

SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 8-K

Current Report Pursuant
to Section 13 or 15(d) of the
Securities Exchange Act of 1934

Date of Report (Date of earliest event reported) August 25, 2000

BOSTON BIOMEDICA, INC.

(Exact Name Of Registrant As Specified In Its Charter)

MASSACHUSETTS

(State or Other Jurisdiction of Incorporation)

0-21615

04-2652826

(Commission File Number)

(I.R.S. Employer Identification No.)

375 WEST STREET, WEST BRIDGEWATER, MA

02379

(Address of Principal Executive Offices)

(Zip Code)

(508) 580-1900

(Registrant's Telephone Number, Including Area Code)

N/A

(Former Name or Former Address, if Changed Since Last Report)

ITEM 5. OTHER EVENTS

On August 25, 2000, Boston Biomedica, Inc. (the "Company") entered into a Securities Purchase Agreement (the "Agreement") with GCA Strategic Investment Fund Limited ("GCA"). The Agreement provides for the issuance of a \$2,250,000 3% Senior Subordinated Convertible Debenture (the "GCA Debenture") to GCA due August 25, 2003. The purchase price for the GCA Debenture was \$2,137,500. The GCA Debenture is convertible into the Company's Common Stock on or after November 24, 2000, at a conversion price equal to the lesser of: (i) \$3.36 per share or (ii) 90% of the average of the five (5) lowest volume weighted average sales prices of Common Stock as reported by Bloomberg L.P. during the 25 business days immediately preceding the date on which GCA notifies the Company that it will convert all or a part of the GCA Debenture into Common Stock. In connection with this transaction, the Company also issued warrants to purchase up to 80,000 shares of the Company's Common Stock at an exercise price of \$3.60 per share to GCA (the "GCA Warrant"), and warrants to purchase up to 10,000 shares of the Company's Common Stock at an exercise price of \$3.60 a share to each of DP Securities, Inc. and Wharton Capital Partners, Ltd. (the "Brokers' Warrants"). The aforementioned securities were sold in a transaction exempt from registration pursuant to Section 4(2) of the Securities Act of 1933, as amended, and the Rules promulgated thereunder (the "Act"). The Company's Common Stock underlying the GCA Debenture, the GCA Warrant and the Brokers' Warrants are entitled to certain registration rights. The foregoing summary description of the transaction is qualified in all respects by reference to the documents filed as exhibits hereto.

In a separate but related transaction, dated as of August 25, 2000, the Company entered into a Securities Purchase Agreement with Richard P. Kiphart ("Kiphart") and Shoreline Micro-Cap Fund, L.P. ("Shoreline") (the "Purchase Agreement"). The Purchase Agreement provides for the issuance of: (i) a \$780,000 3% Senior Subordinated Convertible Debenture (the "Kiphart Debenture") to Kiphart and (ii) a \$220,000 3% Senior Subordinated Convertible Debenture (the "Shoreline Debenture") to Shoreline, each due August 25, 2003. The purchase

price for the Kiphart Debenture was \$741,000, and the purchase price for the Shoreline Debenture was \$209,000. Each of the Kiphart Debenture and the Shoreline Debenture is convertible into the Company's Common Stock on or after November 24, 2000, at a conversion price equal to the lesser of: (i) \$3.36 per share or (ii) 90% of the average of the five (5) lowest volume weighted average sales prices of Common Stock as reported by Bloomberg L.P. during the 25 business days immediately preceding the date on which Kiphart or Shoreline notifies the Company that it will convert all or a part of the Kiphart or Shoreline Debenture, as applicable, into Common Stock. In connection with the aforementioned transaction, the Company also issued the following warrants: (i) to Kiphart to purchase up to 27,734 shares of the Company's Common Stock at an exercise price of \$3.60 per share (the "Kiphart Warrant") and (ii) to Shoreline to purchase up to 7,822 shares of the Company's Common Stock at an exercise price of \$3.60 a share (the "Shoreline Warrant"). The aforementioned securities were sold in a transaction exempt from registration pursuant to

Section 4(2) of the Act. The Company's Common Stock underlying the Kiphart Debenture, Shoreline Debenture, Kiphart Warrant and Shoreline Warrant are entitled to certain registration rights. The foregoing summary description of the transaction is qualified in all respects by reference to the documents filed as exhibits hereto.

Interest on each of the GCA Debenture, the Kiphart Debenture and Shoreline Debenture is payable on the last day of March, June, September and December of each year. The Company will use the proceeds from the aforementioned transactions for completion of its West Bridgewater, MA manufacturing facility and for general corporate and working capital purposes.

ITEM 7. FINANCIAL STATEMENTS AND EXHIBITS

<TABLE>

<CAPTION>

ITEM NO. DESCRIPTION

<S>	<C>
4.1	3% Senior Subordinated Convertible Debenture issued to GCA Strategic Investment Fund Limited
4.2	Warrant issued to GCA Strategic Investment Fund Limited
4.3	Warrant issued to Wharton Capital Partners, Ltd.
4.4	Warrant issued to DP Securities, Inc.
4.5	Registration Rights Agreement, dated as of August 25, 2000, by and among Boston Biomedica, Inc., Wharton Capital Partners, Ltd., DP Securities, Inc. and GCA Strategic Investment Fund Limited
4.6	3% Senior Subordinated Convertible Debenture issued to Richard P. Kiphart
4.7	3% Senior Subordinated Convertible Debenture issued to Shoreline Micro-Cap Fund, L.P.
4.8	Warrant issued to Richard P. Kiphart
4.9	Warrant issued to Shoreline Micro-Cap Fund, L.P.
4.10	Registration Rights Agreement dated as of August 25, 2000, by and among Boston Biomedica, Inc., Richard P. Kiphart and Shoreline Micro-Cap Fund, L.P.
10.1	Securities Purchase Agreement dated as of August 25, 2000, by and among Boston Biomedica, Inc., and GCA Strategic Investment Fund Limited
10.2	Securities Purchase Agreement dated as of August 25, 2000, by and among Boston Biomedica, Inc., Richard P. Kiphart and Shoreline Micro-Cap Fund, L.P.
99.1	Press Release dated September 5, 2000

</TABLE>

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this Report to be signed on its behalf by the undersigned hereunto duly authorized.

Dated: September 8, 2000 Boston Biomedica, Inc.

By: /s/ Kevin W. Quinlan

Kevin W. Quinlan, President

This Convertible Debenture is a duly authorized issuance of Convertible Debentures of the Company referred to in that certain Securities Purchase Agreement dated as of the date hereof between the Company and the Purchaser named therein (the "Agreement"). The Agreement contains certain additional agreements among the parties with respect to the terms of this Convertible Debenture, including, without limitation, provisions which (A) limit the conversion rights of the Holder, (B) specify voluntary and mandatory repayment, prepayment and redemption rights and obligations and (C) specify Events of Default following which the remaining balance due and owing hereunder may be accelerated. All such provisions are an integral part of this Convertible Debenture and are incorporated herein by reference. This Convertible Debenture is transferable and assignable to one or more Persons, in accordance with the limitations set forth in the Agreement.

This Convertible Debenture shall rank senior to any indebtedness of the Company except (a) the Company's outstanding credit facility with Fleet Bank and any successor thereof, including increases to such credit facility; (b) the Company's mortgage loan with Commerce Bank; and (c) any future sale and lease back transaction in connection with the Company's headquarters building in West Bridgewater, MA, to which it shall be junior in ranking.

The Company shall keep a register (the "Register") in which shall be entered the names and addresses of the registered holder of this Convertible Debenture and particulars of this Convertible Debenture held by such holder and of all transfers of this Convertible Debenture. References to the Holder or "Holders" shall mean the Person listed in the Register as registered holder of such Convertible Debentures. The ownership of this Convertible Debenture shall be proven by the Register.

2

1. CERTAIN TERMS DEFINED. All terms defined in the Agreement and not otherwise defined herein shall have for purposes hereof the meanings provided for in the Agreement.

2. COMPANY COVENANTS. The Company covenants and agrees to observe and perform each of its covenants, obligations and undertakings contained in the Agreement, which obligations and undertakings are expressly assumed herein by the Company and made for the benefit of the holder hereof.

3. PAYMENT OF PRINCIPAL. The Company shall repay the remaining unpaid balance of this Convertible Debenture on the Maturity Date. The Company may, and shall be obligated to, prepay all or a portion of this Convertible Debenture on the terms specified in the Agreement.

4. CONVERSION.

4.1 CONVERSION OF CONVERTIBLE DEBENTURE. Subject to Section 5 hereof, the Holder shall have the right, at its option, at any time from and after the 90th day following the date of issuance of this Convertible Debenture, to convert the principal amount of this Convertible Debenture, or any portion of such principal amount, into that number of fully paid and nonassessable shares of Common Stock (as such shares shall then be constituted) determined pursuant to this Section 4.1. The number of shares of Common Stock to be issued upon each conversion of this Convertible Debenture shall be determined by dividing the Conversion Amount (as defined below) by the Conversion Price in effect on the date (the "Conversion Date") a Notice of Conversion is delivered to the Company, as applicable, by the Holder by facsimile dispatched prior to 5:00 p.m., E.S.T. Prior to sending the facsimile Notice of Conversion to the Company, the Holder shall notify the Company of such conversion by telephone to one of the following individuals on the following order of priority: (1) Richard T. Schumacher, (2) Kevin Quinlan and (3) Kathi Benjamin (or to each of the individual's voicemail if none of the individuals is available) as set forth in Section 4.4 hereto. The Company may change the individuals to whom such telephone notice shall be directed by notifying the Holder of any such change. The term "Conversion Amount" means, with respect to any conversion of this Convertible Debenture, the sum of (1) the principal amount of this Convertible Debenture to be converted in such conversion plus (2) accrued and unpaid interest, if any, on such principal amount at the interest rates provided in this Convertible Debenture to the Conversion Date plus (3) Default Interest, if any, on the interest

referred to in the immediately preceding clause (2) plus (4) at the Holder's option, any amounts owed to the Holder pursuant to Section 4.3 hereof, Section 10.1 of the Agreement or Section 10.4 of the Agreement.

