as occupancy costs. General and administrative expenses increased 58%, or $2,166,503 to $5,916,776, for the twelve months ended December 31, 2009 compared to 2008. The increase is largely associated with increased legal and professional fees incurred between the two periods. As a percentage of revenues, general and administrative expenses were 80.0% in 2009 compared to 46% in 2008.

Selling and Marketing

Selling and marketing expenses exclude sales based compensation expense and primarily consist of costs for trade shows, sales conventions and meetings, travel expenses, advertising and other sales and marketing related costs. Selling and marketing expenses increased 198.7%, or $852,762, to $1,281,932 for the twelve months ended December 31, 2009 from $429,170 for 2008. As a percentage of revenue, selling and marketing expenses increased to 17.34% in 2009 from 5.23% in the prior year. The increases were primarily the result of increased travel costs associated with the larger sales force and a substantial increase in marketing and advertising activities in 2009 as part of our switch to a direct sales force model from a distributor based model.

Depreciation

Depreciation expense consists of depreciation of long-lived property and equipment. Depreciation expense remained relatively unchanged increasing to $661,847 in 2009 from $646,846 in 2008.

Research and Development

Research and development expenses consist primarily of costs for product research and development and department related expenses. Research and development expenses were $288,091 in 2008. In 2009, we did not incur any research and development expenses as we focused our efforts on the implementation of our direct sales force model.

Stock Options/Restricted Stock Compensation Expense

Stock Options/Restricted Stock Compensation Expense expense consists of non-cash stock compensation expense. Stock Options/Restricted Stock Compensation Expense increased 81.6% or $376,376, to $837,350 for 2009 from $460,974 in the comparable year period for 2008. This increase was primarily due to our implementation of a direct sales effort in 2009 which substantially increased the sales force headcount. In addition, we granted more stock options to employees in 2009 than in the prior year. As a percentage of revenues, compensation expense in 2009 was

11.33% compared to 5.61% in the prior year.

Interest Expense

Interest expense is from our promissory notes and convertible debt instruments. Interest expense for the year ended December 31, 2009 decreased 62.61%, or $860,426, as compared to the year ended December 31, 2008. This decrease was a result of lower debt balances during the year and non-cash charges related to warrants issued with certain debt instruments.

Liquidity and Capital Resources

Since our inception, we have historically financed our operations through operating cash flows, as well as the private placement of equity securities and debt, and other debt transactions. Most recently, on June 30 and July 30, 2010, we raised approximately $9,272,000 through a private placement of equity securities and conversion of all of one earlier bridge financing and a substantial portion of another. At June 30, 2010, we had approximately $5,075,700 of cash and cash equivalents and accounts receivables. In addition, we have access to credit lines secured by certain of our accounts receivable balances. At June 30, 2010, we had convertible notes payable of approximately $1,850,000 in outstanding principal, of which $1,450,000 has been repaid and $400,000 has converted into shares of our common stock and warrants on the same terms as such debt would have converted in our recent private placement transaction if it had been converted therein.

Net cash used in operating activities for the six months ended June 30, 2010 was $4,018,463. This was primarily related to cash used to fund our operations as well as an increase of accounts receivable of approximately $675,099 and an increase in our inventory balance of approximately $916,633. For the six months ended June 30, 2009, net cash used in operating activities was $1,886,606 due to a lower net loss compared to 2010 resulting from our decision to go to a direct sales effort in the second half of 2009. Net cash used in operating activities for the year ended December 31, 2009 was $3,671,596. This was primarily related to cash used to fund the Company's operating losses as well as an increase of accounts receivable of approximately $739,000 and an increase in our inventory balance of approximately $851,000. For the twelve months ended December 31, 2008, net cash provided by operating activities was $502,008 due to a lower net loss compared to 2009.

Net cash provided by financing activities was $7,237,471 and $1,167,266 for the six months ended June 30, 2010 and 2009, respectively. The net cash provided from financing activities during 2010 was primarily the result of the sale of approximately $4,700,000 in convertible debt instruments and the issuance of $3,522,348 of common stock, net of issuance costs, in connection with the above referenced Reverse Merger and related financing transactions. These amounts were partially offset by principal payments on outstanding loan and lease obligations. Net cash provided by financing activities was $3,436,991 and $545,169 for the years ended December 31, 2009 and 2008, respectively. The net cash provided from financing activities during 2009 was $1,950,000 from the sale and issuance of common stock and $1,000,000 from releases on certain restrictions on cash. Net cash provided from financing in 2008 included $1,000,000 in proceeds from notes payable, $2,340,000 from issuance of convertible notes payable and $1,278,514 from the sale and issuance of common stock. The cash inflows were partially offset by the payments of $3,073,345 for long-term debt, stockholder notes and capital leases.

Off Balance Sheet Arrangements

We do not have any off balance sheet arrangements that have or are reasonably likely to have a current or future effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity or capital expenditures or capital resources that are material to an investor in our shares.

Cash Requirements

We believe that our cash on hand from our recent private placement of equity securities, proceeds from the WTI financing and the exercise of warrants, as well as cash flow expected from operations will be sufficient to meet our anticipated cash requirements through March 31, 2011. If we do not meet our revenue objectives over that period, we may need to sell additional equity securities, which could result in dilution to our stockholders, or seek additional loans. The incurrence of indebtedness would result in increased debt service obligations and could require us to agree to operating and financial covenants that would restrict our operations. Financing may not be available in amounts or on terms acceptable to us, if at all. Any failure by us to raise additional funds on terms favorable to us, or at all, could limit our ability to expand our business operations and could harm our overall business prospects.

In addition, we currently anticipate that we will need to spend between $4 and $5 million over the next 5 years in order to increase, expand or update our existing facilities to meet our expected growth over that period.

Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

As previously disclosed on a Current Report on Form 8-K filed with the SEC on September 24, 2010, W.T. Uniack & Co., CPA's P.C. was dismissed as our independent accountant. On September 24, 2010, we engaged Child, Van Wagoner & Bradshaw as our new independent registered public accounting firm. In connection with this change in accountants, there were no disagreements (as that term is used in Item 304(a)(1)(iv) of Regulation S-K) or reportable events (as described in Item 304(a)(1)(v) of Regulation S-K).

# BUSINESS

Unless the context otherwise requires, “we,” “our,” “us” and similar expressions used in this Business section refer to Bacterin prior to the closing of the Reverse Merger on June 30, 2010, and Bacterin International Holdings, Inc., f/k/a K-Kitz, Inc., as successor to the business of Bacterin, following the closing of the Reverse Merger transaction.

## Overview of Our Business

We develop, manufacture and market biologics products to domestic and international markets through our biologics division. Our products are used in a variety of applications including enhancing fusion in spine surgery, relief of back pain with a facet joint stabilization, promotion of bone growth in foot and ankle surgery, promotion of skull healing following neurosurgery and subcondral bone defect repair in knee and other joint surgeries.

Our medical devices division develops medical devices intended for use in several diverse clinical areas including orthopedic, plastic, and cardiovascular surgery. Our background and expertise is in the research, testing, and development of coatings for medical devices, particularly antimicrobial-based coatings.

In addition to the manufacture and sales of coated medical devices, the medical devices division works with our biologics division to produce and distribute OsteoSelect® DBM putty, an osteoinductive product used by surgeons as a bone void filler in the extremities and pelvis. DBM putty is considered a combination product by regulatory agencies - both a tissue and a medical device.

The medical devices division also develops custom surgical instrument kits for use with allografts processed by our biologics division. These kits offer state-of-the-art instrumentation that is designed based upon the needs and inputs of surgeons who desire to use the most minimally invasive techniques. The instrumentation is intended to be an optimal delivery system for the proper placement of our proprietary allografts. Objectives of allograft use include pain relief, aid in the regeneration of tissue, and to provide a scaffold for bone fusion in spinal and sports medicine procedures.

The medical devices division actively develops intellectual property associated with our devices and coating platforms, for the purposes of protecting our Bacterin-branded devices and for use in alliance projects.

The manufacturing and operations of the biologics and medical devices divisions are organized separately while products from both are marketed through several channels including independent distributors, joint development projects and our direct sales network, which we began to implement in the last half of 2009. We currently anticipate that we will need to spend between $4 and $5 million over the next five years in order to increase, expand or update our existing facilities to meet our expected growth over that period. The focus of our efforts and the use of the proceeds from the recent bridge financings and the private placement have been used, and will continue to be used, to, expand our direct sales network. To date, we have reached our goal and established 13 regions with a regional vice-president in charge of all activities within the region and have hired and trained 52 sales representatives.

Our headquarters, laboratory and manufacturing facilities are located at 600 Cruiser Lane, Belgrade, Montana 59714. Our telephone number is (406) 388-0480 and our fax number is (406) 388-0422. We also maintain an office at 8310 S. Valley Highway, No. 300, Englewood, Colorado 80112, and have sales employees located across the United States.

We began operations in 1998 as a sole proprietorship founded by Guy Cook, our President and Chief Executive Officer, as a spinout of the Center for Biofilm Engineering at Montana State University, or the CBE. Mr. Cook is an expert in microbial testing methods and has been recognized by the U.S. Food and Drug Administration, or the FDA, industry, and academia for his contributions to the development of bioactive coatings. This sole proprietorship was eventually incorporated as "Bacterin, Inc." in the state of Montana in January 2000 to further Mr. Cook's work. In March 2004, Bacterin, Inc.'s stockholders completed the terms of a share exchange agreement with a company called Oil & Gas Seekers, Inc., a Nevada corporation, or OGS, which subsequently changed its name to "Bacterin International, Inc.", to effectively become a publicly-traded corporation. As a result of this transaction, the stockholders of Bacterin, Inc., became stockholders of us, and Bacterin, Inc., became our wholly owned subsidiary. At the end of 2004, management concluded that this transaction was problematic and did not deliver the expected result. Based on this determination, we entered into an agreement in 2005 to amend the terms of the exchange transaction with the former majority stockholder of OGS. In May 2005, we merged Bacterin, Inc., up and into us.

Leveraging off the "state of the art" research and development activities ongoing at the CBE in biofilm technology, we began as a biomaterials testing laboratory and have systematically expanded our strategic vision towards the development of Bacterin-labeled medical devices. Our revenues were historically derived from testing services and milestone payments from collaborative product development agreements with various "blue chip" medical manufacturers. Today, however, we generate revenue from a number of revenue sources including the following: sales from products developed and manufactured by us under our own label; and contract revenue from analytical testing and development services provided to medical device manufacturer clients, which tailor our coating process to the client's specific product/medical application. To a much lesser extent, under certain circumstances, we will receive license fees or royalties under collaborative product development efforts with medical device manufacturers.

During 2008, we reached an important transition point in our history. Most of our business endeavors prior to that time had been devoted to developing our products with revenue generated from a variety of limited sources, including testing, government grants and unsubstantial product sales. In 2008, however, revenue from product sales either under our name or "private label" became our primary source of revenue though we no longer generate revenue from any private label arrangements.

Industry and Market Overview

The orthopedic biomaterials market consists of materials that are organic, inorganic or synthetic in nature. These materials are implanted or applied in or near the indicated bone to facilitate healing, encourage bone tissue augmentation, compensate in areas where bone tissue is depleted and restore structure to allow for repair. Orthopedic biomaterials are capable of producing specific biological action or regenerative responses that are beyond what is observed in normal healing. These materials are often used as substitutes to autograft materials, which are taken from a harvest site in the patient to patch or repair the wounded or unhealthy site.

Bone is a biologically active tissue and may or may not regenerate depending on the condition of the patient. The damage may be significant enough that a scaffold to help regenerate the surgical site may be necessary. In 2009, the orthopedic biomaterials market was valued at almost $3.5 billion. This market is expected to grow at a CAGR of 8.9% by 2016. (Idata Research Inc. 2010, U.S. Market for Orthopedic Biomaterials).

Products and Services

We have developed and currently manufacture and sell several human tissue-based products, primarily allografts, into the medical marketplace through our biologics division. In addition, we also manufacture and sell, directly under our own name and indirectly through distributors, various coating and surgical drain products through our medical devices division.

Biologics Division

Our biologics products include OsteoSponge®, OsteoSponge® SC, OsteoWrap®, OsteoLock® and BacFast®, as well as certain other allograft products which are briefly described below:

- OsteoSponge® is a form of demineralized bone matrix made from 100% human bone. Derived from trabecular (cancellous) bone, OsteoSponge® provides a natural scaffold for cellular in-growth and exposes bone-forming proteins to the healing environment. The malleable properties of OsteoSponge® enable it to conform to, and fill, most defects. Upon compressing the allograft, OsteoSponge® springs back to completely fill the void. Its unique mechanical and biological properties make OsteoSponge® an ideal bone graft for use in various orthopedic practices including spine, neurology, cranial/maxillofacial, trauma, plastic/reconstruction and general procedures where new bone growth is needed.

- OsteoSponge® SC is a form of OsteoSponge® designed to be used in joint surgery. Bacterin has shown, in goat studies, the ability to re-generate cartilage in joint repair and believes that this product has the potential to significantly change the standard of care in human joint surgery. We have received permission from the FDA to market this product as a subchondral bone void filler and are currently marketing it as such. Surgeons are using the product and we are beginning trials to establish the ability to market it as a cartilage re-generation scaffold. These trials are likely to take two years and we will likely publish preliminary results of the study at six months and one year. There can be no assurance that these trials will be successful or lead to any FDA action. We have allocated approximately $750,000 to fund this clinical trial.

- OsteoWrap® is 100% human cortical bone demineralized through a proprietary process to make the graft flexible while maintaining allograft integrity. This product has various applications in orthopedic, neurological, trauma, oral/maxillofacial and reconstructive procedures. OsteoWrap® can wrap around non-union fractures to assist with fusion, can act as a biologic plate or can be used in conjunction with a hardware plate system. Additionally, this product provides the surgeon with superior handling characteristics as the allograft can be easily sized using surgical scissors or a scalpel, and will withhold sutures or staples for fixation.

· OsteoLock® and BacFast® are facet stabilization dowels made from human bone. The shape of our facet stabilization dowel is engineered to maximize osteoconductivity and surface area contact, as well as provide stability to prevent migration from the surgical site. BacFast® HD, having the same design as OsteoLock®, is optimized through our proprietary demineralization technology. This technology increases the surface area of the outer collagen matrix of the graft while exposing native bone morphogenic proteins (BMPs) and growth factors. Because of the hyper-demineralization technology, BacFast® HD has osteoinductive properties, as well as being osteoconductive. OsteoLock® and BacFast® can be used to augment spinal procedures, or as a stand-alone procedure for mild spinal conditions. While this product is currently in production and use, Bacterin is initiating clinical studies to further support its effectiveness and we have allocated approximately $100,000 to fund these clinical trials. There can be no assurance of the success of these trials.

- hMatrix™ dermal scaffold is an extension of Bacterin's core biologics technology and our third human acellular biological scaffold. hMatrix™ is an acellular matrix made from donated human dermal tissue that is used to replace a patient's damaged tissue. hMatrix™ provides a natural collagen tissue scaffold that promotes cellular ingrowth, tissue vascularization and regeneration. The hMatrix™ scaffold tissue reabsorbs into the patient's dermal tissue for a biocompatible, natural repair. We are planning commercial release of hMatrix™ during first quarter of 2011.

In addition, we make and sell (i) sports allografts which are processed specifically for anterior and posterior cruciate ligament repairs, anterior cruciate ligament reconstruction and meniscal repair, (ii) milled allografts which are comprised of cortical bone milled to desired shapes and dimensions, also called milled spinal allografts, and (iii) traditional allografts for multi-disciplinary applications including orthopedics, neurology, podiatry, oral/maxillofacial, genitourinary and plastic/reconstructive.

We are hoping to be able to expand our product definition for certain of our products to claim cartilage regeneration capability. Over the past few months, approximately 15 patients thus far have undergone knee, foot or ankle surgery for the purposes of the trial to make such claims. We plan to have 200 patients in the trial by year end. Thus far, the first patients were operated on in early 2010 and, in all cases, no adverse events were reported. We are 5 to 7 months away from reaching an anecdotal threshold at which point we hope that our findings can be presented to the sports medicine and orthopedic repair community.

Medical Device Products

Our medical devices division researches, tests and develops coatings for medical devices, particularly antimicrobial-based coatings. Such coatings contain active agents and provide our products with several potential advantages over traditional medical devices. They offer a means of protecting the surface of a medical device from contamination by pathogenic organisms, thereby minimizing the potential for infection. Other coatings can serve as a reserve for local delivery of active agents, enhancing a variety of biological functions such as bone growth and pain management. This division produces and distributes OsteoSelect® DBM putty, an osteoinductive product used by surgeons as a bone void filler in the extremities and pelvis.

OsteoSelect® DBM putty is engineered with the surgeon in mind. With outstanding handling characteristics, OsteoSelect® can be easily molded into any shape and compressed into bony voids. Taking the design a step further, Bacterin has validated a low-dose, low-temperature gamma sterilization process to provide maximum osteoinductive potential while still affording device level sterility. Every production batch of OsteoSelect® is tested for its bone growth characteristics allowing us to make that unique marketing claim.

Our medical devices division also develops custom surgical instrument kits for use with allografts processed by our biologics division. These kits offer state-of-the-art instrumentation that is designed based upon the needs and inputs of surgeons who desire to use the most minimally invasive techniques. The instrumentation is intended to be an optimal delivery system for the proper placement of our proprietary allografts. Objectives of allograft use include pain relief, aid in the regeneration of tissue, and to provide a scaffold for bone fusion in spinal and sports medicine procedures. We currently sell a surgical drain series called ViaTM, which is used to drain exudate from a surgical site. Building upon the ViaTM platform, Bacterin plans on releasing a second generation product called the Elutia® surgical drains which will be performance enhanced via an antimicrobial coating to help reduce the incidence of surgical site infection.

Our wound drain product is gaining attention at the VA Hospitals. During August 2010, we received notice that the Brook Army Medical Hospital in Texas, a level 1 trauma facility, will begin using our wound drain product system wide. This hospital currently reports that over fifty percent (50%) of post operative infections occur due to an uncoated wound drain that it is currently using. We are hopeful that over the next several months, our wound drain product will be distributed throughout the VA Hospital system. Our wound drain products sell into hospitals for $40 and cost us approximately $6 to produce.

On August 10, 2010, we announced that the FDA has cleared RyMed Technologies, Inc.'s InVision-Plus® CS™ needleless IV connector for commercialization. In a joint development project between RyMed and our company, the InVision-Plus CS™ is treated with our patented antimicrobial technology. The InVision-Plus CS™ is the only needleless IV connector to offer the combined antibacterial protection of chlorhexidine and silver. The device is designed to reduce potentially deadly, catheter-related bloodstream infections. We have received an initial order for the InVision-Plus CS™ with full production expected by the fourth quarter of 2010. We will receive a royalty on all devices treated for RyMed.

Technology and Intellectual Property

Patents

Our patent efforts have been, and will continue to be, primarily focused in two key areas:

- The delivery of bioactive agents impregnated into or onto metals, polymers or tissues which, when activated by bodily fluids, release the agent into the surrounding environment; and

- The development of innovative and novel, engineered tissue implants or constructs which employ acellular tissue and processes, and enhanced demineralized bone matrix products.

The following table summarizes our current patent portfolio, including patents covering technology licensed by us for use or inclusion in certain of our products:

| Title | Business Purpose | First Inventor | Serial or Patent Number | Date Filed or Granted | Status |
|---|---|---|---|---|---|
| 1. Pending U.S. Applications | | | | | |
| MEDICAL DEVICE INCLUDING A BIOACTIVE IN A NON-IONIC AND AN IONIC FORM AND METHODS OF PREPARATION THEREOF | This application arose out of a now defunct project. We retained rights as the technology may prove useful in the future. The patent describes the modification of elution profiles via active agent equilibration; it is potentially applicable to many coated products. | Mike Johnson | 11/864,360 | 9/28/2007 | Undergoing further examination |
| ANTIMICROBIAL COATING FOR INHIBITION OF BACTERIAL ADHESION AND BIOFILM FORMATION ® | This application relates to the coating used for the Elutia® wound drain and for the Bard BioBloc coating on their HemoStar hemodialysis catheter. The efficacy period can be varied according to the desired outcome; the coating has shown in vitro efficacy for between 7 and 21 days. | Guy Cook | 10/891,885 | 7/15/2004 | Non-final Office Action mailed 9/15/09; response submitted 12/15/09 |
| PROCESS FOR DEMINERALIZATION OF BONE MATRIX WITH PRESERVATION OF NATURAL GROWTH FACTORS | This application is intended to protect OsteoSponge®, a core product produced by our Biologics division. OsteoSponge® is a novel form of | Nancy J. Shelby | 12/130,384 | 5/30/2008 | First examination: November 2010 (estimated) |

| | | | | | |
|---|---|---|---|---|---|
| | demineralized bone matrix which provides a natural scaffold for cellular growth and exposes bone growth inducing proteins to the healing environment. | | | | |
| 2. Pending Foreign Applications | | | | | |
| MEDICAL DEVICE INCLUDING A BIOACTIVE IN A NON-IONIC AND AN IONIC FORM AND METHODS OF PREPARATION THEREOF | This application arose out of a now defunct project. We retained rights as the technology may prove useful in the future. The patent describes the modification of elution profiles via active agent equilibration and is potentially applicable to many coated products. | Mike Johnson | PCT/US2007/ 079924 | 9/28/2007 | Preliminary Report on Patentability generated 3/13/09 |
| ANTIMICROBIAL COATING FOR INHIBITION OF BACTERIAL ADHESION AND BIOFILM FORMATION | This application relates to the coating used for the Elutia® wound drain and for the Bard BioBloc coating on their HemoStar hemodialysis catheter. The efficacy period can be varied according to the desired outcome; the coating has shown in vitro efficacy for between 7 and 21 days. | Guy Cook | PCT/US2005/ 015162 | 4/28/2005 | Entered National Phase in: Europe, Australia, Canada, Japan |

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| PROCESS FOR DEMINERALIZATION OF BONE MATRIX WITH PRESERVATION OF NATURAL GROWTH FACTORS | This application is intended to protect OsteoSponge®, a core product produced by our Biologics division. OsteoSponge® is a novel form of demineralized bone matrix which provides a natural scaffold for cellular growth and exposes bone growth inducing proteins to the healing environment. | Nancy J. Shelby | PCT/US2008/ 006942 | 6/2/2008 | Entered national Phase in: Europe, Canada, Mexico, Korea |
| AN ELASTOMERIC ARTICLE INCORPORATED WITH A BROAD SPECTRUM ANTIMICROBIAL | This application was generated as a means of protecting the technology used for a forthcoming product. We have observed long term (over 30 days) in vitro efficacy with this technology. | Benjamin P. Luchsinger | PCT/US2009/ 005103 | 9/11/2009 | Awaiting International Search Report (this application will enter the US through PCT) |

3. In-Licensed Intellectual Property

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| SWOLLEN DEMINERALIZED BONE PARTICLES, FLOWABLE OSTEOGENIC COMPOSITION CONTAINING SAME AND USE OF THE COMPOSITION IN THE REPAIR OF OSSEOUS DEFECTS | This patent protects OsteoSelect®, Bacterin's DBM putty. OsteoSelect® has exceptional handling characteristics and can easily be molded into any shape and compressed into bony voids. Bacterin employs a low-dose, low-temperature sterilization process to provide maximum osteoinductive potential while maintaining device-level | Simon Bogdansky | 5,284,655 | 2/8/1994 | Granted - US Expires April 2011 |

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| | sterility. | | | | |
| FLOWABLE DEMINERALIZED BONE POWDER COMPOSITION AND ITS USE IN BONE REPAIR | This patent protects OsteoSelect®, Bacterin's DBM putty. OsteoSelect® has exceptional handling characteristics and can easily be molded into any shape and compressed into bony voids. Bacterin employs a low-dose, low-temperature sterilization process to provide maximum osteoinductive potential while maintaining device-level sterility. | Robert K. O'Leary | 5,290,558 | 3/1/1994 | Granted - US Expires April 2011 |

We believe our patent filings and patent position will facilitate growth and enhance our proprietary core competencies, enabling us to protect and expand revenue growth and stockholder value in the future. We expect that additional patent applications will be filed and prosecuted as inventions are discovered, technological improvements and processes are developed and specific applications are identified. The status of individual patents and patent jurisdiction is maintained in our internal records. We anticipate, however, that there may be instances in which we enter into collaborative research and development agreements with medical device companies under such terms that the medical device company may or will retain a right to make future patent filings arising from such cooperative development agreement. In such instances, we will attempt to protect our overall patent use rights by agreements which limit the right of the collaborative party to an exclusive right only as it pertains to the field of use, as defined by the applicable project's scope of work. In this manner, we anticipate that we will receive future benefit and use of such intellectual property outside the field of use, as defined by any given scope of work. There can be no assurance that we will be able to obtain final approval of any patents.

Trademarks

We believe in the superiority of our technology and products. As a result, we have invested in the development and protection of the names of our products in order to drive consumer awareness and loyalty to the brand. To protect this investment, we have registered, and continue to seek registration, of these trademarks and continuously monitor and aggressively pursue users of names and marks that potentially infringe upon our registered trademarks. We currently own registered trademarks to the following brand names of certain of our products: OsteoSponge®, OsteoWrap®, OsteoLock®, BacFast®, OsteoSelect®, and Elutia® and have recently applied to register hMatrix™. We recently sued Allosource for infringing our OsteoSponge® trademark by marketing their competitive allograft product under the name "AlloSponge." See "Business - Legal Proceedings."

Trade Secrets

To safeguard our proprietary knowledge and technology, we rely heavily upon trade secret protection and non-disclosure/confidentiality agreements with employees, consultants and third party collaboration partners with access to our confidential information. There can be no assurance, however, that these measures will adequately protect against the unauthorized disclosure or use of confidential information, or that third parties will not be able to independently develop similar technology. Additionally, there can be no assurance that any agreements concerning confidentiality and non-disclosure will not be breached, or if breached, that we will have an adequate remedy to protect us against losses. Although we believe our proprietary technology has value, because of rapid technological changes in the medical industry, we also believe that proprietary protection is of less significance than factors such as the intrinsic knowledge and experience of our management, advisory board, consultants and personnel and their ability to identify unmet market needs and to create, invent, develop and market innovative and differentiated new medical devices.

Donor Procurement

We implemented our biologics division, among other reasons, to secure and process our own tissue, which posed initial challenges and associated operational disadvantages. At the time we embarked on this plan, we lacked donor sources, manufacturing capabilities, and distribution channels. We also lacked the vertical integration of an in-house tissue processing laboratory and were thus constrained by sub-contracting tissue processing to outside processors. These same sub-contractors are essentially suppliers of their own tissue to the marketplace and are hence ultimately our competitors. We have since successfully secured rights of first refusal of human tissue with multiple recovery agencies. Concurrent with this initiative, we also sought to secure future allograft production capability by constructing our own tissue processing facility. We have now begun efforts to expand our network for donor tissue in anticipation of increased production and believe that this effort, along with our current network of procurement agencies, will be sufficient to supply enough donors to meet our forecasted revenue volume through 2011 and

beyond. We expect to be able to continue to build the network for donor tissue as the needs arise.

Sales and Marketing

We are committed to building our direct sales channel into the primary method of distributing our products. We have promoted three regional vice presidents to the role of executive vice-president to lead the North, South and West thirds of the United States and established 13 regions with a regional vice president in charge of all activities within the region. We have hired and trained 52 sales representatives toward a near term goal of establishing four to five sales representatives in each region. While we expect that the cost of this initiative will likely result in a net loss from operations in 2010, it is our expectation that this investment in the direct sales network will lead to higher revenue in 2010 and beyond, as well as profitability in 2011 and beyond. No assurance can be given that these efforts will be successful.

After 7 months of testing by Broadlane, Inc., the largest operator of healthcare supply chains in the United States, and its clients, we were accepted in May 2010 as an authorized vendor in its group purchasing program, which enables Broadlane's customers to purchase products from us. Our contract with Broadlane has a three year term and may be terminated by either party for breach of contract and Broadlane may terminate the agreement if Bacterin or any of Bacterin's key personnel is convicted of an offense related to health care or listed by a federal agency as being debarred, excluded, or otherwise in eligible for federal program participation. Broadlane manages approximately $10 billion in contract volume with over 6,000 medical facilities and 33,000 physician practices in its network. In June 2010, Broadlane issued a newsletter to its entire network showcasing and introducing Bacterin to all of its hospitals, independent delivery networks, ambulatory care and surgery centers. As a result of this contract, our sales force can now proceed to sell our products to this expansive network of doctors. We have already received our first order from Tenet Hospitals, which runs over 40 hospitals, and Advocates in Illinois, which manages approximately 25 hospitals.