4.2 CONVERSION PRICE. At the option of the Holder, any portion or all of the outstanding principal amount of this Convertible Debenture shall be converted into a number of shares of Common Stock at the conversion price (the "Conversion Price") equal to the lesser of (i) 110% of the volume weighted average sales price of the Common Stock, as reported by Bloomberg L.P. on the day immediately preceding the Closing Date (the "Fixed Conversion

3

Price") and (ii) 90% of the average of the five (5) lowest volume weighted average sales prices of the Common Stock as reported by Bloomberg L.P. during the 25 Trading Days immediately preceding but not including the date of the related Notice of Conversion (the "Formula Conversion Price").

4.3 AUTHORIZED SHARES.

(1) Consistent with Section 7.11 of the Agreement, the Company (i) shall promptly irrevocably instruct the Company's transfer agent to issue certificates for the Common Stock issuable upon conversion of this Convertible Debenture and (ii) agrees that its issuance of this Convertible Debenture shall constitute full authority to its officers and agents who are charged with the duty of executing stock certificates to execute and issue the necessary certificates for shares of Common Stock in accordance with the terms and conditions of this Convertible Debenture.

(2) If at any time a Holder of this Convertible Debenture submits a Notice of Conversion (x) the Company does not have sufficient authorized but unissued shares of Common Stock available to effect such conversion in full in accordance with the provisions of this Article 4 or (y) the Company is prohibited by the applicable rules of the OTC Bulletin Board or the National Market on which the shares of Common Stock are listed and traded at that time to effect such conversion in full as provided in subsection (3) below, without stockholder approval (each, a "Conversion Default"), the Company shall issue to the Holder all of the shares of Common Stock which are then available to effect such conversion. The portion of this Convertible Debenture which the Holder included in its Conversion Notice and which exceeds the amount which is then convertible into available shares of Common Stock (the "Excess Amount") shall, notwithstanding anything to the contrary contained herein, not be convertible into Common Stock in accordance with the terms hereof until (and at the Holder's option at any time after) the date additional shares of Common Stock are authorized by the Company, or its stockholders, as applicable, at which time the Conversion Price in respect thereof shall be the lower of (i) the Conversion Price on the Conversion Default Date (as defined below) and (ii) the Conversion Price on the Conversion Date thereafter elected by the Holder in respect thereof. The Company shall pay to the Holder payments ("Conversion Default Payments") for a Conversion Default in the amount of $(N/365) \times .24 \times$ the Excess Amount on the Conversion Date in respect of the Conversion Default (the "Conversion Default Date"), where N = the number of days from the Conversion Default Date to the date (the "Authorization Date") that the Company, or its stockholders, as applicable, authorizes a sufficient number of shares of Common Stock to effect conversion of the full outstanding principal balance of this Convertible Debenture or until the Company redeems the Excess Amount in accordance with the terms of this Convertible Debenture. The Company shall use its best efforts to authorize, or cause its stockholders to authorize within 40 days of the occurrence of a Conversion Default, as applicable, a sufficient number of shares of Common Stock as soon as practicable following the earlier of (i) such time that the Holder notifies the Company or that the Company otherwise becomes aware that there

4

are or likely will be insufficient shares to allow full conversion

thereof and (ii) a Conversion Default. The Company shall send notice to the Holder of the authorization of additional shares of Common Stock, the Authorization Date and the amount of Holder's accrued Conversion Default Payments. The accrued Conversion Default Payments for each calendar month shall be paid in cash or shares of Common Stock (at such time as there are sufficient authorized shares of Common Stock) at the Holder's option, as follows:

(a) In the event the Holder elects to take such payment in cash, cash payment shall be made to Holder by the fifth Business Day of the month following the month in which it has accrued; and

(b) In the event the Holder elects to take such payment in Common Stock, the Holder may convert such payment amount into Common Stock at the Conversion Price (as in effect at the time of payment) at any time after the fifth Business Day of the month following the month in which it has accrued (at such time as there are sufficient authorized shares of Common Stock) in accordance with the terms of this Article 4.

(3) The Holder's election pursuant to this Section 4.3 shall be made in writing to the Company at any time prior to 5:00 p.m., E.S.T., on the third Business Day of the month following the month in which Conversion Default payments have accrued. If no election is made, the Holder shall be deemed to have elected to receive cash. Nothing herein shall limit the Holders right to pursue actual damages (to the extent in excess of the Conversion Default Payments) due to the Company's failure to maintain a sufficient number of authorized shares of Common Stock.

(4) In no event shall the Company issue more than the Maximum Number of Shares upon conversion of this Convertible Debenture, unless the Company shall have obtained approval by the stockholders of the Company ("Stockholder Approval") or a waiver of such requirement by the OTC Bulletin Board or the National Market on which the shares of Common Stock are listed and traded at that time. Once the Maximum Number of Shares has been issued (the date of which is hereinafter referred to as the "Maximum Conversion Date"), unless the Company shall have obtained Stockholder Approval or a waiver of such requirement by the OTC Bulletin Board or the National Market on which the shares of Common Stock are listed and traded at that time within 40 days of the Maximum Conversion Date, the Company shall pay to the Holder within five (5) Business Days of the Maximum Conversion Date (or, if the Company is, in good faith, using its best efforts to obtain Stockholder Approval, then the earlier of (x) 40 days following the Maximum Conversion Date, and (y) such date that it becomes reasonably apparent that Stockholder Approval will not be obtained within such 40 days period), the Redemption Price for the Excess Amount plus accrued and unpaid Default Interest, if any.

5

(5) The Maximum Number of Shares shall be subject to adjustment from time to time for stock splits, stock dividends, combinations, capital reorganizations and similar events relating to the Common Stock occurring after the date hereof as contemplated by Article 11 of the Agreement. With respect to each Holder of Convertible Debentures, the Maximum Number of Shares shall refer to such Holder's pro rata share thereof based upon the aggregate principal balance of the Convertible Debentures then outstanding. In the event that the Company obtains Stockholder Approval, approval of the OTC Bulletin Board or the National Market on which the shares of Common Stock are listed and traded at that time, or otherwise is able to increase the number of shares to be issued above the Maximum Number of Shares (such increased number being the "New Maximum Number of Shares"), the references to Maximum Number of Shares above shall be deemed to be, instead, references to the New Maximum Number of Shares.

4.4 METHOD OF CONVERSION.

(1) Prior to sending the Notice of Conversion via facsimile as set forth in Section 4.1 hereof, the Holder shall give notice to

Richard T. Schumacher by telephone (and if Mr. Schumacher is not available to be reached by telephone, either Kevin Quinlan or Kathi Benjamin by telephone, or such other person designated by the Company after the Closing Date) that the Holder intends to submit a Notice of Conversion on such date. Notwithstanding anything to the contrary set forth herein, upon conversion of this Convertible Debenture in accordance with the terms hereof, the Holder shall not be required to physically surrender this Convertible Debenture to the Company unless the entire unpaid principal amount of this Convertible Debenture is so converted. Rather, the Holder shall send to the Company, and the Company shall send to the Holder, via overnight delivery service (a) the originally signed and executed Notice of Conversion and (b) an originally signed and executed ANNEX A to this Convertible Debenture indicating the amounts to be converted and the new principal balance of this Convertible Debenture taking into account the Notice of Conversion. The Company shall keep as part of its records the originally executed ledger and the Holder shall maintain a copy thereof. Upon execution of the conversion contemplated by the Notice of Conversion, the Company and the Holder shall deliver to one another an executed copy of ANNEX A. It is specifically contemplated that the Company shall act as the calculation agent for conversions and repayments. In the event there is a dispute as to the number of shares of Common Stock the Holder is entitled to receive upon a conversion of this Convertible Debenture (or the amount of cash to be received upon repayment or redemption of this Convertible Debenture), the amount of any payments due upon an Event of Default under this Convertible Debenture or the calculation of any of the foregoing, the Holder and the Company agree that (i) the Company shall issue to the Holder the undisputed number of shares of Common Stock (or pay any undisputed cash amounts with respect to a redemption or default payments) and (ii) each party will use its best efforts to resolve such dispute within one business day following the receipt of a Notice of Conversion (or Notice of Redemption, as applicable). If such dispute cannot be resolved within the one-day period, the Company and the Holder shall submit the dispute to

6

an independent accountant mutually agreed upon by the Company and the Holder to make a determination as to the amounts due to the Holder. Any such determination shall be final and binding on the Company and the Holder. The Company shall issue shares of Common Stock or pay any cash amounts owed to the Holder as a result of the resolution of the dispute within two business days following the receipt of the independent accountant's determination. The Holder and any assignee, by acceptance of this Convertible Debenture, acknowledge and agree that, by reason of the provisions of this paragraph, following a conversion of a portion of this Convertible Debenture, the principal amount represented by this Convertible Debenture will be the amount indicated on the ledger evidenced by ANNEX A attached hereto (which may be less than the amount stated on the face hereof).

(2) The Company shall not be required to pay any tax which may be payable in respect of any transfer involved in the issuance and delivery of shares of Common Stock or other securities or property on conversion of this Convertible Debenture in a name other than that of the Holder (or in street name), and the Company shall not be required to issue or deliver any such shares or other securities or property unless and until the person or persons (other than the Holder or the custodian in whose street name such shares are to be held for the Holder's account) requesting the issuance thereof shall have paid to the Company the amount of any such tax or shall have established to the satisfaction of the Company that such tax has been paid.

(3) Subject to Section 5 hereof, upon receipt by the Company of a Notice of Conversion, the Holder shall be deemed to be the holder of record of the Common Stock issuable upon such conversion, the outstanding principal amount and the amount of accrued and unpaid interest on this Convertible Debenture shall be deemed reduced to reflect such conversion, and, unless the Company defaults on its obligations under this Article 4, all rights with respect to the portion of this Convertible Debenture being so converted shall forthwith terminate except the right to receive the Common Stock or

other securities, cash or other assets, as herein provided, on such conversion. Subject to Section 5 hereof, if the Holder shall have given a Notice of Conversion as provided herein, the Company's obligation to issue and deliver the certificates for shares of Common Stock shall be absolute and unconditional, irrespective of the absence of any action by the Holder to enforce the same, any waiver or consent with respect to any provisions thereof, the recovery of any judgment against any person or any action by the Holder to enforce the same, any failure or delay in the enforcement of any other obligation of the Company to the Holder of record, or any setoff, counterclaim, recoupment, limitation or termination, other than a breach by the Holder of any obligation to the Company, and subject to Section 4.4(1) irrespective of any other circumstance which might otherwise limit such obligation of the Company to the Holder in connection with such conversion. The date of receipt (including receipt via telecopy) of such Notice of Conversion shall be the Conversion Date so long as it is received and the telephone notice thereof in accordance with Section 4.4(1) is made before 5:00 p.m., E.S.T., on such date.

7

(4) Notwithstanding the foregoing, if a Holder has not received certificates for all shares of Common Stock prior to the expiration of the Deadline with respect to a conversion of any portion of this Convertible Debenture for any reason, then (unless the Holder otherwise elects to retain its status as a holder of Common Stock by so notifying the Company), the Holder shall regain the rights of a Holder of this Convertible Debenture with respect to such unconverted portions of this Convertible Debenture and the Company shall, as soon as practicable, return such unconverted Convertible Debenture to the holder or, if the Convertible Debenture has not been surrendered, adjust its records to reflect that such portion of this Convertible Debenture not been converted. In all cases, the Holder shall retain all of its rights and remedies (including, without limitation, (i) the right to receive Conversion Default Payments to the extent required thereby for such Conversion Default and any subsequent Conversion Default and (ii) the right to have the Conversion Price with respect to subsequent conversions determined in accordance with Section 4.3 for the Company's failure to convert this Convertible Debenture.)

(5) In lieu of delivering physical certificates representing the Common Stock issuable upon conversion, provided the Company's transfer agent is participating in the Depository Trust Company ("DTC") Fast Automated Securities Transfer program, upon request of the Holder and its compliance with the provisions contained in Section 4.1 and in this Section 4.4, the Company shall use its best efforts to cause its transfer agent to electronically transmit the Common Stock issuable upon conversion to the Holder by crediting the account of Holder's prime broker (as designated by Holder from time to time) with DTC through its Deposit Withdrawal Agent Commission System.

5. REDEMPTION BY COMPANY.

5.1 COMPANY'S RIGHT TO REDEEM UPON RECEIPT OF NOTICE OF CONVERSION. In addition to the redemption rights set forth in the Agreement, upon delivery of a Notice of Conversion by the Holder (the "Initial Notice of Conversion"), if the Closing Bid Price of the Company's Common Stock on the date of the Notice of Conversion is less than 65% of the Closing Bid Price of the Common Stock on the Closing Date, the Company may elect to redeem in whole or in part, the remaining unpaid principal amount of this Convertible Debenture, for cash at a redemption price (the "Redemption Price") equal to (x) the number of shares of Common Stock into which this Convertible Debenture is then convertible, times (y) the average Closing Bid Price of Common Stock for the five (5) Trading Days as reported by Bloomberg L.P. immediately prior to the date that this Convertible Debenture is called for redemption, plus accrued and unpaid interest. The election by the Company to redeem any amount of this Convertible Debenture shall be applicable to any subsequent amount to be converted as set forth in any Notice of Conversion received by the Company in the twenty (20) calendar day period following the date of the Initial Notice of Conversion, subject to the provisions of Section 5.2 below.

5.2 MECHANICS OF REDEMPTION. The Company shall provide written notice of its election to redeem rather than convert the amounts set forth in the Notice of Conversion ("Redemption Notice") via facsimile to the Holder within one Business Day of the Confirmed Delivery of the Notice of Conversion to the Company, if such Confirmed Delivery is on a Business Day or by 5:00 E.S.T. of the next Business Day if such Notice of Conversion is not delivered on a Business Day, with a copy by either overnight or 2-day courier to the Holder of this Convertible Debenture to be redeemed at the address and facsimile number of such Holder appearing in the Company's register for the Convertible Debentures. The Company shall effect each such redemption within three (3) Business Days of giving the Redemption Notice. Such Redemption Notice shall indicate whether the Company will redeem all or part of such portion of the Convertible Debenture to be redeemed and the applicable Redemption Price. The Company shall not be entitled to send any notice of redemption and begin the redemption procedure unless it has (i) the full amount of the Redemption Price, in cash, available in a demand or other immediately available account in a bank or similar financial institution or (ii) immediately available credit facilities, in the full amount of the Redemption Price, with a bank or similar financial institution on the date the Redemption Notice is sent to the Holders of this Convertible Debenture. Provided, however, the Company will process any Notice of Conversion received prior to the issuance of a Redemption Notice; and further provided that, after a Redemption Notice has been issued, the Holder may issue a Notice of Conversion which will not be honored unless the Company fails to make the redemption payment when due. In the event of such failure, the Notice of Conversion will be honored as of the date of the Notice of Conversion. Additionally, if the Company fails to make full payments of the Redemption Price of this Convertible Debenture being redeemed by the third Business Day following the Notice of Redemption, then the Company waives its right to redeem any of the remaining then outstanding Convertible Debentures pursuant to Section 5.1, unless approved in writing by the Holder.

5.3 PAYMENT OF REDEMPTION PRICE. The Redemption Price shall be paid to the Holder of this Convertible Debenture within three (3) Business Days of the delivery of the Redemption Notice.

6. HOLDER'S RIGHT TO ADVANCE NOTICE OF ELECTION TO REDEEM.

6.1 HOLDER'S RIGHT TO ELECT TO RECEIVE NOTICE OF CASH REDEMPTION BY COMPANY. The Holder of this Convertible Debenture shall have the right to require the Company to provide advance notice stating whether the Company will elect to redeem all or part of the redeemable portion in cash, pursuant to the Company's redemption rights discussed in Section 5.1 above.

6.2 MECHANICS OF HOLDER'S ELECTION NOTICE. Holder shall give notice to the Company by facsimile (the "Election Notice"), requiring that the Company disclose whether the Company would elect to redeem the redeemable portion of this Convertible Debenture (in

whole or in part) if the Holder were to provide a Notice of Conversion within the next four (4) Business Days and sought to convert the Convertible Debenture in such principal amount as is specified in the Election Notice.

6.3 COMPANY'S RESPONSE. Company must respond, disclosing its election, within two (2) Business Days of receipt of Holder's Election Notice via facsimile. If Company does not respond to Holder within two (2) Business Days (by 12:00 noon, if required above) via facsimile, Company shall be deemed to have forfeited its right to exercise redemption pursuant to Section 5.1 upon its receipt of (but only with respect to) that Notice of Conversion.

7. HOLDER'S COVENANTS. The Holder of this Convertible Debenture, by its acceptance thereof, covenants and agrees that the Convertible Debenture is being acquired as an investment and not with a view to the distribution thereof in violation of the Securities Act, and that the Convertible Debenture may not be transferred, sold, assigned, hypothecated or otherwise disposed of, in whole, or in part, except as provided on the first page

hereof and provided that the Holder shall have furnished to the Company an opinion of counsel, in form and substance reasonably satisfactory to the Company, to the effect that such transfer is exempt from the registration requirements of the Securities Act and any applicable state securities laws.

8. MISCELLANEOUS. This Convertible Debenture shall be deemed to be a contract made under the laws of the State of Massachusetts, and for all purposes shall be governed by and construed in accordance with the laws of said State. The parties hereto, including all guarantors or endorsers, hereby waive presentment, demand, notice, protest and all other demands and notices in connection with the delivery, acceptance, performance and enforcement of this Convertible Debenture, except as specifically provided herein, and assent to extensions of the time of payment, or forbearance or other indulgence without notice. The Company hereby submits to the exclusive jurisdiction of the United States District Court for Boston, Massachusetts and of any Massachusetts state court sitting in Boston, Massachusetts for purposes of all legal proceedings arising out of or relating to this Convertible Debenture. The Company irrevocably waives, to the fullest extent permitted by law, any objection which it may now or hereafter have to the laying of the venue of any such proceeding brought in such a court and any claim that any such proceeding brought in such a court has been brought in an inconvenient forum. The Company hereby irrevocably waives any and all right to trial by jury in any legal proceeding arising out of or relating to this Convertible Debenture.