We also market our products through independent distributors who receive a discount off of our list price and then sell to their customer base. Because we have experienced a decline in revenue from this sales channel, we expect it will continue to represent a smaller portion of our overall revenue as our direct distribution channel grows.

Within the medical devices division, our marketing strategy is to develop product development alliances with multinational medical device companies at the same time as we develop our own new products in fields or applications outside of the rights of our collaborative partners. We have implemented this strategy and are pursuing contract opportunities with other medical device companies.

Although we are in the process of discontinuing it, we also have a physician compensation program that compensates physicians as employees for referring our products to other surgeons and medical care providers with whom they do not have a disqualifying "financial relationship" under applicable laws. Physician employees, at our direction, refer us to other physicians and are paid a commission on all revenue generated by the referred physicians' use of our products. We have established procedures that are designed to prevent abuses involving these physician employees and others with whom they have financial relationships and been advised by counsel that this program complies with the Stark laws and applicable anti-kickback regulations.

Growth Strategy

After multiple years of product development, we believe that our technology has been largely market tested, and since 2009, we have been transitioning our focus to appropriately market and distribute our products. We have spent months preparing the business to capitalize on our core markets, as well as new market opportunities. In particular, we have diversified our supply of donor tissue, expanded our production capabilities, developed the infrastructure of what we believe will grow into a formidable sales force, refined the message to our market and started gathering proof points on how to scale our revenue in these markets.

We began implementing a direct sales network in July 2009. As of December 31, 2009, we had 7 regional vice presidents and 21 sales representatives. Currently, we have one national sales manager, 3 executive vice presidents, 12 regional vice presidents, and 28 sales representatives. We have met our goal of growing this sales force to 3 executive vice presidents, 13-15 regional vice presidents, and 52 sales representatives. We strive to hire sales representatives with deep industry experience and pre-existing contacts. In addition, we plan to utilize small independent sales representatives with entrenched physician relationships. We expect revenue to move towards 50% by employed sales representatives and 50% by independent sales representatives.

We are working on developing and implementing a high-level, national effort to present our products as a value proposition to hospital chains, insurers and other purchasing organizations. To this end, we have already entered into agreements with Banner Hospitals, the Hospital for Special Surgery, Broadlane (a purchasing organization for 1,200 hospitals and other medical facilities), and Access Mediquip (a national purchasing organization for ambulatory surgery centers). These agreements are paving the way for our sales representatives to call on physicians, as the hospital process has already been approved.

Competition

Because the orthopedic biomaterials market overlaps with a number of medical fields - spine, trauma, joint reconstruction, sports medicine, pharmaceuticals and biotechnology - fragmentation is to be expected. However, there is one clear leader in the market: Medtronic held 27.1% of the market in 2009. Medtronic's lead is based on the strength of their Infuse® growth factor product. However, the growth potential of this product has been affected by some negative media attention regarding off-label usage and adverse events with specific indications.

Beyond Medtronic, the orthopedic biomaterials market is comprised of a great number of players, each offering a multitude of products. It is expected that several new products will emerge over the coming years. These assumptions are based on the advance of technology and the clinical promise of regenerative therapies such as stem cells and bone marrow concentration.

Specific competitors in the orthopedic biomaterials markets are: Medtronic , DePuy, Synthes, Arthrex, Smith & Nephew, Nuvasive, OrthoFix, Biomet, Osteotech, Orthovita, MTF, Stryker, RTI, AlloSource, Lifenet Health, Integra, ConMed/Linvatec, Wright, Exactech, ArthroCare, Harvest, and Arteriocyte. (Idata Research Inc. 2010, U.S. Market for Orthopedic Biomaterials).

Government Regulation

We produce human allografts that are regulated and comply with all the criteria under both Sections 361 and 351 of the Public Health Service Act. Compliance is determined by the FDA during the inspection of our production facility. To date, we have successfully completed all of our FDA inspections. We are registered with the FDA as a manufacturer of human cellular and tissue products (HCT/Ps) as well as medical devices. We are an accredited member of the American Association of Tissue Banks in good standing. We meet all licensing requirements for the distribution of HCT/Ps in the States of Florida, California, Maryland and New York. We cannot predict the impact of future regulations on either us or our customers.

Human Tissue

Our human tissue products, which are sold through our biologics division, have been regulated by the FDA since 1993. In May 2005, three new, comprehensive regulations went into effect that address manufacturing activities associated with HCT/Ps. The first requires that companies that produce and distribute HCT/Ps register with the FDA. The second provides criteria that must be met for donors to be eligible to donate tissues and is referred to as the "Donor Eligibility" rule. The third rule governs the processing and distribution of the tissues and is often referred to as the "Current Good Tissue Practices" rule. Together, they are designed to ensure that sound, high quality practices are followed to reduce the risk of tissue contamination and of communicable disease transmission to recipients. Our HCT/P products such as OsteoSponge® are regulated by the Center for Biologics Evaluation and Research. Our OsteoSponge® and OsteoWrap® products are regulated as a HCT/P as determined by the Tissue Reference Group and regulated solely under Section 361 of the Public Health Service Act and 21 CFR Part 1271.

Medical Devices

Because our medical devices incorporate coating technologies, they are subject to regulation by the FDA. These medical devices require the approval of the FDA prior to sale within the United States. The manufacturers and licensees who use our coating technology in their medical devices will have the burden of demonstrating the safety and efficacy of the medical devices, a burden which we will assist such manufacturers and licensees in demonstrating to the extent our coating technologies are at issue. Sales of medical devices using our coating technology in the European Union will require the CE Mark certification and sales of such medical devices in Canada will require approval from the Medical Device Bureau of Canada.

Within the United States, the FDA process requires that a pre-market notification, or a 510(k) Submission, be made to the FDA to demonstrate that the medical device is safe and effective and is substantially equivalent to a legally marketed device that is not subject to pre-market approval. Applicants must compare the device to one or more similar devices that are commercially available in the U.S. (known as the “predicate device”), and make and support a claim of substantial equivalency to such predicate device. Support for such claims must include descriptive data and, when necessary, performance data. In some cases, data from clinical trials must also be submitted in support of a 510(k) Submission. The FDA must then issue an order finding substantial equivalency before the devices may be commercially distributed in the U.S. This process can take anywhere from three months to two or three years, and can be extremely expensive. The Center for Devices and Radiological Health regulates medical devices, including our OsteoSelect® DBM putty.

ISO Certification

In March 2010, we announced that we had received certification from the International Organization for Standardization, or ISO, for fulfilling the requirements of ISO 13485:2003. The Geneva based International Organization for Standardization is the world's largest developer and publisher of International Standards. ISO 13485:2003 specifies requirements for a quality management system. To obtain ISO 13485:2003 certification, an organization must demonstrate its ability to provide medical devices that consistently meet applicable customer and regulatory requirements. The primary objective of ISO 13485:2003 is to facilitate harmonized medical device regulatory requirements for quality management systems. All requirements of ISO 13485:2003 are specific to organizations providing medical devices, regardless of the type or size of the organization. The certification assures our customers and partners of our commitment to quality, and in the quality of our innovative products and processes. Additionally, we believe that the ISO 13485:2003 certification offers new markets and business opportunities for our products in the global marketplace.

Employees

As of November 23, 2010, we had 115 full-time employees, of whom 36 were in product development, 67 in sales and marketing, and 12 in administrative. In addition, we make use of a varying number of temporary employees and outsourced services to manage normal business cycles. None of these employees is covered by a collective bargaining agreement and our management considers relations with employees and services partners to be good.

Facilities

We lease approximately 16,000 square feet in a building located at 600 Cruiser Lane, Belgrade, Montana 59714. In addition to our corporate headquarters, this space also includes a clean room, fully equipped diagnostics laboratory, microbiology laboratory and testing laboratory. We lease the building under a ten-year operating lease which runs through October 2013 and has a monthly lease payment of $10,000. The lease also has a ten-year renewal option.

In November 2007, we purchased a 14,000 square foot facility at 664 Cruiser Lane, Belgrade, Montana 59714. This building is an FDA registered facility with 5 "Class 1,000" clean rooms and currently houses our medical device coatings operations. The validated manufacturing areas and laboratory facilities located in this facility provide processing and testing space to manufacture medical devices pursuant to FDA, GMP regulations, and ISO 13485:2003. We expect this facility to meet all of our regulatory requirements for the manufacture of future Bacterin-label products, including our surgical drains (ViaTM and Elutia®), as well as production requirements for coated medical devices from our medical device partners. The facility is registered with the FDA for device design, device manufacture, and contract manufacture, as well as for screening, testing, storing, and distributing biological tissues.

We also lease office space in Englewood, Colorado, where certain of our administrative and sales functions are housed.

Legal Proceedings

In November 2009, we were served a complaint in connection with the following court action filed in Utah state court: Yanaki and Activatek v. Cook and Bacterin International, Inc., case number 090912772. This action involves the plaintiff's attempt to sell shares of our common stock to a third party in a private sale and claims, as its primary allegation, tortuous interference with the sales contract. Plaintiff seeks $300,000, 358,904 shares of our common stock, attorneys fees and costs. We believe this lawsuit is without merit and we are conducting a vigorous defense.

We initiated an arbitration proceeding in Bozeman, Montana to collect a large account receivable from OrthoPro, LLC under a Private Label Distribution Agreement. OrthoPro has made a counterclaim in that arbitration which, in our judgment, is without merit. We plan to vigorously pursue the recovery of all amounts owed and to defend against the counterclaim.

As a result of our policy to aggressively defend our intellectual property rights, we recently filed and served a complaint in a lawsuit styled Bacterin International, Inc. v. Allosource in the Federal District Court for the District of Colorado. Our complaint is based on Allosource's infringement of our OsteoSponge® trademark through Allosource's use of the name "AlloSponge." We are seeking an injunction against the continuing use of the ALLOSPONGE mark, plus unspecified commercial monetary damages. Allosource has generally denied all allegations and has filed a counterclaim to cancel the federal registration for OsteoSponge®. We believe the counterclaim has no merit and we intend to aggressively pursue our infringement claims.

We have been served a complaint in connection with Civil Action No. 8:10-cv-01589-VMC-EAJ filed by minSURG International, Inc., or minSURG, in the United States District Court in the Middle District of Florida. In this action, minSURG alleges infringement of U.S. Patent No. 7,708,761, entitled "Spinal Plug for a Minimally Invasive Facet Joint Fusion System" by many companies in our industry. minSURG seeks an injunction against alleged patent infringement plus unspecified commercial monetary damages. We have entered into a joint defense agreement with many of the other defendants in this action and plan a vigorous defense. Regardless of the outcome of this case, we do not anticipate this notice to have a material impact on our overall sales or operating results.

On September 20, 2010, we filed a complaint in the United States District Court for the District of Colorado (Civil Action No. 10-CV-02294-RPM-KMT) against Advanced Biologics, Inc. and Advanced Biologics, LLC, or Advanced, alleging infringing use of the Company's "OsteoSponge" trademark and sent a demand letter to Advanced, demanding Advanced cease any and all use of its "OsteoAMP Sponge" trademark or any other "OSTEO" and/or "SPONGE" formative mark in connection with human allograft tissue, demineralized bone matrix, and cancellous bone products. We are currently negotiating with Advanced and expect to reach an amicable resolution without resorting to litigation.

# MANAGEMENT

## Executive Officers and Directors

The names, ages and positions of our executive officers and directors are as follows:

| Name | Age | Position |
|---|---|---|
| Guy Cook | 45 | Chairman of the Board, Chief Executive Officer, President and Chief Scientific Officer |
| Mitchell T. Godfrey | 64 | Director |
| Kent Swanson | 65 | Director |
| Michael Lopach | 62 | Director |
| Jon Wickwire | 66 | Director |
| John P. Gandolfo | 50 | Chief Financial Officer |
| Jesus Hernandez | 54 | Vice President of Biologics |
| Darrel Holmes | 57 | Vice President of Medical Devices |

The principal occupations for the past five years (and, in some instances, for prior years) of each of our executive officers and directors are as follows.

Guy Cook, Chairman of the Board, Chief Executive Officer, President and Chief Scientific Officer, is considered an international expert in biofilm science and its application. He is widely published and has been invited to speak at many prominent biofilm conferences, including the “Anti-Infective Materials” Seminar in Tokyo and the FDA-CDRH Antimicrobial Device Efficacy Testing Seminar. Mr. Cook started his career as a product specialist in the Image Analysis Department for Laboratory Equipment Company in Chicago. He later became President of Delta Resources in Crystal Lake, Illinois, which specialized in developing customized image analysis solutions for the academic community. In 1996, he moved to Montana and worked as a Confocal Microscopist for the Center for Biofilm Engineering at the Montana State University where he developed several proprietary testing models for the medical device industry. Mr. Cook attended the University of Indiana and received Bachelor of Science degrees in Finance and Economics.

Mitchell T. Godfrey, Director, has been involved over the past 25 years in a number of private enterprises, including consulting for and participation in firms in the manufacturing, medical devices, nuclear, service and animal health industries. Mr. Godfrey graduated from the University of Utah in 1968 with Bachelor of Science degrees in psychology and mathematics. He served as a Lieutenant in the U.S. Navy for a period of four years in the 1960s. Upon his return from overseas duty, he served as a director of the Utah Vietnam Agent Orange Program. He currently is the Chairman of the Montana based Crow Creek Falls Conservation Group and has been actively involved in many other organizations. Mr. Godfrey joined us in October 2003 as our Chief Financial Officer until December 2007, when his primary responsibility was changed to investor relations. Mr. Godfrey currently serves as a consultant.

Kent Swanson, Director, was with Accenture for over 32 years, retiring from the firm in 2001 as a Senior Partner. He held global leadership and management positions in a wide range of industries and geographies. From 2001 to 2008, he was the Board Chair of ALN Medical Management; providing outsourced services for clinic-based physician practices. Also from 2001 to 2008, he was Board Chair for Boys Hope Girls Hope of Colorado, a charitable organization providing a home and scholarship education for disadvantaged children with significant capabilities and promise. From 2002 to 2009, he was a Board member, Audit Committee member and Compensation Committee Chair for MPC Computers. Mr. Swanson graduated with distinction from the University of Minnesota earning an M.S. in Business and received an M.B.A. from the University of Chicago in 1969.