The Holder of this Convertible Debenture by acceptance of this Convertible Debenture agrees to be bound by the provisions of this Convertible Debenture which are expressly binding on such Holder.

[Signature page follows]

IN WITNESS WHEREOF, the Company has caused this instrument to be duly executed.

Dated: August 25, 2000

BOSTON BIOMEDICA, INC.

By: /s/ Kevin W. Quinlan

Name: Kevin W. Quinlan

Title: President

ANNEX A

CONVERSION AND REPAYMENT LEDGER

<TABLE>
<CAPTION>

DATE	PRINCIPAL BALANCE	INTEREST CONVERTED OR PAID	PRINCIPAL CONVERTED OR PAID	PRINCIPAL CONVERTED BALANCE	NEW PRINCIPAL INITIALS	ISSUER INITIALS	HOLDER
<S>	<C>	<C>	<C>	<C>	<C>	<C>	

</TABLE>

BOSTON BIOMEDICA, INC.

HOLDER:

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

FULL NAME AND ADDRESS OF SUBSCRIBER FOR REGISTRATION PURPOSES:

NAME:

ADDRESS:

TEL NO:

FAX NO:

CONTACT
NAME:

DELIVERY INSTRUCTIONS (IF DIFFERENT FROM REGISTRATION NAME):

NAME:

ADDRESS:

TEL NO:

FAX NO:

CONTACT
NAME:

SPECIAL INSTRUCTIONS:

NOTICE OF CONVERSION

(To be Executed by the Registered Holder

in order to Convert the Convertible Debenture)

The undersigned hereby irrevocably elects to convert \$_____ of the principal balance of the Convertible Debenture into shares of Common Stock, \$.01 par value per share (the "Common Stock"), of Boston Biomedica, Inc. (the "Company") according to the conditions hereof, as of the date written below. No fee will be charged to the Holder for any conversion, except for transfer taxes, if any. The undersigned, as contemplated by Section 5.1 of the Securities Purchase Agreement pursuant to which the Convertible Debenture was issued, hereby states that the representations and warranties of the undersigned set forth therein are true and correct in all material respects as of the date hereof.

Conversion calculations:

Date of Conversion

Applicable Conversion Price

Number of Shares

Name/Signature

Address:

preference, and the Holders of which shall ordinarily, in the absence of contingencies, be entitled to vote for the election of a majority of directors of the Company (even though the right so to vote has been suspended by the happening of such a contingency) and (c) any other securities into which or for which any of the securities described in (a) or (b) may be converted or exchanged pursuant to a plan of recapitalization, reorganization, merger, sale of assets or otherwise.

(c) The term "OTHER SECURITIES" refers to any stock (other than Common Stock) and other securities of the Company or any other person (corporate or otherwise) that the Holder of this Warrant at any time shall be entitled to receive, or shall have received, on the exercise of this Warrant, in lieu of or in addition to Common Stock, or that at any time shall be issuable or shall have been issued in exchange for or in replacement of Common Stock or Other Securities pursuant to Section 4 or otherwise.

1. EXERCISE OF WARRANT.

1.1 METHOD OF EXERCISE.

(a) This Warrant may be exercised in whole or in part (but not as to a fractional share of Common Stock), at any time and from time to time during the Exercise Period by the Holder hereof by delivery of a notice of exercise (a "NOTICE OF EXERCISE") substantially in the form attached hereto as EXHIBIT A via facsimile to the Company. Prior to sending the Notice of Exercise via facsimile, the Holder shall give Richard Schumacher notice of its intent to submit a Notice of Exercise by telephone (and if Mr. Schumacher is not available to be reached by telephone, either Kevin Quinlan or Kathi Benjamin by telephone, or such other person designated by the Company after the Closing Date). Promptly thereafter the Holder shall surrender this Warrant (if the entire amount of the Warrant is subject to the Notice of Exercise) to the Company at its principal office via overnight delivery service, accompanied by payment of the Purchase Price multiplied by the number of shares of

2

Common Stock for which this Warrant is being exercised (the "EXERCISE PRICE"). Payment of the Exercise Price shall be made, at the option of the Holder, (i) by check or bank draft payable to the order of the Company, or (ii) by wire transfer to the account of the Company. Upon exercise, the Holder shall be entitled to receive within three Trading Days of the Exercise Date (as defined herein), one or more certificates, issued in the Holder's name or in such name or names as the Holder may direct, subject to the limitations on transfer contained herein, for the number of shares of Common Stock so purchased. The shares of Common Stock so purchased shall be deemed to be issued as of the close of business on the date on which the Company shall have received from the Holder payment in full of the Exercise Price (the "EXERCISE DATE").

(b) Upon exercise of a portion of this Warrant in accordance with the terms hereof, records showing the amount so exercised and the date of exercise shall be maintained on a ledger substantially in the form of ANNEX B attached hereto (an originally signed and executed copy of which shall be delivered to the Company with each Notice of Exercise). The Company shall maintain the originally signed and executed ledger and the Holder shall maintain a copy thereof. Upon execution of the exercise of the Warrants contemplated by the Notice of Exercise, the Company shall deliver to the Holder a copy of ANNEX B signed and executed by the Company, and the Holder shall deliver to the Company a copy of Annex B signed by the Holder. It is specifically contemplated that the Company shall act as the calculation agent for all exercises of this Warrant. The Holder and any assignee, by acceptance of this Warrant, acknowledges and agrees that, by reason of the provisions of this paragraph, following an exercise of a portion of this Warrant, the number of shares of Common Stock represented by this Warrant will be the amount indicated on ANNEX B attached hereto (which may be less than the amount stated on the face hereof).

(c) In the event there is a dispute as to the number of shares of Common Stock the Holder is entitled to receive upon exercise of this Warrant, the Company shall issue to the Holder the number of shares not in dispute and the Company and the Holder will use their best efforts to resolve such dispute within one Business Day following the receipt of a Notice of Exercise. If such dispute cannot be resolved within such one-day period, the Company and the Holder shall submit the dispute to an independent accountant mutually agreed upon by the Company and the Holder to make a final and binding determination of the number of shares owed to the Holder. The Company shall issue shares of Common Stock owed to Holder as a result of the resolution of the dispute within two Business Days following the receipt of the accountant's independent determination.

1.2 REGULATION D RESTRICTIONS. The Holder hereof represents and warrants to the Company that it has acquired this Warrant and anticipates acquiring the shares of Common Stock issuable upon exercise of the Warrant solely for its own account for investment purposes and not with a view to or for resale of such securities unless such resale has been registered with the Commission or an applicable exemption is available therefor and provided that the Holder shall have furnished to the Company an opinion of counsel in form and substance reasonably satisfactory to the Company, to the effect that such transfer is exempt from the registration requirements of the Securities Act and any applicable state securities laws.

3

1.3 COMPANY ACKNOWLEDGMENT. The Company will, at the time of the exercise of this Warrant, upon request of the Holder hereof, acknowledge in writing its continuing obligation to afford to such Holder the registration rights to which such Holder shall continue to be entitled after such exercise in accordance with the provisions of a Registration Rights Agreement dated the date hereof (the "Registration Rights Agreement").

1.4 LIMITATION ON EXERCISE. Notwithstanding the rights of the Holder to exercise all or a portion of this Warrant as described herein, such exercise rights shall be limited, solely to the extent set forth in the Purchase Agreement as if such provisions were specifically set forth herein. In addition, the number of shares of Common Stock issuable upon exercise of this Warrant is subject to reduction as specified in Section 10.3 of the Purchase Agreement.

2. DELIVERY OF STOCK CERTIFICATES, ETC., ON EXERCISE. As soon as practicable after the exercise of this Warrant, and in any event within three (3) Business Days thereafter, the Company at its expense (including the payment by it of any applicable issue, stamp or transfer taxes) will cause to be issued in the name of and delivered to the Holder thereof, or, to the extent permissible hereunder, to such other person as such Holder may direct, a certificate or certificates for the number of fully paid and nonassessable shares of Common Stock (or Other Securities) to which such Holder shall be entitled on such exercise, plus, in lieu of any fractional share to which such Holder would otherwise be entitled, cash equal to such fraction multiplied by the then applicable Purchase Price, together with any other stock or other securities and property (including cash, where applicable) to which such Holder is entitled upon such exercise pursuant to Section 1 or otherwise.

3. ADJUSTMENT FOR EXTRAORDINARY EVENTS. The Purchase Price to be paid by the Holder upon exercise of this Warrant, and the consideration to be received upon exercise of this Warrant, shall be adjusted in case at any time or from time to time pursuant to Article 11 of the Purchase Agreement as if such provisions were specifically set forth herein.