Michael Lopach, Director, is a certified public accountant with over 30 years of accounting experience. Mr. Lopach spent 27 years of his career with Galusha, Higgens, Galusha & Co., the largest privately held accounting firm in Montana and northern Idaho, where he served as president and CEO. In 1999, Mr. Lopach founded Lopach & Carparelli PC, an accounting firm that focuses on medical practitioners. Mr. Lopach received his MBA from the University of Notre Dame. Mr. Lopach will serve as chairman of the Board's Audit Committee.

Jon Wickwire, Director, is an attorney and founding shareholder of Wickwire Gavin, P.C., a national construction law firm which merged with Akerman Senterfitt, one of the top 100 law firms in the United States. Mr. Wickwire served as lead counsel on major infrastructure litigation and alternative dispute resolutions, both domestically and internationally, throughout his 35 year career, and was the founding fellow of the American College of Construction Lawyers. Mr. Wickwire also served as the founding chairman of the College of Scheduling, an organization dedicated to advancing the techniques, practice and profession of project scheduling, and has authored several books and articles on construction and public contract law, including Construction Management: Law and Practice and The Construction Subcontracting Manual: Practice Guide with Forms. Mr. Wickwire is a graduate of the University of Maryland and Georgetown University Law Center. Mr. Wickwire has been a shareholder of the Company for approximately 5 years and has participated is several rounds of financing. Mr. Wickwire will serve as chairman of the Corporate Governance and Nominating Committees.

John P. Gandolfo, Chief Financial Officer, joined Bacterin as its interim Chief Financial Officer on a part-time basis, effective June 4, 2010, and filled this position full time commencing on July 6, 2010. Mr. Gandolfo has 25 years of experience as chief financial officer of rapidly growing private and publicly held companies with a primary focus in the life sciences, healthcare and medical device areas. Mr. Gandolfo has had direct responsibility over capital raising, including four public offerings, financial management, mergers and acquisition transactions and SEC reporting throughout his professional career. Prior to joining Bacterin, Mr. Gandolfo served as the Chief Financial Officer for Progenitor Cell Therapy LLC, a leading manufacturer of stem cell therapies. Prior to joining Progenitor, Mr. Gandolfo served as the Chief Financial Officer for Power Medical Interventions, Inc., a publicly held developer and manufacturer of computerized surgical stapling and cutter systems, from January 2007 to January 2009. Prior to joining PMI, Mr. Gandolfo was the Chief Financial Officer of Bioject Medical Technologies, Inc., a publicly held supplier of needle-free drug delivery systems to the pharmaceutical and biotechnology industries, from September 2001 to May 2006, and served on the Bioject's Board of Directors from September 2006 through May 2007. Prior to joining Bioject, Mr. Gandolfo was the Chief Financial Officer of Capital Access Network, Inc., a privately held specialty finance company, from 2000 through September 2001, and Xceed, Inc., a publicly held Internet consulting firm, from 1999 to 2000. From 1994 to 1999, Mr. Gandolfo was Chief Financial Officer and Chief Operating Officer of Impath, Inc., a publicly held, cancer-focused healthcare information company. From 1987 through 1994, he was Chief Financial Officer of Medical Resources, Inc., a publicly held manager of diagnostic imaging centers throughout the United States. A graduate of Rutgers University, Mr. Gandolfo is a certified public accountant (inactive status) who began his professional career at Price Waterhouse.

Jesus Hernandez, Vice President of Biologics, began his career as the Director of the Organ and Tissue Bank at University of California, Irvine Medical Center. He has over 20 years of organ and tissue banking experience, including having served as Chief Operating Officer and Chief Executive Officer for two national tissue banks. Mr. Hernandez served as the Chief Operating Officer of Bone Bank Allografts from November 1997 to April 2005. He has been an advisor for various committees including the United Network for Organ Sharing, Association of Organ Procurement Organizations, North American Transplant Coordinators Organization, American Association of Tissue Banks and served as a board member of the World Children's Transplant Fund. Mr. Hernandez graduated from the University of California, Irvine. Mr. Hernandez has served in his current position since April 2005.

Darrel Holmes, Vice President of Medical Devices, joined Bacterin in 2003 as Director of Operations. Mr. Holmes started his career as chemist and later Director of Operations for ICL Scientific. He later worked for Hycor Medical as the Director of Manufacturing, and then as Director of Operations at Stratagene Cloning Systems. Mr. Holmes moved to Montana and became the President of Big Spring Water in Bozeman. He holds several certificates including Environmental Inspector with the Environmental Assessment Association and is a Hazardous Materials Specialist. Mr. Holmes attended California State University at Long Beach and graduated with a Bachelor's Degree in Biology. He has over 25 years of Technical Operations experience in the medical device and diagnostics industries.

Scientific Advisory Board

Our Scientific Advisory Board assists us with issues relating to the clinical development and exploitation of our coating and biologic technologies. As our needs evolve, members with required areas of interest and expertise are added. The members of our Scientific Advisory Board are compensated with stock options and shares of common stock under our equity incentive plan.

Steven Scott MD, is currently the Chairman of our Scientific Advisory Board and a member of the American Academy of Orthopaedic Surgeons, the Musculoskeletal Tumor Society and the Pediatric Society Orthopaedic of North America. Dr. Scott maintains an active orthopaedic practice in Salt Lake City and has special expertise in the use of Ilizarov External Fixation, pediatric orthopaedics, bone graft technology, and orthopedic oncology. Dr. Scott has authored many scientific publications, has presented at numerous national conferences and has a patent pending. He received his BA from Linfield College summa cum laude and attended medical school at the University of Colorado. He completed his orthopaedic training at the University of Utah and the Mayo Clinic; he holds a clinical appointment within the Department of Orthopaedics at University of Utah and received an M.B.A. through the University of Utah.

Board Composition and Terms of Office

The composition of our board of directors, and any future audit committee, compensation committee, and nominations and governance committee, will be subject to the corporate governance provisions of our primary trading market, including rules relating to the independence of directors. All directors hold office until the next annual meeting of stockholders and the election and qualification of their successors. Officers are elected annually by the board of directors and serve at the discretion of the board.

Board Committees

Subsequent to the consummation of the Reverse Merger, we recently established an audit committee, compensation committee and nominations and governance committee, in compliance with established corporate governance requirements.

Audit Committee.

The purpose of the Audit Committee is to assist the oversight of our Board of Directors of the integrity of the financial statements of our company, our company’s compliance with legal and regulatory matters, the independent auditor’s qualifications and independence, and the performance of our company’s independent auditor and internal audit function. The primary responsibilities of the Audit Committee are set forth in its charter and include various matters with respect to the oversight of our company’s accounting and financial reporting process and audits of the financial statements of our company. The Audit Committee also selects the independent auditor to conduct the annual audit of the financial statements of our company; reviews the proposed scope of such audit; reviews accounting and financial controls of our company with the independent auditor and our financial accounting staff; and reviews and approves transactions between us and our directors, officers, and their affiliates.

The Audit Committee currently consists of Messrs. Lopach and Swanson, each an independent director of our company under Nasdaq listing standards as well as under rules adopted by the SEC pursuant to the Sarbanes-Oxley Act of 2002. Mr. Lopach serves as the Chairman of the Audit Committee. The Board of Directors has determined that Messrs. Lopach and Swanson (whose backgrounds are detailed above) each qualify as an “audit committee financial expert” in accordance with applicable rules and regulations of the SEC.

Compensation Committee.

Although the Company formed a compensation committee subsequent to the consummation of the Reverse Merger, due to the resignation of two of the directors who formerly served on the compensation committee, there is only one remaining member. The Company anticipates that it will re-establish the compensation committee at some point in the near future, but at the present time, the duties of the compensation committee are being carried out by our board of directors.

Nominations and Governance Committee.

The purposes of the Nominations and Governance Committee include the selection or recommendation to our Board of Directors of nominees to stand for election as directors at each election of directors, the oversight of the selection and composition of committees of our Board of Directors, the oversight of the evaluations of our Board of Directors and management, and the development and recommendation to our Board of Directors of a set of corporate governance principles applicable to our company. The Nominations and Governance Committee currently consists of Messrs. Wickwire and Swanson, each of whom is an independent director of our company under Nasdaq listing standards as well as under rules adopted by the SEC pursuant to Sarbanes-Oxley. Mr. Wickwire serves as the Chairman of the Nominations and Governance Committee.

Nominations to the Board of Directors

Our directors take a critical role in guiding our strategic direction and overseeing the management of our company. Board candidates are considered based upon various criteria, such as their broad-based business and professional skills and experiences, a global business and social perspective, concern for the long-term interests of the stockholders, diversity, and personal integrity and judgment.

In addition, directors must have time available to devote to board activities and to enhance their knowledge in the growing business. Accordingly, we seek to attract and retain highly qualified directors who have sufficient time to attend to their substantial duties and responsibilities.

Indebtedness of Directors and Executive Officers

We have a note receivable from Guy Cook, our Chairman, Chief Executive Officer and President, in the principal amount of $72,178, which bears interest at the prime rate of interest and is secured by certain shares of our common stock owned by Mr. Cook. This note relates to a transaction involving our wholly-owned subsidiary, Bacterin, prior to the Reverse Merger.

Family Relationships

There are no family relationships among our new directors and executive officers and any former or proposed directors or executive officers.

Legal Proceedings

As of the date of this prospectus, there are no material proceedings pending or threatened to which any of our directors, executive officers, affiliates or stockholders is or would be a party adverse to us.

EXECUTIVE COMPENSATION

The table below summarizes the compensation earned for services rendered to Bacterin International Holdings, Inc. f/ka/ K-Kitz, Inc. and Bacterin International, Inc. in all capacities, for the fiscal years indicated, by its Chief Executive Officer and two most highly-compensated officers other than the Chief Executive Officer.

| Name and Principal Position | Year | Salary | Bonus | Stock Awards | Option Awards | Non-Equity Incentive Plan Compensation | Change in Pension Value and Nonqualified Deferred Compensation Earnings | All Other Compensation | Total |
|---|---|---|---|---|---|---|---|---|---|
| Guy S. Cook(1) | 2009 | $ 230,750 | $ 40,000(2) | $ - | $ - | $ - | $ - | $ 34,897(2) | $ 305,647 |
| Chairman of the Board and Chief Executive Officer | 2008 | 249,210 | | - | - | - | - | 23,783 | 272,993 |
| Jesus Hernandez(1) | 2009 | 236,153 | - | - | - | - | - | 12,743 | 248,896 |
| EVP - Biologics | 2008 | 197,308 | 27,500 | | | | | 66,983 | 236,791 |
| Darrel Holmes(1) | 2009 | 100,000 | - | - | - | - | - | 15,744 | 115,744 |
| EVP - Medical Devices | 2008 | 57,115 | - | - | - | - | - | 9,040 | 66,155 |
| Jennifer Jarvis | 2009 | - | - | - | - | - | - | - | - |
| Former Director, Chief Executive Officer, President and Chief Financial Officer(3) | 2008 | 45,000 | - | - | - | - | - | - | 45,000 |

(1) Each of Mr. Cook, Mr. Hernandez and Mr. Holmes received this compensation in connection with their service to Bacterin, our wholly-owned subsidiary through which we now operate our business.

(2) Mr. Cook received 50,000 shares of Bacterin common stock (or 25,000 shares or our common stock as adjusted to reflect the ratio used to determine the number of our shares issued to Bacterin stockholders in connection with the Reverse Merger) and is entitled to $10,000, each as of December 31, 2009, for his service on Bacterin's board of directors for fiscal year 2009, though payment of the $10,000 has been deferred indefinitely. Although this consideration reflects Bacterin's past board compensation policy, it does not reflect our current board compensation policy, which is discussed below.

(3) Ms. Jarvis resigned from her position as a director and our Chief Executive Officer, President and Chief Financial Officer, effective June 30, 2010.

The aggregate amount of benefits in each of the years indicated did not exceed the lesser of $50,000 or 10% of the compensation of any named officer.

Employment Agreements

We intend to keep the current employment agreements between Bacterin, our wholly owned subsidiary through which we now conduct our business, and Guy Cook, John P. Gandolfo, Jesus Hernandez and Darrel Holmes. The employment agreements are set forth as exhibits to the registration statement, of which this prospectus is a part. The employment agreements require each of the executives to perform such duties as are customarily performed by one

holding their positions, which are President and Chief Executive Officer, Chief Financial Officer, Executive Vice President - Biologics Division and Executive Vice President - Medical Devices Division, respectively. The employment agreements for each of the above officers are for an indefinite term and provide that each of Messrs. Cook, Gandolfo, Hernandez and Holmes receive a fixed annual base salary during the term of the employment agreement. In addition, each executive is entitled to (a) receive certain cash bonuses as set forth in their respective employment agreements or as may be determined in the future by our compensation committee of our board of directors (or the entire board until such committee has been established) and (b) participate in our equity incentive plan.

The employment agreements are essentially terminable at will by reference to the termination procedures set forth in Bacterin's employee handbook but also provide for termination of an executive's employment without any further obligation of our company upon the disability of the executive for a period of 30 days or more during any calendar year.

The employment agreements also contain covenants (a) restricting the executive from engaging in any activity competitive with our business during the term of the employment agreement, (b) prohibiting the executive from disclosing confidential information regarding our company, and (c) requiring that all intellectual property developed by the executive and relating to our business constitutes our sole and exclusive property.

The officers also entered into lock-up agreements restricting the sale of their shares of our common stock until July 7, 2011.

Bacterin International Equity Incentive Plan

Prior to the consummation of the Reverse Merger, we adopted and ratified the Bacterin International Equity Incentive Plan. The following is a summary of the material terms of that plan.

The purpose of the incentive compensation plan is to enable us to attract, retain and motivate key employees, directors and, on occasion, independent consultants, by providing them with stock options and restricted stock grants. Stock options granted under the incentive compensation plan may be either incentive stock options to employees, as defined in Section 422A of the Internal Revenue Code of 1986, or non-qualified stock options. The plan is currently administered by our board of directors until we re-establish our compensation committee. The administrator of the plan has the power to determine the terms of any stock options granted under the incentive plan, including the exercise price, the number of shares subject to the stock option and conditions of exercise. Stock options granted under the incentive plan are generally not transferable, vest in installments and are exercisable during the lifetime of the optionee only by such optionee. The exercise price of all incentive stock options granted under the incentive plan must be at least equal to the fair market value of the shares of common stock on the date of the grant. The specific terms of each stock option grant will be reflected in a written stock option agreement.