4. NO IMPAIRMENT. The Company will not, by amendment of its Certificate of Incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such action as may be necessary or appropriate in order to protect the rights of the Holder of this Warrant against impairment. Without limiting the generality of the foregoing, the Company (a) will not increase the par value of any shares of stock receivable on the exercise of this Warrant above the amount payable therefor on such exercise, (b) will take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and

unassessable shares of stock on the exercise of this Warrant, and (c) will not transfer all or substantially all of its properties and assets to any other person (corporate or otherwise), or consolidate with or merge into any other person or permit any such person to consolidate with or merge into the Company (if the Company is not the surviving person), unless such other person shall expressly assume in writing and will be bound by all the terms of this Warrant.

4

5. CERTIFICATE AS TO ADJUSTMENTS. In each case of any adjustment or readjustment in the shares of Common Stock (or Other Securities) issuable on the exercise of this Warrant, the Company will promptly cause its principal financial officer to compute such adjustment or readjustment in accordance with the terms of this Warrant and prepare a certificate setting forth such adjustment or readjustment and showing in detail the facts upon which such adjustment or readjustment is based, including a statement of (a) the consideration received or receivable by the Company for any additional shares of Common Stock (or Other Securities) issued or sold or deemed to have been issued or sold, (b) the number of shares of Common Stock (or Other Securities) outstanding or deemed to be outstanding, and (c) the Purchase Price and the number of shares of Common Stock to be received upon exercise of this Warrant, in effect immediately prior to such issue or sale and as adjusted and readjusted as provided in this Warrant. The Company will forthwith mail a copy of each such certificate to the Holder of this Warrant, and will, on the written request at any time of the Holder of this Warrant, furnish to such Holder a like certificate setting forth the Purchase Price at the time in effect and showing how it was calculated.

6. NOTICES OF RECORD DATE, ETC.

In the event of

(a) any taking by the Company of a record of the Holders of any class of securities for the purpose of determining the Holders thereof who are entitled to receive any dividend or other distribution, or any right to subscribe for, purchase or otherwise acquire any shares of stock of any class or any other securities or property, or to receive any other right, or

(b) any capital reorganization of the Company, any reclassification or recapitalization of the capital stock of the Company or any transfer of all or substantially all the assets of the Company to or consolidation or merger of the Company with or into any other Person, or

(c) any voluntary or involuntary dissolution, liquidation or winding-up of the Company,

then and in each such event the Company will mail or cause to be mailed to the Holder of this Warrant a notice specifying (i) the date on which any such record is to be taken for the purpose of such dividend, distribution or right, and stating the amount and character of such dividend, distribution or right, and (ii) the date on which any such reorganization, reclassification, recapitalization, transfer, consolidation, merger, dissolution, liquidation or winding-up is to take place, and the time, if any, as of which the Holders of record of Common Stock (or Other Securities) shall be entitled to exchange their shares of Common Stock (or Other Securities) for securities or other property deliverable on such reorganization, reclassification, recapitalization, transfer, consolidation, merger, dissolution, liquidation or winding-up. Such notice shall be mailed at least 20 days prior to the date specified in such notice on which any action is to be taken.

5

7. RESERVATION OF STOCK, ETC. ISSUABLE ON EXERCISE OF WARRANT. The Company will at all times reserve and keep available, solely for issuance and delivery on the exercise of this Warrant, all shares of Common Stock (or Other Securities) from time to time issuable on the exercise of this Warrant.

8. EXCHANGE OF WARRANT. On surrender for exchange of this Warrant, properly endorsed and in compliance with the restrictions on transfer set forth in the legend on the face of this Warrant, to the Company, the Company at its expense will issue and deliver to or on the order of the Holder thereof a new

Warrant of like tenor, in the name of such Holder or as such Holder (on payment by such Holder of any applicable transfer taxes) may direct, calling in the aggregate on the face or faces thereof for the number of shares of Common Stock called for on the face of the Warrant so surrendered or for such lesser number of shares of Common Stock as may be reflected on the Warrant Exercise Ledger attached as Annex B.

8. REPLACEMENT OF WARRANT. On receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant and, in the case of any such loss, theft or destruction of this Warrant, on delivery of an indemnity agreement or security reasonably satisfactory in form and amount to the Company or, in the case of any such mutilation, on surrender and cancellation of this Warrant, the Company at its expense will execute and deliver, in lieu thereof, a new Warrant of like tenor.

9. REMEDIES. The Company stipulates that the remedies at law of the Holder of this Warrant in the event of any default or threatened default by the Company in the performance of or compliance with any of the terms of this Warrant are not and will not be adequate, and that such terms may be specifically enforced by a decree for the specific performance of any agreement contained herein or by an injunction against a violation of any of the terms hereof or otherwise.

10. NEGOTIABILITY, ETC.. This Warrant is issued upon the following terms, to all of which each Holder or owner hereof by the taking hereof consents and agrees:

(a) until this Warrant is transferred on the books of the Company, the Company may treat the registered Holder hereof as the absolute owner hereof for all purposes, notwithstanding any notice to the contrary; and

(b) this Warrant may not be sold, transferred or assigned except pursuant to an effective registration statement under the Securities Act or pursuant to an applicable exemption therefrom.

11. REGISTRATION RIGHTS. The Company is obligated to register the shares of Common Stock issuable upon exercise of this Warrant in accordance with the terms of the Registration Rights Agreement.

12. WARRANT REDEMPTION. Upon occurrence of the events described in Sections 3.4 and 10.4(c) of the Purchase Agreement, the Company, at the request of Holder, shall redeem all outstanding Warrants that remain unexercised at a redemption price equal to the greater of (x) an

6

appraised value of the Warrants, as determined by Black Sholes, on the date they are called for redemption and (y) the number of Warrants being redeemed multiplied by the excess of (A) the average Closing Bid Price of the Common Stock for the five trading days immediately prior to the date that the Warrants are called for redemption over (B) the exercise price of the Warrants.

13. NOTICES, ETC.. All notices and other communications from the Company to the Holder of this Warrant shall be mailed by first class registered or certified mail, postage prepaid, at such address as may have been furnished to the Company in writing by such Holder or, until any such Holder furnishes to the Company any address, then to, and at the address of, the last Holder of this Warrant who has so furnished an address to the Company.

14. MISCELLANEOUS. This Warrant and any term hereof may be changed, waived, discharged or terminated only by an instrument in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought. This Warrant shall be construed and enforced in accordance with and governed by the internal laws of the State of Massachusetts. The headings in this Warrant are for the purposes of reference only, and shall not limit or otherwise affect any of the terms hereof. The invalidity or unenforceability of any provision hereof shall in no way affect the validity or enforceability of any other provision.

[Signature Page Follows]

7

DATED as of August 25, 2000.

BOSTON BIOMEDICA, INC.

By: /s/ Kevin W. Quinlan

Name: Kevin W. Quinlan

Title: President

8

EXHIBIT A

FORM OF NOTICE EXERCISE - WARRANT
(To be executed only upon exercise
of the Warrant in whole or in part)

To _____

The undersigned registered Holder of the accompanying Warrant, hereby exercises such Warrant or portion thereof for, and purchases thereunder, _____ (1) shares of Common Stock (as defined in such Warrant) and herewith makes payment therefor in the amount and manner set forth below, as of the date written below. The undersigned requests that the certificates for such shares of Common Stock be issued in the name of, and delivered to, _____ whose address is _____.

The Exercise Price is paid as follows:

- // Certified Bank draft payable to the Company in the amount of \$ _____.
- // Wire transfer to the account of the Company in the amount of \$ _____.

Upon exercise pursuant to this Notice of Exercise, the Holder will be in compliance with the Limitation on Exercise (as defined in the Securities Purchase Agreement pursuant to which this Warrant was issued).

The Holder of the shares of Common Stock received upon exercise of the Warrant (the "Common Shares"), covenants and agrees that the Common Shares are being acquired as an investment and not with a view to the distribution thereof in violation of the Securities Act and that the Common Shares may not be transferred, sold, assigned, hypothecated or otherwise disposed of, in whole or in part except as provided in the legend on the first page of this Warrant and provided that the Holder shall have furnished the Company an opinion of counsel in form and substance reasonably acceptable to the Company to the effect that such transfer is exempt from the registration requirements of the Securities Act and any applicable state securities laws.*

Date:

(Name must conform to name of Holder as specified on the face of the Warrant)

By:

Name:

Title:

Address of Holder:

Date of exercise:

* If shares of common Stock are to be issued to anyone other than the Holder, this covenant and representation must be made by such other Person.

(1) Insert the number of shares of Common Stock as to which the

accompanying Warrant is being exercised. In the case of a partial exercise, a new Warrant or Warrants will be issued and delivered, representing the unexercised portion of the accompanying Warrant, to the Holder surrendering the same.

ANNEX B

WARRANT EXERCISE LEDGER

<TABLE>
<CAPTION>

DATE	ORIGINAL NUMBER OF WARRANTS	WARRANTS EXERCISED	EXERCISE PRICE PAID	NEW BALANCE OF WARRANTS	ISSUER INITIALS	HOLDER INITIALS
<S>	<C>	<C>	<C>	<C>	<C>	<C>

</TABLE>

BOSTON BIOMEDICA, INC.

HOLDER:

By: _____
Name: _____
Title: _____

By: _____
Name: _____
Title: _____

Exhibit 4.3

Warrant to Wharton Capital Partners, Ltd.

THIS COMMON STOCK PURCHASE WARRANT HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"). THE HOLDER HEREOF, BY PURCHASING THIS COMMON STOCK PURCHASE WARRANT, AGREES FOR THE BENEFIT OF THE COMPANY THAT SUCH SECURITIES MAY BE OFFERED, SOLD OR OTHERWISE TRANSFERRED ONLY (A) TO THE COMPANY, (B) PURSUANT TO AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT, OR (C) IF REGISTERED UNDER THE SECURITIES ACT AND ANY APPLICABLE STATE SECURITIES LAWS.

BOSTON BIOMEDICA, INC.

COMMON STOCK PURCHASE WARRANT

No. 2

Number of shares: 10,000 Holder: Wharton Capital Partners, Ltd.
Expiration Date: August 25, 2005 545 Madison Avenue
New York, New York 10022
Purchase Price Per Share: \$3.60

For identification only. The governing terms of this Warrant
are set forth below.

Boston Biomedica, Inc., a Massachusetts corporation (the "COMPANY"), hereby certifies that, for value received, Wharton Capital Partners, Ltd. or its assigns (the "HOLDER"), is entitled, subject to the terms set forth below, to purchase from the Company at any time or from time to time after the date hereof and prior to the fifth anniversary hereof (the "EXERCISE PERIOD"), at the Purchase Price hereinafter set forth, Ten Thousand (10,000) shares of the fully paid and nonassessable shares of common stock of the Company, \$0.01 par value per share (the "Common Stock"). The number and character of such shares of Common Stock and the Purchase Price are subject to adjustment as provided herein.

The purchase price per share of Common Stock issuable upon exercise of this Warrant (the "PURCHASE PRICE") shall initially be equal to 120% of the average Closing Bid Price as published by Bloomberg, L.P. of the Common Stock on the day immediately preceding the date hereof; PROVIDED, HOWEVER, that the Purchase Price shall be adjusted from time to time as provided herein.

Capitalized terms used herein not otherwise defined shall have the meanings ascribed thereto in that certain Securities Purchase Agreement of even date herewith between the Company and GCA Strategic Investment Fund Limited (the "Purchase Agreement"). By execution of this Warrant, the Holder hereof agrees to be bound by and to benefit from the provisions of the Purchase Agreement

1

set forth herein. As used herein the following terms, unless the context otherwise requires, have the following respective meanings:

(a) The term "COMPANY" shall include Boston Biomedica, Inc. and any corporation that shall succeed or assume the obligations of such corporation hereunder.

(b) The term "COMMON STOCK" includes (a) the Company's common stock, par value \$0.01 per share, (b) any other capital stock of any class or classes (however designated) of the Company, authorized on or after the date hereof, the Holders of which shall have the right, without limitation as to amount, either to all or to a share of the balance of current dividends and liquidating dividends after the payment of dividends and distributions on any shares entitled to preference, and the Holders of which shall ordinarily, in the absence of contingencies, be entitled to vote for the election of a majority of directors of the Company (even though the right so to vote has been

suspended by the happening of such a contingency) and (c) any other securities into which or for which any of the securities described in (a) or (b) may be converted or exchanged pursuant to a plan of recapitalization, reorganization, merger, sale of assets or otherwise.

(c) The term "OTHER SECURITIES" refers to any stock (other than Common Stock) and other securities of the Company or any other person (corporate or otherwise) that the Holder of this Warrant at any time shall be entitled to receive, or shall have received, on the exercise of this Warrant, in lieu of or in addition to Common Stock, or that at any time shall be issuable or shall have been issued in exchange for or in replacement of Common Stock or Other Securities pursuant to Section 4 or otherwise.

1. EXERCISE OF WARRANT.

1.1 METHOD OF EXERCISE.

(a) This Warrant may be exercised in whole or in part (but not as to a fractional share of Common Stock), at any time and from time to time during the Exercise Period by the Holder hereof by delivery of a notice of exercise (a "NOTICE OF EXERCISE") substantially in the form attached hereto as EXHIBIT A via facsimile to the Company. Prior to sending the Notice of Exercise via facsimile, the Holder shall give Richard Schumacher notice of its intent to submit a Notice of Exercise by telephone (and if Mr. Schumacher is not available to be reached by telephone, either Kevin Quinlan or Kathi Benjamin by telephone, or such other person designated by the Company after the Closing Date). Promptly thereafter the Holder shall surrender this Warrant (if the entire amount of the Warrant is subject to the Notice of Exercise) to the Company at its principal office via overnight delivery service, accompanied by payment of the Purchase Price multiplied by the number of shares of Common Stock for which this Warrant is being exercised (the "EXERCISE PRICE"). Payment of the Exercise Price shall be made, at the option of the Holder, (i) by check or bank draft payable to the order of the Company, or (ii) by wire transfer to the account of the Company. Upon exercise, the Holder shall be entitled to receive within three Trading Days of the Exercise Date (as defined herein), one or more certificates, issued in the Holder's name or

2

in such name or names as the Holder may direct, subject to the limitations on transfer contained herein, for the number of shares of Common Stock so purchased. The shares of Common Stock so purchased shall be deemed to be issued as of the close of business on the date on which the Company shall have received from the Holder payment in full of the Exercise Price (the "EXERCISE DATE").

(b) Upon exercise of a portion of this Warrant in accordance with the terms hereof, records showing the amount so exercised and the date of exercise shall be maintained on a ledger substantially in the form of ANNEX B attached hereto (an originally signed and executed copy of which shall be delivered to the Company with each Notice of Exercise). The Company shall maintain the originally signed and executed ledger and the Holder shall maintain a copy thereof. Upon execution of the exercise of the Warrants contemplated by the Notice of Exercise, the Company shall deliver to the Holder a copy of ANNEX B signed and executed by the Company, and the Holder shall deliver to the Company a copy of Annex B signed by the Holder. It is specifically contemplated that the Company shall act as the calculation agent for all exercises of this Warrant. The Holder and any assignee, by acceptance of this Warrant, acknowledges and agrees that, by reason of the provisions of this paragraph, following an exercise of a portion of this Warrant, the number of shares of Common Stock represented by this Warrant will be the amount indicated on ANNEX B attached hereto (which may be less than the amount stated on the face hereof).

(c) In the event there is a dispute as to the number of shares of Common Stock the Holder is entitled to receive upon exercise of this Warrant, the Company shall issue to the Holder the number of shares not in dispute and the Company and the Holder will use their best efforts to resolve such dispute within one Business Day following the receipt

of a Notice of Exercise. If such dispute cannot be resolved within such one-day period, the Company and the Holder shall submit the dispute to an independent accountant mutually agreed upon by the Company and the Holder to make a final and binding determination of the number of shares owed to the Holder. The Company shall issue shares of Common Stock owed to Holder as a result of the resolution of the dispute within two Business Days following the receipt of the accountant's independent determination.

1.2 REGULATION D RESTRICTIONS. The Holder hereof represents and warrants to the Company that it has acquired this Warrant and anticipates acquiring the shares of Common Stock issuable upon exercise of the Warrant solely for its own account for investment purposes and not with a view to or for resale of such securities unless such resale has been registered with the Commission or an applicable exemption is available therefor and provided that the Holder shall have furnished to the Company an opinion of counsel in form and substance reasonably satisfactory to the Company, to the effect that such transfer is exempt from the registration requirements of the Securities Act and any applicable state securities laws.

1.3 COMPANY ACKNOWLEDGMENT. The Company will, at the time of the exercise of this Warrant, upon request of the Holder hereof, acknowledge in writing its continuing obligation to afford to such Holder the registration rights to which such Holder shall continue to be entitled

3

after such exercise in accordance with the provisions of a Registration Rights Agreement dated the date hereof (the "Registration Rights Agreement").

1.4 LIMITATION ON EXERCISE. Notwithstanding the rights of the Holder to exercise all or a portion of this Warrant as described herein, such exercise rights shall be limited, solely to the extent set forth in the Purchase Agreement as if such provisions were specifically set forth herein. In addition, the number of shares of Common Stock issuable upon exercise of this Warrant is subject to reduction as specified in Section 10.3 of the Purchase Agreement.

2. DELIVERY OF STOCK CERTIFICATES, ETC., ON EXERCISE. As soon as practicable after the exercise of this Warrant, and in any event within three (3) Business Days thereafter, the Company at its expense (including the payment by it of any applicable issue, stamp or transfer taxes) will cause to be issued in the name of and delivered to the Holder thereof, or, to the extent permissible hereunder, to such other person as such Holder may direct, a certificate or certificates for the number of fully paid and nonassessable shares of Common Stock (or Other Securities) to which such Holder shall be entitled on such exercise, plus, in lieu of any fractional share to which such Holder would otherwise be entitled, cash equal to such fraction multiplied by the then applicable Purchase Price, together with any other stock or other securities and property (including cash, where applicable) to which such Holder is entitled upon such exercise pursuant to Section 1 or otherwise.

3. ADJUSTMENT FOR EXTRAORDINARY EVENTS. The Purchase Price to be paid by the Holder upon exercise of this Warrant, and the consideration to be received upon exercise of this Warrant, shall be adjusted in case at any time or from time to time pursuant to Article 11 of the Purchase Agreement as if such provisions were specifically set forth herein.