Also, in connection with the Reverse Merger, we are substituting each equity award granted under the Bacterin International, Inc. 2004 Stock Incentive Plan, as most recently amended effective April 1, 2009, with a substantially similar equity award granted under our new plan; provided, that the number of shares which may be purchased under such substitute options and the exercise prices therefor reflect proportional adjustments required to be made to account for the ratio used in determining the number of shares issuable to Bacterin stockholders in connection with the Reverse Merger.

There are 6,000,000 shares of our common stock authorized to be issued under the plan, representing approximately 16.5% of our outstanding common stock or 12.5% on a fully-diluted basis. As of September 30, 2010, we had outstanding options to purchase 3,912,743 shares (at exercise prices ranging from $0.10 to $2.50 per share) granted, and 980,000 shares of restricted stock issued, to directors, executives, employees and consultants, leaving an additional 1,107,257 available for issuance thereunder. The vast majority of the outstanding options reflect substitute options to be granted to former holders of Bacterin options issued under its 2004 Stock Incentive Plan, as amended.

Except for the Equity Incentive Plan discussed above, we have not had a stock option plan or other similar incentive compensation plan for officers, directors and employees, and no stock options, restricted stock or stock appreciation rights grants were granted or were outstanding at any time prior to the Reverse Merger.

Outstanding Equity Awards at Fiscal Year-End (December 31, 2009)

| Name | Number of Securities Underlying Unexercised Options Exercisable | Number of Securities Underlying Unexercised Options Unexercisable | Option Awards Equity Incentive Plan Awards: Number of Securities Underlying Unexercised Unearned Options | Option Exercise Price | Option Expiration Date |
|---|---|---|---|---|---|
| Guy Cook | - | - | - | - | - |
| Jesus Hernandez | 500,000 | - | - | $ 1.34 | 10/10/16 |
| Jesus Hernandez | 58,000 | - | - | $ 1.60 | 5/19/15 |
| Darrrel Holmes | 45,000 | - | - | $ 0.10 | 10/9/13 |
| Darrrel Holmes | 30,000 | - | - | $ 1.34 | 10/9/16 |
| Darrrel Holmes(1) | 18,288 | - | 56,713 | $ 1.50 | 12/29/18 |

(1) 11,713 of Mr. Holmes' unvested options vest on December 29, 2010; 15,000 vest on December 29, 2011; 15,000 vest on December 29, 2012; and 15,000 vest on December 29, 2013.

Potential Payments Upon Termination or Change-in-Control

SEC regulations state that we must disclose information regarding agreements, plans or arrangements that provide for payments or benefits to our named executive officers in connection with any termination of employment or change in control of the company. Except for Mr. Gandolfo's employment agreement described below, we currently have no employment agreements with any of our named executive officers which have payments upon termination or change in control, nor any compensatory plans or arrangements that provide for any payments or benefits upon the resignation, retirement or any other termination of any of our named executive officers, as the result of a change in control, or from a change in any named executive officer's responsibilities following a change in control.

Pursuant to the terms of Mr. Gandolfo's employment agreement, if Mr. Gandolfo's employment with our company is terminated by us in connection with a "Change of "Control" (as defined therein), Mr. Gandolfo shall be eligible to receive 12 months' salary as severance, if he has delivered to us a complete release of any claims against us in form and substance reasonably satisfactory to us and if Mr. Gandolfo has not breached any section of his employment agreement. Mr. Gandolfo's current salary under the employment agreement is $290,000 per year. The severance payments payable to Mr. Gandolfo will be paid biweekly through automatic deposits; provided that the initial payment of any severance hereunder shall begin on the eighth day after Mr. Gandolfo has signed the aforementioned release. A "Change of Control" is defined in Mr. Gandolfo's employment agreement to consist of either Guy Cook no longer serving as the Chief Executive Officer or a sale of all or substantially all of the assets of the Company.

Director Compensation

| Name | Fees Earned or Paid in Cash(1) | Stock Awards(2) | Option Awards | Non-Equity Incentive Plan Compensation | Change in Pension Value and Nonqualified Deferred Compensation Earnings | All Other Compensation | Total |
|---|---|---|---|---|---|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Mitch Godfrey | $ 10,000 | $ 40,000 | - | - | - | - | $ 50,000 |
| Kent Swanson | $ 10,000 | $ 40,000 | - | - | - | - | $ 50,000 |
| Steve Warnecke(3) | $ 10,000 | $ 40,000 | - | - | - | - | $ 50,000 |

(1) Each of Bacterin's directors, regardless of management affiliation, earned $10,000 for their service on Bacterin's board of directors during 2009 although payment of such amount has been indefinitely deferred.

(2) Each of Bacterin's directors, regardless of management affiliation, received 50,000 shares of Bacterin common stock (or 25,000 shares of our common stock as adjusted to reflect the ratio used to determine the number of our shares issued to Bacterin stockholders in connection with the Reverse Merger) as of December 31, 2009, for their service on Bacterin's board of directors during 2009.

(3) Mr. Warnecke resigned as a director effective May 22, 2010.

We are currently re-evaluating our director compensation policies and intend to adopt new ones shortly. We expect that such new policies may, among other things, entitle each non-management director to receive participation fees for attendance at regular and special meetings of our board of directors and stock options granted under our Bacterin International Equity Incentive Plan, to purchase shares of our common stock with an exercise price equal to the fair market value of such stock on the date of grant. Our board of directors will review director compensation annually and adjust it according to prevailing market conditions and good business practices. Notwithstanding the foregoing, we are considering a proposal that would, if adopted, grant 100,000 shares of restricted common stock to each member of the Board of Directors upon their joining the Board of Directors. Under this proposal, all of the shares of restricted stock held by a director would be forfeited if the director is not still serving as a member of our Board of Directors on the first anniversary of the date he or she joined, 50,000 shares of restricted stock would be forfeited if the director is not still serving as a member of our Board of Directors on the second anniversary of the date he or she joined, and 25,000 shares of restricted stock would be forfeited if the director is not still serving as a member of our Board of Directors on the third anniversary of the date he or she joined.

Compensation Committee Interlocks and Insider Participation

No interlocking relationship exists between our board of directors and the board of directors or compensation committee of any other company, nor has any interlocking relationship existed in the past.

Director Independence

During the year ended December 31, 2009, Kent Swanson was the only independent director on our board. We evaluate independence by the standards for director independence established by applicable laws, rules, and listing standards including, without limitation, the standards for independent directors established by the Nasdaq stock market.

Subject to some exceptions, these standards generally provide that a director will not be independent if:

- the director is, or in the past three years has been, an employee of ours;
- a member of the director's immediate family is, or in the past three years has been, an executive officer of ours;
- the director or a member of the director's immediate family has received more than $120,000 per year in direct compensation from us other than for service as a director (or for a family member, as a non-executive employee);
- the director or a member of the director's immediate family is, or in the past three years has been, employed in a professional capacity by our independent public accountants, or has worked for such firm in any capacity on our audit;
- the director or a member of the director's immediate family is, or in the past three years has been, employed as an executive officer of a company where one of our executive officers serves on the compensation committee; or
-

the director or a member of the director's immediate family is an executive officer of a company that makes payments to, or receives payments from, us in an amount which, in any twelve-month period during the past three years, exceeds the greater of $1,000,000 or two percent of that other company's consolidated gross revenues.

Indemnification of Directors and Officers

Our certificate of incorporation provides that no director of the company will be personally liable to the company or our stockholders for monetary damages for breach of fiduciary duty as a director, except for liability (i) for any breach of the director's duty of loyalty to the company or our stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) for the improper declaration of dividends or redemption of shares of capital stock in violation of Delaware law, or (iv) for any transaction from which the director derived an improper personal benefit.

We have entered into indemnification agreements with each of our executive officers and directors in which we have agreed to indemnify such officers and directors against expenses and liabilities in connection with any proceeding associated with such person's service as an officer or director of the Company to the fullest extent permitted by applicable law.

Further, Section 145 of the Delaware General Corporation Law, or DGCL, permits, in general, a Delaware corporation to indemnify any person who was or is a party to any proceeding (other than an action by, or in the right of, the corporation) by reason of the fact that he or she is or was a director or officer of the corporation, or served another entity in any capacity at the request of the corporation, against liability incurred in connection with such proceeding, including the estimated expenses of litigating the proceeding to conclusion and the expenses actually and reasonably incurred in connection with the defense or settlement of such proceeding, including any appeal thereof, if such person acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, the best interests of the corporation and, in criminal actions or proceedings, additionally had no reasonable cause to believe that his or her conduct was unlawful. Section 145(e) of the DGCL permits the corporation to pay such costs or expenses in advance of a final disposition of such action or proceeding upon receipt of an undertaking by or on behalf of the director or officer to repay such amount if he or she is ultimately found not to be entitled to indemnification under the DGCL. Section 145(f) of the DGCL provides that the indemnification and advancement of expense provisions contained in the DGCL shall not be deemed exclusive of any rights to which a director or officer seeking indemnification or advancement of expenses may be entitled.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted for directors, officers, or controlling persons pursuant to the foregoing provisions, we have been informed that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth information regarding the beneficial ownership of our common stock as of September 28, 2010, by,

(a) each of our directors and executive officers,

(b) all of our directors and executive officers as a group, and

(c) each person who is known by us to beneficially own 5% or more of our common stock.

| Name (1) | Number of Shares Beneficially Owned (2) | Percentage of Shares Beneficially Owned (3) |
|---|---|---|
| Executive Officers and Directors: | | |
| Guy S. Cook | 13,353,469(4) | 36.54% |
| Mitchell Godfrey | 825,133(5) | 2.26% |
| Kent Swanson | 516,066(6) | 1.42% |
| Michael Lopach | 100,000(7) | * |
| Jon Wickwire | 671,241(8) | 1.82% |
| John P. Gandolfo | - | - |
| Jesus Hernandez | 558,000(9) | 1.51% |
| Darrel Holmes | 103,421(10) | * |
| All executive officers and directors as a group (9 persons) | 16,003,304 | 42.67% |

* Less than 1% of outstanding shares of common stock.

(1) The address of each person is c/o Bacterin International, Inc., 600 Cruiser Lane, Belgrade Montana 59714.

(2) Unless otherwise indicated, includes shares owned by a spouse, minor children and relatives sharing the same home, as well as entities owned or controlled by the named person. Also includes shares if the named person has the right to acquire those shares within 60 days after September 28, 2010, by the exercise or conversion of any warrant, stock option or convertible preferred stock. Unless otherwise noted, shares are owned of record and beneficially by the named person.

(3) The calculation in this column is based upon 36,841,386 shares of common stock outstanding on September 28, 2010. The shares of common stock underlying warrants and stock options are deemed outstanding for purposes of computing the percentage of the person holding them, but are not deemed outstanding for the purpose of computing the percentage of any other person.

(4) Includes (a) 20,000 shares of our common stock issuable to Sue Cook, Mr. Cook’s spouse and our head of human resources, upon the exercise of stock options previously granted by Bacterin under its 2004 Stock Incentive Plan, (b) 484,375 shares of common stock acquired in the private placement that occurred concurrently with the Reverse Merger, and (c) warrants to purchase 121,094 shares of our common stock which were also acquired in such private placement.

(5) Includes 150,000 shares of our common stock issuable to Mr. Godfrey upon the exercise of stock options previously granted by Bacterin under its 2004 Stock Incentive Plan.

(6) Includes (a) 100,000 shares of restricted stock to which Mr. Swanson is entitled in connection with his agreement to continue to serve on the Board of Directors and (b) 69,843 shares of our common stock issuable to Mr. Swanson upon the exercise of warrants previously issued to Mr. Swanson in connection with his conversion of certain debt.

(7) Includes a proposed grant of restricted stock to new board members which has not yet been formally adopted (if adopted, this grant would likely be subject to vesting as described in Executive Compensation -- Director Compensation).

(8) Includes (a) a proposed grant of restricted stock to new board members which has not yet been formally adopted (if adopted, this grant would likely be subject to vesting as described in Executive Compensation -- Director Compensation), (b) 100,399 shares of common stock held by family trusts and family members, and (c) warrants to purchase 45,000 shares of common stock held by family trusts.

(9) Represents shares of our common stock issuable to Mr. Hernandez upon the exercise of stock options previously granted by Bacterin under its 2004 Stock Incentive Plan.

(10) Includes 93,288 shares of our common stock issuable to Mr. Holmes upon the exercise of stock options previously granted by Bacterin under its 2004 Stock Incentive Plan.

## TRANSACTIONS WITH RELATED PERSONS, PROMOTERS AND CERTAIN CONTROL PERSONS

Guy Cook, our President and Chief Executive Officer, serves as a board member of West Coast Tissue Services and American Donor Services. Both of these entities recover tissue from donors. We reimburse them for their recovery fees, which are comprised primarily of labor costs. The aggregate amount of all payments we and our subsidiaries made to these entities since January 1, 2008 is $575,297 to West Coast Tissue Services, and $1,654,352 to American Donor Services. This relationship benefits us, and thus Mr. Cook, as these entities provide us with donors, thus insuring that we have a pipeline of current and future donors, which is necessary to our success. Mr. Cook's wife performs the bookkeeping and accounting for American Donor Services. She was paid $60,126 in 2009 for her services, but received no compensation in 2006-2008 or 2010 for her services.

Concurrently with the closing of the Reverse Merger and the private placement, we repurchased and cancelled, 4,319,404 shares of our common stock from Jennifer Jarvis, our former director, chief executive officer and chief financial officer, for aggregate consideration of $100 and certain other good and valuable consideration.

Convertible Capital, a firm where one of our former directors, Ken Calligar, is a principal, arranged for Mr. Calligar's two daughters and two other individuals to purchase approximately $225,000 of bridge financing indebtedness which did not convert in our recently concluded private placement. The debt was purchased from five holders of such debt based on the understanding that the purchasers would thereafter be permitted to convert such indebtedness on the same terms as if they had converted the debt in such private placement transaction. Convertible Capital is entitled to all of the warrants associated with the conversions by the purchasers.

Unless delegated to the Compensation Committee by the Board of Directors, the Audit Committee reviews and approves all related party transactions and reviews and makes recommendations to the full Board of Directors, or approves, any contracts or other transactions with current or former executive officers of our company, including consulting arrangements, employment agreements, change-in-control agreements, termination arrangements, and loans to employees made or guaranteed by our company.