4. NO IMPAIRMENT. The Company will not, by amendment of its Certificate of Incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such action as may be necessary or appropriate in order to protect the rights of the Holder of this Warrant against impairment. Without limiting the generality of the foregoing, the Company (a) will not increase the par value of any shares of stock receivable on the exercise of this Warrant above the amount payable therefor on such exercise, (b) will take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and unassessable shares of stock on the exercise of this Warrant, and (c) will not transfer all or substantially all of its properties and assets to any other person (corporate or otherwise), or consolidate with or merge into any other person or permit any such person to consolidate with or merge into the Company

(if the Company is not the surviving person), unless such other person shall expressly assume in writing and will be bound by all the terms of this Warrant.

5. CERTIFICATE AS TO ADJUSTMENTS. In each case of any adjustment or readjustment in the shares of Common Stock (or Other Securities) issuable on the exercise of this Warrant, the Company will promptly cause its principal financial officer to compute such adjustment or readjustment in accordance with the terms of this Warrant and prepare a certificate setting forth such adjustment or

4

readjustment and showing in detail the facts upon which such adjustment or readjustment is based, including a statement of (a) the consideration received or receivable by the Company for any additional shares of Common Stock (or Other Securities) issued or sold or deemed to have been issued or sold, (b) the number of shares of Common Stock (or Other Securities) outstanding or deemed to be outstanding, and (c) the Purchase Price and the number of shares of Common Stock to be received upon exercise of this Warrant, in effect immediately prior to such issue or sale and as adjusted and readjusted as provided in this Warrant. The Company will forthwith mail a copy of each such certificate to the Holder of this Warrant, and will, on the written request at any time of the Holder of this Warrant, furnish to such Holder a like certificate setting forth the Purchase Price at the time in effect and showing how it was calculated.

6. NOTICES OF RECORD DATE, ETC.

In the event of

(a) any taking by the Company of a record of the Holders of any class of securities for the purpose of determining the Holders thereof who are entitled to receive any dividend or other distribution, or any right to subscribe for, purchase or otherwise acquire any shares of stock of any class or any other securities or property, or to receive any other right, or

(b) any capital reorganization of the Company, any reclassification or recapitalization of the capital stock of the Company or any transfer of all or substantially all the assets of the Company to or consolidation or merger of the Company with or into any other Person, or

(c) any voluntary or involuntary dissolution, liquidation or winding-up of the Company,

then and in each such event the Company will mail or cause to be mailed to the Holder of this Warrant a notice specifying (i) the date on which any such record is to be taken for the purpose of such dividend, distribution or right, and stating the amount and character of such dividend, distribution or right, and (ii) the date on which any such reorganization, reclassification, recapitalization, transfer, consolidation, merger, dissolution, liquidation or winding-up is to take place, and the time, if any, as of which the Holders of record of Common Stock (or Other Securities) shall be entitled to exchange their shares of Common Stock (or Other Securities) for securities or other property deliverable on such reorganization, reclassification, recapitalization, transfer, consolidation, merger, dissolution, liquidation or winding-up. Such notice shall be mailed at least 20 days prior to the date specified in such notice on which any action is to be taken.

7. RESERVATION OF STOCK, ETC. ISSUABLE ON EXERCISE OF WARRANT. The Company will at all times reserve and keep available, solely for issuance and delivery on the exercise of this Warrant, all shares of Common Stock (or Other Securities) from time to time issuable on the exercise of this Warrant.

5

8. EXCHANGE OF WARRANT. On surrender for exchange of this Warrant, properly endorsed and in compliance with the restrictions on transfer set forth in the legend on the face of this Warrant, to the Company, the Company at its expense will issue and deliver to or on the order of the Holder thereof a new Warrant of like tenor, in the name of such Holder or as such Holder (on payment by such Holder of any applicable transfer taxes) may direct, calling in the aggregate on the face or faces thereof for the number of shares of Common Stock

called for on the face of the Warrant so surrendered or for such lesser number of shares of Common Stock as may be reflected on the Warrant Exercise Ledger attached as Annex B.

9. REPLACEMENT OF WARRANT. On receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant and, in the case of any such loss, theft or destruction of this Warrant, on delivery of an indemnity agreement or security reasonably satisfactory in form and amount to the Company or, in the case of any such mutilation, on surrender and cancellation of this Warrant, the Company at its expense will execute and deliver, in lieu thereof, a new Warrant of like tenor.

10. REMEDIES. The Company stipulates that the remedies at law of the Holder of this Warrant in the event of any default or threatened default by the Company in the performance of or compliance with any of the terms of this Warrant are not and will not be adequate, and that such terms may be specifically enforced by a decree for the specific performance of any agreement contained herein or by an injunction against a violation of any of the terms hereof or otherwise.

11. NEGOTIABILITY, ETC.. This Warrant is issued upon the following terms, to all of which each Holder or owner hereof by the taking hereof consents and agrees:

(a) until this Warrant is transferred on the books of the Company, the Company may treat the registered Holder hereof as the absolute owner hereof for all purposes, notwithstanding any notice to the contrary; and

(b) this Warrant may not be sold, transferred or assigned except pursuant to an effective registration statement under the Securities Act or pursuant to an applicable exemption therefrom.

12. REGISTRATION RIGHTS. The Company is obligated to register the shares of Common Stock issuable upon exercise of this Warrant in accordance with the terms of the Registration Rights Agreement.

13. WARRANT REDEMPTION. Upon occurrence of the events described in Sections 3.4 and 10.4(c) of the Purchase Agreement, the Company, at the request of Holder, shall redeem all outstanding Warrants that remain unexercised at a redemption price equal to the greater of (x) an appraised value of the Warrants, as determined by Black Sholes, on the date they are called for redemption and (y) the number of Warrants being redeemed multiplied by the excess of (A) the average Closing Bid Price of the Common Stock for the five trading days immediately prior to the date that the Warrants are called for redemption over (B) the exercise price of the Warrants.

6

14. NOTICES, ETC. All notices and other communications from the Company to the Holder of this Warrant shall be mailed by first class registered or certified mail, postage prepaid, at such address as may have been furnished to the Company in writing by such Holder or, until any such Holder furnishes to the Company any address, then to, and at the address of, the last Holder of this Warrant who has so furnished an address to the Company.

15. MISCELLANEOUS. This Warrant and any term hereof may be changed, waived, discharged or terminated only by an instrument in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought. This Warrant shall be construed and enforced in accordance with and governed by the internal laws of the State of Massachusetts. The headings in this Warrant are for the purposes of reference only, and shall not limit or otherwise affect any of the terms hereof. The invalidity or unenforceability of any provision hereof shall in no way affect the validity or enforceability of any other provision.

7

DATED as of August 25, 2000.

BOSTON BIOMEDICA, INC.

By: /s/ Kevin W. Quinlan

Name: Kevin W. Quinlan
Title: President

8

EXHIBIT A

FORM OF NOTICE EXERCISE - WARRANT
(To be executed only upon exercise of the
Warrant in whole or in part)

To _____

The undersigned registered Holder of the accompanying Warrant, hereby exercises such Warrant or portion thereof for, and purchases thereunder, _____ (1) shares of Common Stock (as defined in such Warrant) and herewith makes payment therefor in the amount and manner set forth below, as of the date written below. The undersigned requests that the certificates for such shares of Common Stock be issued in the name of, and delivered to, _____ whose address is _____.

The Exercise Price is paid as follows:

- // Certified Bank draft payable to the Company in the amount of \$ _____.
- // Wire transfer to the account of the Company in the amount of \$ _____.

Upon exercise pursuant to this Notice of Exercise, the Holder will be in compliance with the Limitation on Exercise (as defined in the Securities Purchase Agreement pursuant to which this Warrant was issued).

The Holder of the shares of Common Stock received upon exercise of the Warrant (the "Common Shares"), covenants and agrees that the Common Shares are being acquired as an investment and not with a view to the distribution thereof in violation of the Securities Act and that the Common Shares may not be transferred, sold, assigned, hypothecated or otherwise disposed of, in whole or in part except as provided in the legend on the first page of this Warrant and provided that the Holder shall have furnished the Company an opinion of counsel in form and substance reasonably acceptable to the Company to the effect that such transfer is exempt from the registration requirements of the Securities Act and any applicable state securities laws.*

Date: _____

(Name must conform to name of Holder as specified on the face of the Warrant)

By: _____
Name: _____
Title: _____

Address of Holder: _____

Date of exercise: _____

* If shares of common Stock are to be issued to anyone other than the Holder, this covenant and representation must be made by such other Person.

(1) Insert the number of shares of Common Stock as to which the accompanying Warrant is being exercised. In the case of a partial exercise, a new Warrant or Warrants will be issued and delivered, representing the unexercised portion of the accompanying Warrant, to the Holder surrendering the same.

ANNEX B

WARRANT EXERCISE LEDGER

<TABLE>
<CAPTION>

DATE	ORIGINAL NUMBER OF WARRANTS	WARRANTS EXERCISED	EXERCISE PRICE PAID	NEW BALANCE OF WARRANTS	INITIALS	ISSUER INITIALS	HOLDER
<S>	<C>	<C>	<C>	<C>	<C>		

</TABLE>

BOSTON BIOMEDICA, INC.

HOLDER:

By: _____
Name: _____
Title: _____

By: _____
Name: _____
Title: _____

Exhibit 4.4

Warrant to DP Securities, Inc.