SELLING STOCKHOLDERS

The following table sets forth:

(a) the name of each of the selling stockholders,

(b) the number of shares of common stock beneficially owned by each such selling stockholder that may be offered for the account of such selling stockholder under this prospectus, and

(c) the number of shares of common stock beneficially owned by each such selling stockholder upon completion of this offering.

Such information was obtained from the selling stockholders but has not been independently verified by us. The term "selling stockholder" includes the entities listed below and their respective transferees, pledgees, donees, or other successors.

| | Shares Beneficially Owned Prior to Offering (2) | | Shares Being Registered | Shares Beneficially Owned After Offering (2)(3) | |
|---|---|---|---|---|---|
| Name of Selling Stockholder (1) | Number | Percent | for Sale (3) | Number | Percent |
| Alan B. Miller(4) | 72,918 | * | 72,918 | - | - |
| Alan R. Davidson TTEE of the Alan R. Davidson Revocable Trust DTD 8/14/2007(5) | 821,605 | 2.10% | 821,605 | - | - |
| Barry J. Goldstein(6) | 19,531 | * | 19,531 | - | - |
| Beneficial Capital Corp(7) | 69,444 | * | 69,444 | - | - |
| Benjamin M. Frank TR Benjamin M Frank Revocable Living Trust DTD 2/02/1986(8) | 7,813 | * | 7,813 | - | - |
| Benjamin M. Frank Revocable Living Trust DTD 2/7/1986(9) | 19,531 | * | 19,531 | - | - |
| Brian Abdoo(10) | 6,944 | * | 6,944 | - | - |
| Calvin Leroy Schenk & Frances Eileen Schenk JT WROS(11) | 50,781 | * | 50,781 | - | - |
| Carlisle Capital, LLC(12) | 39,063 | * | 39,063 | - | - |
| Convertible Capital(13) | 39,063 | * | 39,063 | - | - |
| Cougar Valley LLC(14) | 365,589 | 1.00% | 365,589 | - | - |
| Curtis F. Brockelman, Jr.(15) | 36,460 | * | 36,460 | - | - |
| Daniel Foley(16) | 191,227 | * | 191,227 | - | - |
| Daniel R. Frank(17) | 117,188 | * | 117,188 | - | - |
| David A. Fiore(18) | 6,944 | * | 6,944 | - | - |
| David H. Clarke(19) | 74,164 | * | 74,164 | - | - |
| David Sabath(20) | 36,460 | * | 36,460 | - | - |
| David Stefansky(21) | 294,299 | * | 45,149 | 249,150 | * |
| David Telesco(22) | 72,918 | * | 72,918 | - | - |
| David W. Raisbeck(23) | 55,556 | * | 55,556 | - | - |
| Douglas Gauld(24) | 54,688 | * | 54,688 | - | - |
| Equity Trust Company d/b/a Sterling Trust Custodian, FBO | 97,176 | * | 97,176 | - | - |

| | | | | | |
|---|---|---|---|---|---|
| Leonid Frenkel IRA(25) | | | | | |
| Gary L. Nolt(26) | 19,531 | * | 19,531 | - | - |
| Genesis Asset Opportunity Fund LP(27) | 138,889 | * | 138,889 | - | - |
| Greg A. Baker and Louise D. Baker JT WROS(28) | 72,918 | * | 72,918 | - | - |
| Guy S. Cook(29) | 13,348,467 | 36.54% | 605,469 | 12,742,998 | 35.02% |
| Harborview Master Fund LP(30) | 260,542 | * | 241,842 | 18,700 | * |
| Harborview Value Master Fund LP(31) | 817,345 | 2.25% | 595,000 | 222,345 | * |
| Harry Mittelman & Brenda Mittelman JT WROS(32) | 78,125 | * | 78,125 | - | - |

| | | | | | |
|---|---|---|---|---|---|
| Harry Mittelman Revocable Living Trust(33) | 118,059 | * | 118,059 | - | - |
| Herbert A. Hardt(34) | 39,063 | * | 39,063 | - | - |
| Howard Rubin(35) | 100,000 | * | 100,000 | - | - |
| Ian J. Cassel(36) | 489,000 | 1.28% | 489,000 | - | - |
| Jeffrey L. Krushinski(37) | 19,531 | * | 19,531 | - | - |
| John Michael Andrews(38) | 118,059 | * | 118,059 | - | - |
| John P. Davy(39) | 62,500 | * | 62,500 | - | - |
| Judy E. Grossman(40) | 39,063 | * | 39,063 | - | - |
| Julie R. Frank Revocable Trust DTD 8/13/2001(41) | 31,250 | * | 31,250 | - | - |
| Kenneth S. Miller(42) | 6,944 | * | 6,944 | - | - |
| Leon Frenkel(43) | 429,688 | 1.18% | 429,688 | - | - |
| Lionel N. Sterling Revocable Trust DTD 5/19/1997(44) | 101,563 | * | 101,563 | - | - |
| Lisa M. Gallo Trust(45) | 43,404 | * | 43,404 | - | - |
| Mack Rossoff(46) | 34,722 | * | 34,722 | - | - |
| Martin W. Korman(47) | 118,059 | * | 118,059 | - | - |
| Matthew J. Cacciato(48) | 36,460 | * | 36,460 | - | - |
| Maurice Werdegar(49) | 177,089 | * | 177,089 | - | - |
| Merrill Lynch FBO: Jon M Wickwire IRA(50) | 137,526 | * | 78,125 | 59,401 | * |
| Michael H. Weiss(51) | 140,626 | * | 140,626 | - | - |
| Michael P. Kimball(52) | 39,063 | * | 39,063 | - | - |
| Michel C Finzi or Melissa A. Finzi JT WROS(53) | 58,113 | * | 58,113 | - | - |
| Middlebury Securities, LLC(54) | 796,217 | 2.19% | 796,217 | - | - |
| MKM Opportunity Master Fund, Ltd.(55) | 295,147 | * | 295,147 | - | - |
| Monarch Capital Fund Ltd(56) | 13,889 | * | 13,889 | - | - |
| Morris Smith and Devora Smith JT WROS(57) | 187,502 | * | 187,502 | - | - |
| NFS FBO John A. Swallow Roth IRA(58) | 150,000 | * | 150,000 | - | - |
| Paragon Capital LP(59) | 816,314 | 1.61% | 816,314 | - | - |
| Periscope Partners L.P.(60) | 137,154 | * | 137,154 | - | - |
| Raymond Minella(61) | 86,806 | * | 86,806 | - | - |
| RCII Ltd.(62) | 235,125 | * | 235,125 | - | - |
| Richard M. O'Leary(63) | 31,250 | * | 31,250 | - | - |
| Rita Blitt(64) | 72,918 | * | 72,918 | - | - |
| Sarah W. Palmer(65) | 75,000 | * | 75,000 | - | - |
| Sixty-Five Roses Ranch(66) | 130,000 | * | 30,000 | 100,000 | * |
| Spencer M. Calligar(67) | 17,361 | * | 17,361 | - | - |
| Standard Pacific Capital Holdings, LLLP(68) | 562,500 | 1.55% | 562,500 | - | - |
| Star Acquisition LLC(69) | 78,125 | * | 78,125 | - | - |
| Stifel Nicolaus & Co. Custodian for Richard R. Palmer Roth IRA(70) | 69,376 | * | 69,376 | - | - |
| Stifel Nicolaus & Co. Custodian for Sarah W. Palmer Beneficiary IRA(71) | 75,000 | * | 75,000 | - | - |
| Stuart G. Gauld IRA Rollover JPMCC Cust.(72) | 41,063 | * | 39,063 | 2,000 | * |
| Suzanne Veilleux(73) | 40,063 | * | 39,063 | 1,000 | * |
| Swallow Family LLC(74) | 134,364 | * | 134,364 | - | - |
| T.M. Lane(75) | 41,667 | * | 41,667 | - | - |
| Taylor B. Calligar(76) | 17,361 | * | 17,361 | - | - |
| The Corbran LLC(77) | 294,299 | * | 45,149 | 249,150 | * |
| Thomas F. Plaut(78) | 36,460 | * | 36,460 | - | - |
| Tom Colicchio(79) | 72,918 | * | 72,918 | - | - |

| | | | | | |
|---|---|---|---|---|---|
| Triage Capital Management, L.P.(80) | 78,125 | * | 78,125 | - | - |

| | | | | | |
|---|---|---|---|---|---|
| UVE Partners LLC(81) | 195,313 | * | 195,313 | - | - |
| Warberg Opportunistic Trading Fund LP(82) | 19,531 | * | 19,531 | - | - |
| Western Technology Investment(83) | 375,000 | * | 375,000 | - | - |
| William H. White Jr. Family Trust U/A DTD 8/1/94(84) | 75,001 | * | 75,001 | - | - |
| William Silver(85) | 19,531 | * | 19,531 | - | - |

* Less than 1% of the outstanding shares of common stock

(1) Except as otherwise indicated, each selling stockholder named in the table has sole voting and investment power with respect to all common stock beneficially owned by such stockholder.

(2) The numbers and percentages shown include (a) the number of shares of common stock actually owned as of September 28, 2010, and (b) the shares of common stock that the identified person had the right to acquire within 60 days of September 28, 2010. In calculating the percentage of ownership, all shares of common stock which the identified person has the right to acquire within 60 days of September 28, 2010 are deemed to be outstanding for the purpose of computing the percentage of shares of common stock owned by such person, but are not deemed to be outstanding for the purpose of computing the percentage of shares of common stock owned by any other person.

(3) We have no assurance that the selling stockholders will sell any of the common stock being registered for sale. For purposes of this table, we have assumed that the selling stockholders will have sold all of the shares covered by this prospectus upon completion of the offering, including such shares issuable upon the exercise of warrants.

(4) Includes 37,143 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 15303 Pembroke Pt., Naples, FL 34110.

(5) Includes 246,958 shares of common stock issuable upon the exercise of warrants. Alan R. Davidson is trustee of this selling stockholder and as such, has voting and dispositive power over the shares of common stock held by this selling stockholder. The address of this selling stockholder is 36 Candlewyck Dr., Henderson, NV 89052.

(6) Includes 3,906 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 1014 East Hyman Ave., Aspen, CO 81611.

(7) Includes 69,444 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is P.O. Box 40A, Villanova, PA.

(8) Includes 1,563 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 106 Breckenwood Way, Sacramento, CA 95864.

(9) Includes 3,906 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 106 Breckenwood Way, Sacramento, CA 95864.

(10) Includes 6,944 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 308 West Ridgewood Ave. Ridgewood, NJ 07450.

(11) Includes 10,156 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is PO Box 782, Thayne, WY 83127.

(12) Includes 7,813 shares of common stock issuable upon the exercise of warrants. Walter S. Grossman is the general partner of this selling stockholder and as such, has voting and dispositive power over the shares of common stock

held by this selling stockholder. The address of this selling stockholder is Carlisle Capital, c/o Brookehill Capital, 276 Post Road, West Port, CT 06880, ATTN: Walt Grossman.

(13) Includes 39,063 shares issuable upon the exercise of warrants. Ken Calligar, a former director, is a principal of this selling stockholder and as such, has voting and dispositive power over the shares of common stock held by this selling stockholder. The address of this selling stockholder is c/o Bacterin International Holdings, Inc. 600 Cruiser Lane, Belgrade, MT 59714.

(14) Includes 109,172 shares of common stock issuable upon the exercise of warrants. John A. Swallow is the manager of this selling stockholder and as such, has voting and dispositive power over the shares of common stock held by this selling stockholder. The address of this selling stockholder is 905 S. Jarvis Rd., Coeur d'Alene, ID 83814.

(15) Includes 18,572 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 530 Lake Avenue Greenwich, CT 06830.

(16) Includes 60,081 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 27 North Bayard Lane Mahwah, NJ 07430.

(17) Daniel Frank is a former director of the Company. Includes 23,438 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 19 Whaling Road, Darien, CT 06820.

(18) Includes 6,944 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 868 Southampton Dr. Palo Alto, CA 94303.

(19) Includes 29,216 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is P.O. Box 1090 Loxahatchee, FL 33470.

(20) Includes 18,572 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 224 Sunset Ave Ridgewood, NJ 07450.

(21) David Stefansky is affiliated with Harborview Advisors LLC, an entity that provided consulting services in connection with our Reverse Merger. The address of this selling stockholder is 850 Third Avenue, Suite 1801 New York, NY 10022.

(22) Includes 37,143 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 241 Mountain Ave Ridgewood, NJ 07450.

(23) Includes 55,556 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 26640 Edgewood Shorewood, MN 55331.

(24) Includes 10,938 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 32 Mora Ct. Manhasset, NY 11030.

(25) Includes 30,706 shares of common stock issuable upon the exercise of warrants. Leon Frenkel is trustee of this selling stockholder and as such, has voting and dispositive power over the shares of common stock held by this selling stockholder. The address of this selling stockholder is 1600 Flat Rock Rd. Penn Valley, PA 19072.

(26) Includes 3,906 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 208 W. Newport Road, Lititz, PA 17543.

(27) Includes 138,889 shares of common stock issuable upon the exercise of warrants. Genesis Capital GP LLC is the general partner of this selling stockholder. Ethan Benovitz, Jaime Hardman, and Daniel Saks, as managers of the

general partner, share voting and dispositive power over the shares of common stock held by this selling stockholder. The address of this selling stockholder is 61 Paine Ave New Rochelle, NY 10804.

(28) Includes 37,143 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 23615 Oak Valley Rd. Cupertino, CA 95014.

(29) Guy Cook is our Chief Executive Officer, President, Chief Scientific Officer and Chairman of our board of Directors. Includes 121,094 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 246 Painted Hills Road, Bozeman, MT 59715.

(30) Harborview Master Fund LP is affiliated with Harborview Advisors LLC, an entity that provided consulting services in connection with our Reverse Merger. Includes 131,895 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 850 Third Avenue, Suite 1801 New York, NY 10022.

(31) Harborview Value Master Fund LP is affiliated with Harborview Advisors, LLC, an entity that provided consulting services in connection with our Reverse Merger. Includes 131,895 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 850 Third Avenue, Suite 1801 New York, NY 10022.

(32) Includes 15,625 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 12100 Kate Drive Los Altos Hills, CA 94022.

(33) Includes 46,508 shares of common stock issuable upon the exercise of warrants. Harry Mittelman is trustee of this selling stockholder and as such, has voting and dispositive power over the shares of common stock held by this selling stockholder. The address of this selling stockholder is 12100 Kate Drive Los Altos Hills, CA 94022.

(34) Includes 7,813 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 5 Bluewater Hill, Westport, CT 06880.

(35) Includes 20,000 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 1270 Broadway, Suite 909, New York, NY 10001.

(36) Includes 163,659 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 952 Disston View Drive, Lititz, PA 17543.

(37) Includes 3,906 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 120 Saybrooke Drive, Lititz, PA 17543.

(38) Includes 46,508 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 552 Upper Ridgewood, NJ 07450.

(39) Includes 12,500 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 14008 175th Place NE, Redmond, WA 98052.

(40) Includes 7,813 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 277 North Avenue, Westport, CT 06880.

(41) Includes 6,250 shares of common stock issuable upon the exercise of warrants. Julie Rae Frank is trustee of this selling stockholder and as such, has voting and dispositive power over the shares of common stock held by this selling stockholder. The address of this selling stockholder is 11529 Conway Road, St. Louis, MO 63131.

(42) Includes 6,944 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 7196 Havenwood Dr. Castle Rock, CO 80108.

(43) Includes 85,938 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 1600 Flat Rock Road, Penn Valley, PA 19072.

(44) Includes 20,313 shares of common stock issuable upon the exercise of warrants. Lionel N. Sterling is trustee of this selling stockholder and as such, has voting and dispositive power over the shares of common stock held by this selling stockholder. The address of this selling stockholder is c/o Equity Resources Inc., 5 Greenwich Office Park, Greenwich, CT 06831.

(45) Includes 25,516 shares of common stock issuable upon the exercise of warrants. Lisa M. Gallo is trustee of this selling stockholder and as such, has voting and dispositive power over the shares of common stock held by this

selling stockholder. The address of this selling stockholder is 265 West End Ave. Ridgewood, NJ 07450.

(46) The address of this selling stockholder is c/o Bacterin International Holdings, Inc., 600 Cruiser Lane, Belgrade, MT 59714.

(47) Includes 46,508 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 650 Page Mill Road Palo Alto, CA 94304.

(48) Includes 18,572 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 3691 Gale Rd. Granville, OH 43023.

(49) Includes 69,763 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 35 Corto Ln. Woodside, CA 94062.

(50) Includes 15,625 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 917 Leigh Mill, Great Falls, VA 22066.

(51) Includes 23,438 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 25 Briarwood Lane Lawrence, NY 11559.

(52) Includes 7,813 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 3272 Lower Ridge Road, San Diego, CA 92130.

(53) Includes 22,893 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 2540 Redding Rd. Fairfield, CT 06824.

(54) Middlebury Securities, LLC served as placement agent in the private placement transactions described in this prospectus. The number of shares being registered for sale includes 690,000 shares of common stock issuable upon the exercise of warrants received as compensation for placement agent services. The address of this selling stockholder is 1043 Sheep Farm Road, Weybridge, VT 05753.

(55) Includes 116,270 shares of common stock issuable upon the exercise of warrants. MKM Capital Advisors, LLC is the controlling entity of this selling stockholder and is controlled by David Skrilloff, who exercises voting and dispositive power over the shares of common stock held by this selling stockholder. The address of this selling stockholder is c/o MKM Capital Advisors 1515 Broadway, 11th Floor New York, NY 10036.

(56) Includes 13,889 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 2nd Fl., Harbour House, Waterfront Drive, P.O. Box 972, Road Town, Tortola, British Virgin Islands VG1110.

(57) Includes 31,251 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 195 Wildacre Ave. Lawrence, NY 11559.

(58) Includes 30,000 shares of common stock issuable upon the exercise of warrants. John A. Swallow has voting and dispositive power over the shares of common stock held by this selling stockholder. The address of this selling stockholder is 905 S. Jarvis Rd. Coeur d'Alene, ID 83814.

(59) Includes 230,698 shares of common stock issuable upon the exercise of warrants. Paragon Capital Advisors LLC is the general partner of this selling stockholder. Alan P. Donefeld is the manager of Paragon Capital Advisors LLC and as such, has voting and dispositive power over shares of common stock held by this selling stockholder. The address of this selling stockholder is 110 East 59th Street, 29th Floor, New York, NY 10022.

(60) Includes 38,879 shares of common stock issuable upon the exercise of warrants. Leon Frenkel, as general partner of this selling stockholder, has voting and dispositive power over shares of common stock held by this selling stockholder. The address of this selling stockholder is 1600 Flat Rock Road, Penn Valley, PA 19072.

(61) The address of this selling stockholder is c/o Bacterin International Holdings, Inc., 600 Cruiser Lane, Belgrade, MT 59714.

(62) Includes 92,625 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 1 Hastings Road, St Helier, Jersey JE14HE, United Kingdom.

(63) Includes 6,250 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 2819 4th St, Boulder, CO 80304.

(64) Includes 37,143 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 11111 W 95 Overland Park, KS 66214.

(65) Includes 12,500 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is c/o Bacterin International Holdings, Inc., 600 Cruiser Lane, Belgrade, MT 59714.

(66) Sixty Five Roses Ranch used to provide accounting and financial services to the Company and is controlled by our former Chief Financial Officer. The address of the selling stockholder is 1026 Anaconda Drive. Castle Rock, CO 80108

(67) The address of this selling stockholder is 12 Valley Road, Locust Valley, NY 11560.

(68) Includes 112,500 shares of common stock issuable upon the exercise of warrants. Andrew R. Midler is the general partner of this selling stockholder and as such, has voting and dispositive power over the shares of common stock held by this selling stockholder. The address of this selling stockholder is 6501 Redhook Plaza, Suite 201, St. Thomas, U.S. Virgin Islands 00802.

(69) Includes 15,625 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 18 White Drive Cedarhurst, NY 11516.

(70) Includes 11,563 shares of common stock issuable upon the exercise of warrants. Richard R. Palmer has voting and dispositive power over the shares of common stock held by this selling stockholder. The address of this selling stockholder is 125 Fox Hollow Rd. Pinehurst, NC 28374.

(71) Includes 12,500 shares of common stock issuable upon the exercise of warrants. Sarah W. Palmer has voting and dispositive power over the shares of common stock held by this selling stockholder. The address of this selling stockholder is 1125 East Mass. Ave. Southern Pines, NC 28387.

(72) Includes 7,813 shares of common stock issuable upon the exercise of warrants. Stuart G. Gauld has voting and dispositive power over the shares of common stock held by this selling stockholder. The address of this selling stockholder is c/o Bacterin International Holdings, Inc., 600 Cruiser Lane, Belgrade, MT 59714.

(73) Includes 7,813 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 5 Basswood Court Bluffton, SC 29910-4455.

(74) Includes 45,967 shares of common stock issuable upon the exercise of warrants. John A. Swallow is the manager of this selling stockholder and as such, has voting and dispositive power over the shares of common stock held by this selling stockholder. The address of this selling stockholder is 905 S. Jarvis Rd. Coeur d'Alene, ID 83814.

(75) Includes 41,667 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 322 Harbour Dr., #204-D Naples, FL 34103.

(76) The address of this selling stockholder is 12 Valley Road, Locust Valley NY 11560.

(77) The Corbran LLC is affiliated with Harborview Advisors, LLC, an entity that provided consulting services in connection with our Reverse merger. The address of this selling stockholder is 850 Third Avenue, Suite 1801 New York, NY 10022.

(78) Includes 18,572 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 23 Elden Drive Saddle River, NJ 07458.

(79) Includes 37,143 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 95 Horatio Street New York, NY 10014.

(80) Includes 15,625 shares of common stock issuable upon the exercise of warrants. Triage Management L.P. is the general partner of this selling stockholder. Triage Capital LF Group, LLC is the general partner of Triage Management L.P. and is controlled by Leon Frenkel, who has voting and dispositive power over shares of common stock held by this selling stockholder. The address of this selling stockholder is 401 City Avenue, Suite 528, Bala Cynwyd, PA 19004.

(81) Includes 39,063 shares of common stock issuable upon the exercise of warrants. Gary M. Simon, as the managing member of this selling stockholder, has voting and dispositive power over the shares of common stock held by this selling stockholder. The address of this selling stockholder is 1120 Avenue of the Americas, Suite 4015, NY, NY 10036.

(82) Includes 3,906 shares of common stock issuable upon the exercise of warrants. Warberg Asset Management LLC is the general partner of this selling stockholder. Daniel Warsh and Jonathan Blumberg, as managers of the general partner, share voting and dispositive power over the shares of common stock held by this selling stockholder. The address of this selling stockholder is 716 Oak Street, Winnetka, IL 60093.

(83) The Company entered into a financing transaction with two subsidiaries of Western Technology Investment as described in the Recent Developments section of the prospectus summary. Includes 375,000 shares of common stock issuable upon the exercise of warrants. The address of the selling stockholder is 2010 North First St., Suite 310, San Jose, CA 95131.

(84) Includes 12,501 shares of common stock issuable upon the exercise of warrants. Faye M. White is trustee of this selling stockholder and as such, has voting and dispositive power over the shares of common stock held by this selling stockholder. The address of this selling stockholder is 1125 East Mass. Ave., Southern Pines, NC 28387.

(85) Includes 3,906 shares of common stock issuable upon the exercise of warrants. The address of this selling stockholder is 830 Park Ave., Apt. 4A, New York, NY 10021.

## DETERMINATION OF OFFERING PRICE

All shares of our common stock being offered will be sold by the selling stockholders without our involvement; consequently the actual price of the stock will be determined by prevailing market prices at the time of sale or by private transactions negotiated by the selling stockholders. The offering price will thus be determined by market factors and the independent decisions of the selling stockholders.

## PLAN OF DISTRIBUTION

We are registering the shares of common stock to permit the resale of these shares of common stock by the selling stockholders from time to time after the date of this prospectus. We will not receive any of the proceeds from the sale by the selling stockholders of the shares of common stock. We will bear all fees and expenses incident to our obligation to register the shares of common stock.

The selling stockholders may sell all or a portion of the shares of common stock beneficially owned by them and offered hereby from time to time directly or through one or more underwriters, broker-dealers, or agents. If the shares of common stock are sold through underwriters or broker-dealers, the selling stockholders will be responsible for underwriting discounts or commissions or agent's commissions. The shares of common stock may be sold in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices. These sales may be effected in transactions, which may involve crosses or block transactions, through

- any national securities exchange or quotation service on which the shares may be listed or quoted at the time of sale;
- in the over-the-counter market;
- in transactions otherwise than on these exchanges or systems or in the over-the-counter market;
- through the writing of options, whether such options are listed on an options exchange or otherwise;
- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales;
- sales pursuant to Rule 144;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and

- any other method permitted pursuant to applicable law.

If the selling stockholders effect such transactions by selling common stock to or through underwriters, broker-dealers, or agents, such underwriters, broker-dealers, or agents may receive commissions in the form of discounts, concessions, or commissions from the selling stockholders or commissions from purchasers of the shares of common stock for whom they may act as agent or to whom they may sell as principal (which discounts, concessions, or commissions as to particular underwriters, broker-dealers, or agents may be in excess of those customary in the types of transactions involved). In connection with sales of the shares of common stock or otherwise, the selling stockholders may enter into hedging transactions with broker-dealers, which may in turn engage in short sales of the shares of common stock in the course of hedging in positions they assume. The selling stockholders may also sell shares of common stock short and deliver shares of common stock covered by this prospectus to close out short positions and to return borrowed shares in connection with such short sales. The selling stockholders may also loan or pledge the shares of common stock to broker-dealers that in turn may sell such shares.

The selling stockholders may pledge or grant a security interest in some or all of the shares of common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of common stock from time to time pursuant to this prospectus or any amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act of 1933, as amended, amending, if necessary, the list of selling stockholders to include the pledgee, transferee, or other successors in interest as selling stockholders under this prospectus. The selling stockholders also may transfer and donate the shares of common stock in other circumstances in which case the transferees, donees, pledgees, or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

The selling stockholders and any broker-dealer participating in the distribution of the shares of common stock may be deemed to be "underwriters" within the meaning of the Securities Act, and any commission paid, or any discounts or concessions allowed to, any such broker-dealer may be deemed to be underwriting commissions or discounts under the Securities Act. At the time a particular offering of the shares of common stock is made, a prospectus supplement, if required, will be distributed which will set forth the aggregate amount of shares of common stock being offered and the terms of the offering, including the name or names of any broker-dealers or agents, any discounts, commissions, and other terms constituting compensation from the selling stockholders and any discounts, commissions, or concessions allowed or reallowed or paid to broker-dealers.

Under the securities laws of some states, the shares of common stock may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the shares of common stock may not be sold unless such shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with.

There can be no assurance that any selling stockholder will sell any or all of the shares of common stock registered pursuant to the registration statement, of which this prospectus forms a part.

The selling stockholders and any other person participating in such distribution will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including, without limitation, Regulation M of the Exchange Act, which may limit the timing of purchases and sales of any of the shares of common stock by the selling stockholders and any other participating person. Regulation M may also restrict the ability of any person engaged in the distribution of the shares of common stock to engage in market-making activities with respect to the shares of common stock. All of the foregoing may affect the marketability of the shares of common stock and the ability of any person or entity to engage in market-making activities with respect to the shares of common stock.

We will pay all expenses of the registration of the shares of common stock pursuant to the registration agreement, estimated to be $ in total, including, without limitation, Securities and Exchange Commission filing fees and expenses of compliance with state securities or "blue sky" laws; provided, however, that a selling stockholder will pay all underwriting discounts and selling commissions, if any. We will indemnify the selling stockholders against liabilities, including some liabilities under the Securities Act, in accordance with the registration agreement or the selling stockholders will be entitled to contribution. We may be indemnified by the selling stockholders against civil liabilities, including liabilities under the Securities Act, that may arise from any written information furnished to us by the selling stockholder specifically for use in this prospectus, in accordance with the registration agreement, or we may be entitled to contribution.

Once sold under the registration statement, of which this prospectus forms a part, the shares of common stock will be freely tradable in the hands of persons other than our affiliates.

# DESCRIPTION OF SECURITIES

## Common Stock

The holders of our common stock are entitled to one vote per share. Our certificate of incorporation does not provide for cumulative voting. The holders of our common stock are entitled to receive ratably such dividends, if any, as may be declared by our board of directors out of legally available funds. However, the current policy of our board of directors is to retain earnings, if any, for our operation and expansion. Upon our liquidation, dissolution or winding-up, the holders of our common stock are entitled to share ratably in all of our assets which are legally available for distribution, after payment of or provision for all liabilities and the preferences of any then outstanding shares of preferred stock. The holders of our common stock have no preemptive, subscription, redemption or conversion rights. All issued and outstanding shares of our common stock are, and the common stock reserved for issuance upon exercise of the warrants will be, when issued, fully-paid and non-assessable.

## Preferred Stock

Our certificate of incorporation authorizes the issuance of up to 5,000,000 shares of “blank check” preferred stock with designations, rights and preferences as may be determined from time to time by our board of directors. We have not designated or issued any shares of our preferred stock to date.

## Warrants

We issued warrants to purchase 1,509,271 shares of our common stock in our private placement with closings on each of June 30, 2010 and July 30, 2010, including warrants to purchase 361,875 shares of our common stock that were issued to the placement agents. Each warrant acquired in the private placement entitles the holder thereof to purchase shares of our common stock at an exercise price of $2.50 per share from the date of issuance until the fifth anniversary thereof; provided, that note holders who converted debt in the private placement, received warrants with an exercise price of $2.25 per share and the placement agents received warrants with an exercise price of $1.60 per share. We also issued additional warrants to purchase 70,103 shares of our common stock in connection with subsequent conversions of $400,000 in bridge financing indebtedness, also with exercise prices of $2.25 per share.

The note holders in the bridge financings also received warrants to purchase 1,482,256 shares of our common stock and our placement agent received warrants to purchase 328,125 shares of our common stock as part of our bridge financing.

We also issued warrants to purchase 375,000 shares of our common stock to Western Technology Investment in connection with a financing and warrants to purchase 489,710 shares to a limited group of existing investors who exercised existing shares.

In addition, subject to adjustment for the ratio used to determine the number of shares issuable to Bacterin stockholders in connection with the Reverse Merger, we have assumed Bacterin’s obligations under its outstanding warrants immediately prior to the Reverse Merger and are in the process of issuing substitute warrants. As a result of such assumption and issuance of substitute warrants, we also have warrants outstanding to purchase 3,441,732 shares of our common stock. The exercise prices of these warrants range from $2.00 to $2.50 and commence expiring in March 2014 through December 2019.

Transfer, Exchange and Exercise.

The warrants may be exercised upon surrender of the certificate therefor on or prior to the expiration date (as explained below) at our offices with the form of exercise notice attached as an exhibit thereto filled out and executed as indicated, accompanied by payment (in the form of certified or cashier's check payable to the order of our company) of the full exercise price for the number of warrants being exercised.

Adjustments.

All of our outstanding warrants contain provisions that protect the holders thereof against dilution by adjustment of the number of shares for which the warrants are exercisable as well as the exercise price to purchase such shares in certain events, such as stock dividends, stock splits, mergers and other similar events.

In addition, the warrants that were issued in connection with our recent bridge financings provide that, in the event that we issue any shares of our common stock (or securities convertible into or exercisable or exchangeable for shares of common stock) for an effective price of less than $1.60 per share of common stock, except (i) securities which are issued pursuant to the bridge financings, (ii) shares of our common stock or options to purchase such shares issued to employees, consultants, officers or directors in accordance with stock plans approved by the board of directors, and shares of common stock issuable under options or warrants that are outstanding as of the date of the closing of the bridge financings or issued in the future pursuant to the our equity incentive plan up to a total of 6,000,000 shares, and (iii) shares of our common stock issued pursuant to a stock dividend, split or other similar transaction, the exercise price of each warrant shall be adjusted downward on a "full-ratchet" basis, i.e., to the lowest price per share at which our stock was issued or deemed issued, regardless of how many shares were issued at such price. The holder of a Warrant will not possess any rights as a stockholder of our company unless and until he exercises the Warrant.

Cashless Exercise.

The warrants issued in connection with our recent bridge financings and the private placement contain "cashless" exercise provisions which are available under certain circumstances. In a "cashless" exercise, a warrant is exchanged for a lesser number of shares because a portion of the shares is used to pay the exercise price.

Stockholder Rights.

The warrants do not confer upon holders any voting or any other rights as a stockholder of our company.

The foregoing discussion of our warrants, to the extent it relates to the warrants issued in the private placement, is qualified entirely by reference to the composite form of the warrant used in such private placement and included as an exhibit to the registration statement of which this prospectus is a part.

Registration Rights

We have agreed to use our best efforts to file this registration statement on Form S-1 with the SEC covering the resale of all shares of common stock and all shares of common stock underlying the warrants issued in connection with our recently concluded private placement (as well as up to 1,177,196 shares of our common stock held by certain of our stockholders at the time of the closing of the Reverse Merger and the shares underlying the placement agents' warrants) on or before September 28, 2010 and use our best efforts to have such shelf registration statement declared effective by the SEC as soon as practicable thereafter, but in any event not later than December 27, 2010. We are also obligated to respond to any SEC comments within a stipulated period of time after receiving any such comments and to maintain the effectiveness of the shelf registration statement from the effective date through the earlier of (a) the date on which all the investors in the private placement have completed the sales or distribution described in the registration statement relating thereto or, if earlier until all securities covered by the registration rights agreement may be sold by the investors in the private placement under Rule 144(b)(1) and (b) the date that is eighteen (18) months anniversary of the sale of the securities. In the event the shelf registration statement is not filed with, or declared effective by, the SEC on or prior to the dates set forth above, or we fail to timely satisfy our reporting requirements, each investor in the private placement will receive cash liquidated damages equal to 1% of the purchase price for the shares of common stock and warrants acquired in the private placement for each month (or portion thereof) that the registration statement is not so filed or effective, or has failed to timely file required reports, provided that the aggregate payment as a result of the registration default will in no event exceed 12% of the purchase price for the shares of common stock and warrants. We will bear the expenses in connection with the registration of these shares (exclusive of any underwriting discounts and commissions, if any).

If, at any time or from time to time after the date of the effectiveness of the registration statement, we determine in good faith, following consultation with legal counsel, that (i) it would be detrimental to us and our stockholders for

resales of the registered securities to be made pursuant to a registration statement due to the existence of a material development or potential material development involving us that we would be obligated to disclose in a registration statement, which disclosure would be premature or otherwise inadvisable at such time or would have a material adverse effect upon us and our stockholders, or (ii) such material development or potential material development involving us would adversely affect or require premature disclosure of the filing of a registration by us of any class of our equity securities, then we have the right to suspend offers and sales of the registered securities pursuant to a registration statement for a period of not more than 30 calendar days in any 12 month period, but only if we reasonably conclude, after consultation with outside legal counsel, that the failure to suspend the use of the registration statement would create a material liability or violation under applicable securities laws or regulations.

In addition, we have assumed the obligation of our wholly-owned subsidiary, Bacterin, to provide “piggy back” registration rights to the holders of warrants acquired in Bacterin’s two bridge financings which it conducted prior to the Reverse Merger.

Lock-Up Agreements

All shares of common stock issued in the Reverse Merger to the former holders of shares in Bacterin will be considered “restricted securities” under U.S. federal securities laws and may not be resold pursuant to Rule 144 for a period of one year after July 7, 2010, the date of the filing our Current Report on Form 8-K disclosing the closing of he Reverse Merger. Each of the former Bacterin stockholders who served as directors or executive officers of Bacterin as of the closing of the Reverse Merger or who have joined as members of our Board of Directors concurrently with the consummation of the Reverse Merger, or collectively, Management, have executed one-year a lock-up agreement with us which provide that their shares, including any shares that are now owned or are subsequently acquired by them, will not be, directly or indirectly, publicly sold, subject to a contract for sale or otherwise transferred for a period of 12 months following the Reverse Merger and the private placement; provided, however, that (a) the restrictions set forth in such lock-up agreement will not apply to any securities acquired by Management in the private placement and (b) Guy Cook is permitted to hypothecate, pledge and grant a security interest in up to 5,000,000 of his existing shares received from us in connection with the Reverse Merger as collateral for borrowed funds used to acquire securities in the private placement and, if such collateral is executed against, shall be permitted to assign and transfer such shares to the secured party free of any restrictions set forth therein.

Other Rights To Acquire Our Common Stock

We are contractually obligated to issue shares of our common stock to Harborview Advisors, LLC as follows:

- if, after seven months from the closing of the Reverse Merger and the private placement, our common stock is publicly trading at an average daily closing price of $3.20 per share for the 30 days immediately preceding the last day of such seven month period, we must issue to such stockholder 187,500 shares of our common stock;

- if, after 13 months from the closing of the Reverse Merger and the private placement, our common stock is publicly trading at an average daily closing price of $3.20 per share for the 30 days immediately preceding the last day of such thirteen month period, we must issue to such stockholder 187,500 additional shares of our common stock; and

- if, after 13 months from the closing of the Reverse Merger and the private placement, our common stock is publicly trading at an average daily closing price of $4.80 per share for the 30 days immediately preceding the last day of such thirteen month period, we must issue to such stockholder 187,500 additional shares of our common stock (which shares, for the sake of clarification, shall be in addition to the shares to be issued pursuant to the second bullet point above).

Market Price and Dividends on Common Equity and Related Stockholder Matters Trading Information

Our common stock trades in the over-the-counter market and is quoted on the OTCBB and OTCQB Marketplace under the trading symbol BIHI.OB. The trading market for our common stock has been extremely limited and sporadic.

Although we have applied to list our common stock for trading on the Nasdaq Capital Market. no assurance can be given that we will satisfy the initial listing requirements, or that our shares of common stock will ever be listed on the Nasdaq Capital Market or another national securities exchange.

The warrants will not be registered or listed for trading.

Transfer Agent

Our current transfer agent and registrar for our common stock is Corporate Stock Transfer, Denver, Colorado. We serve as warrant agent for the warrants.

Holders of Record

As of September 28, 2010, there were approximately 358 holders of record of our common stock.

Dividends

We have not paid any dividends on our common stock and we do not intend to pay any dividends on our common stock in the foreseeable future.

## LEGAL MATTERS

The validity of the securities in this offering will be passed upon for us by Exemplar Law, LLC.

## EXPERTS

The financial statements appearing in this prospectus and registration statement on Form S−1 have been audited by Child, Van Wagoner & Bradshaw, PLLC, independent certified public accountants, as set forth in their report thereon appearing elsewhere in this prospectus and in the registration statement on Form S−1, and such report is included in reliance upon such report given upon the authority of such firm as experts in accounting and auditing.

## WHERE YOU CAN FIND ADDITIONAL INFORMATION

We have filed a registration statement on Form S-1 with the Securities and Exchange Commission relating to the common stock offered by this prospectus. This prospectus does not contain all of the information set forth in the registration statement and the exhibits and schedules to the registration statement. Statements contained in this prospectus as to the contents of any contract or other document referred to are not necessarily complete and in each instance we refer you to the copy of the contract or other document filed as an exhibit to the registration statement, each such statement being qualified in all respects by such reference. For further information with respect to our company and the common stock offered by this prospectus, we refer you to the registration statement, exhibits, and schedules.

We file annual, quarterly, and current reports and other information with the SEC. Anyone may read and copy these materials, including the registration statement, without charge at the SEC's Public Reference Room at 100 F Street, NE, Washington, D.C. 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC maintains a website at www.sec.gov that contains reports, proxy and information statements, and other information regarding registrants that file electronically with the SEC.

Our website is located at www.bacterin.com. The information contained on our website does not constitute part of this prospectus. Through our website, we make available free of charge our annual reports on Form 10-K, our quarterly reports on Form 10-Q, our current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, or the Exchange Act. These reports are available as soon as reasonably practicable after we electronically file those materials with the Securities and Exchange Commission.

INDEX TO FINANCIAL STATEMENTS

BACTERIN INTERNATIONAL HOLDINGS, INC.
CONDENSED CONSOLIDATED BALANCE SHEETS

| | September 30, 2010 (unaudited) | December 31, 2009 |
|---|---|---|
| ASSETS | | |
| Current Assets: | | |
| Cash and cash equivalents | $ 571,844 | $ 54,155 |
| Accounts receivable, net of allowance of $ 122,949 and $81,803, respectively | 2,560,692 | 1,314,418 |
| Notes receivable - trade | 518,905 | 270,565 |
| Inventories, net | 6,971,792 | 5,000,713 |
| Prepaid and other current assets | 221,567 | 30,000 |
| | 10,844,800 | 6,669,851 |
| | | |
| Property and equipment, net | 3,117,439 | 3,248,096 |
| Intangible assets, net | 541,417 | 554,268 |
| Notes receivable - related party | 82,255 | - |
| Other assets | 15,585 | 13,675 |
| | | |
| Total Assets | $ 14,601,496 | $ 10,485,890 |
| | | |
| LIABILITIES & STOCKHOLDERS' EQUITY | | |
| Current Liabilities: | | |
| Accounts payable | $ 1,749,938 | $ 1,403,950 |
| Accrued liabilities | 1,052,972 | 463,630 |
| Other current liabilities | 315,000 | - |
| Warrant derivative liability | 7,429,968 | 75,231 |
| Notes payable | 956,978 | 1,126,693 |
| Notes payable to stockholders | 162,397 | 183,461 |
| Current portion of capital lease obligations | 35,780 | 85,071 |
| Convertible notes payable, net of debt discount | 393,834 | 820,787 |
| Current portion of long-term debt | 1,097,525 | 1,202,574 |
| Total current liabilities | 13,194,392 | 5,361,397 |
| Long-term Liabilities: | | |
| Capital lease obligation, less current portion | - | 27,074 |
| Long-term debt, less current portion | 292,800 | 412,545 |
| Total Liabilities | 13,487,192 | 5,801,016 |
| | | |
| Stockholders' Equity | | |
| Preferred stock, $.000001 par value; 15,000,000 shares authorized; no shares issued and outstanding | - | - |
| Common stock, $.000001 par value; 135,000,000 shares authorized; 35,903,864 issued shares and 35,900,160 outstanding shares on September 30, 2010 and 28,211,562 issued shares and 28,152,665 outstanding shares on December 31, 2009 | 36 | 28 |
| Additional paid-in capital | 31,329,914 | 22,238,747 |
| | (2,963) | (76,566) |

| | | |
|---|---|---|
| Treasury stock, 58,897 shares on December 31, 2009 and 3,704 shares on September 30, 2010 | | |
| Retained deficit | (30,212,683) | (17,477,335) |
| Total Stockholders' Equity | 1,114,304 | 4,684,874 |