THIS COMMON STOCK PURCHASE WARRANT HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"). THE HOLDER HEREOF, BY PURCHASING THIS COMMON STOCK PURCHASE WARRANT, AGREES FOR THE BENEFIT OF THE COMPANY THAT SUCH SECURITIES MAY BE OFFERED, SOLD OR OTHERWISE TRANSFERRED ONLY (A) TO THE COMPANY, (B) PURSUANT TO AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT, OR (C) IF REGISTERED UNDER THE SECURITIES ACT AND ANY APPLICABLE STATE SECURITIES LAWS.

BOSTON BIOMEDICA, INC.

COMMON STOCK PURCHASE WARRANT

No. 3

Number of shares: 10,000 Holder: DP Securities, Inc.
Expiration Date: August 25, 2005 3655 Nobel Drive
 Suite 540
Purchase Price Per Share: \$3.60 San Diego, CA 92122

For identification only. The governing terms of this Warrant
are set forth below.

Boston Biomedica, Inc., a Massachusetts corporation (the "COMPANY"), hereby certifies that, for value received, DP Securities, Inc. or its assigns (the "HOLDER"), is entitled, subject to the terms set forth below, to purchase from the Company at any time or from time to time after the date hereof and prior to the fifth anniversary hereof (the "EXERCISE PERIOD"), at the Purchase Price hereinafter set forth, Ten Thousand (10,000) shares of the fully paid and nonassessable shares of common stock of the Company, \$0.01 par value per share (the "Common Stock"). The number and character of such shares of Common Stock and the Purchase Price are subject to adjustment as provided herein.

The purchase price per share of Common Stock issuable upon exercise of this Warrant (the "PURCHASE PRICE") shall initially be equal to 120% of the average Closing Bid Price as published by Bloomberg, L.P. of the Common Stock on the day immediately preceding the date hereof; PROVIDED, HOWEVER, that the Purchase Price shall be adjusted from time to time as provided herein.

Capitalized terms used herein not otherwise defined shall have the meanings ascribed thereto in that certain Securities Purchase Agreement of even date herewith between the Company and GCA Strategic Investment Fund Limited (the "Purchase Agreement"). By execution of this Warrant, the Holder hereof agrees to be bound by and to benefit from the provisions of the Purchase Agreement

1

set forth herein. As used herein the following terms, unless the context otherwise requires, have the following respective meanings:

(a) The term "COMPANY" shall include Boston Biomedica, Inc. and any corporation that shall succeed or assume the obligations of such corporation hereunder.

(b) The term "COMMON STOCK" includes (a) the Company's common stock, par value \$0.01 per share, (b) any other capital stock of any class or classes (however designated) of the Company, authorized on or after the date hereof, the Holders of which shall have the right, without limitation as to amount, either to all or to a share of the balance of current dividends and liquidating dividends after the payment of dividends and distributions on any shares entitled to preference, and the Holders of which shall ordinarily, in the absence of contingencies, be entitled to vote for the election of a majority of directors of the Company (even though the right so to vote has been

suspended by the happening of such a contingency) and (c) any other securities into which or for which any of the securities described in (a) or (b) may be converted or exchanged pursuant to a plan of recapitalization, reorganization, merger, sale of assets or otherwise.

(c) The term "OTHER SECURITIES" refers to any stock (other than Common Stock) and other securities of the Company or any other person (corporate or otherwise) that the Holder of this Warrant at any time shall be entitled to receive, or shall have received, on the exercise of this Warrant, in lieu of or in addition to Common Stock, or that at any time shall be issuable or shall have been issued in exchange for or in replacement of Common Stock or Other Securities pursuant to Section 4 or otherwise.

1. EXERCISE OF WARRANT.

1.1 METHOD OF EXERCISE.

(a) This Warrant may be exercised in whole or in part (but not as to a fractional share of Common Stock), at any time and from time to time during the Exercise Period by the Holder hereof by delivery of a notice of exercise (a "NOTICE OF EXERCISE") substantially in the form attached hereto as EXHIBIT A via facsimile to the Company. Prior to sending the Notice of Exercise via facsimile, the Holder shall give Richard Schumacher notice of its intent to submit a Notice of Exercise by telephone (and if Mr. Schumacher is not available to be reached by telephone, either Kevin Quinlan or Kathi Benjamin by telephone, or such other person designated by the Company after the Closing Date). Promptly thereafter the Holder shall surrender this Warrant (if the entire amount of the Warrant is subject to the Notice of Exercise) to the Company at its principal office via overnight delivery service, accompanied by payment of the Purchase Price multiplied by the number of shares of Common Stock for which this Warrant is being exercised (the "EXERCISE PRICE"). Payment of the Exercise Price shall be made, at the option of the Holder, (i) by check or bank draft payable to the order of the Company, or (ii) by wire transfer to the account of the Company. Upon exercise, the Holder shall be entitled to receive within three Trading Days of the Exercise Date (as defined herein), one or more certificates, issued in the Holder's name or

2

in such name or names as the Holder may direct, subject to the limitations on transfer contained herein, for the number of shares of Common Stock so purchased. The shares of Common Stock so purchased shall be deemed to be issued as of the close of business on the date on which the Company shall have received from the Holder payment in full of the Exercise Price (the "EXERCISE DATE").

(b) Upon exercise of a portion of this Warrant in accordance with the terms hereof, records showing the amount so exercised and the date of exercise shall be maintained on a ledger substantially in the form of ANNEX B attached hereto (an originally signed and executed copy of which shall be delivered to the Company with each Notice of Exercise). The Company shall maintain the originally signed and executed ledger and the Holder shall maintain a copy thereof. Upon execution of the exercise of the Warrants contemplated by the Notice of Exercise, the Company shall deliver to the Holder a copy of ANNEX B signed and executed by the Company, and the Holder shall deliver to the Company a copy of Annex B signed by the Holder. It is specifically contemplated that the Company shall act as the calculation agent for all exercises of this Warrant. The Holder and any assignee, by acceptance of this Warrant, acknowledges and agrees that, by reason of the provisions of this paragraph, following an exercise of a portion of this Warrant, the number of shares of Common Stock represented by this Warrant will be the amount indicated on ANNEX B attached hereto (which may be less than the amount stated on the face hereof).

(c) In the event there is a dispute as to the number of shares of Common Stock the Holder is entitled to receive upon exercise of this Warrant, the Company shall issue to the Holder the number of shares not in dispute and the Company and the Holder will use their best efforts to resolve such dispute within one Business Day following the receipt

of a Notice of Exercise. If such dispute cannot be resolved within such one-day period, the Company and the Holder shall submit the dispute to an independent accountant mutually agreed upon by the Company and the Holder to make a final and binding determination of the number of shares owed to the Holder. The Company shall issue shares of Common Stock owed to Holder as a result of the resolution of the dispute within two Business Days following the receipt of the accountant's independent determination.

1.2 REGULATION D RESTRICTIONS. The Holder hereof represents and warrants to the Company that it has acquired this Warrant and anticipates acquiring the shares of Common Stock issuable upon exercise of the Warrant solely for its own account for investment purposes and not with a view to or for resale of such securities unless such resale has been registered with the Commission or an applicable exemption is available therefor and provided that the Holder shall have furnished to the Company an opinion of counsel in form and substance reasonably satisfactory to the Company, to the effect that such transfer is exempt from the registration requirements of the Securities Act and any applicable state securities laws.

1.3 COMPANY ACKNOWLEDGMENT. The Company will, at the time of the exercise of this Warrant, upon request of the Holder hereof, acknowledge in writing its continuing obligation to afford to such Holder the registration rights to which such Holder shall continue to be entitled

3

after such exercise in accordance with the provisions of a Registration Rights Agreement dated the date hereof (the "Registration Rights Agreement").

1.4 LIMITATION ON EXERCISE. Notwithstanding the rights of the Holder to exercise all or a portion of this Warrant as described herein, such exercise rights shall be limited, solely to the extent set forth in the Purchase Agreement as if such provisions were specifically set forth herein. In addition, the number of shares of Common Stock issuable upon exercise of this Warrant is subject to reduction as specified in Section 10.3 of the Purchase Agreement.

2. DELIVERY OF STOCK CERTIFICATES, ETC., ON EXERCISE. As soon as practicable after the exercise of this Warrant, and in any event within three (3) Business Days thereafter, the Company at its expense (including the payment by it of any applicable issue, stamp or transfer taxes) will cause to be issued in the name of and delivered to the Holder thereof, or, to the extent permissible hereunder, to such other person as such Holder may direct, a certificate or certificates for the number of fully paid and nonassessable shares of Common Stock (or Other Securities) to which such Holder shall be entitled on such exercise, plus, in lieu of any fractional share to which such Holder would otherwise be entitled, cash equal to such fraction multiplied by the then applicable Purchase Price, together with any other stock or other securities and property (including cash, where applicable) to which such Holder is entitled upon such exercise pursuant to Section 1 or otherwise.

3. ADJUSTMENT FOR EXTRAORDINARY EVENTS. The Purchase Price to be paid by the Holder upon exercise of this Warrant, and the consideration to be received upon exercise of this Warrant, shall be adjusted in case at any time or from time to time pursuant to Article 11 of the Purchase Agreement as if such provisions were specifically set forth herein.

4. NO IMPAIRMENT. The Company will not, by amendment of its Certificate of Incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such action as may be necessary or appropriate in order to protect the rights of the Holder of this Warrant against impairment. Without limiting the generality of the foregoing, the Company (a) will not increase the par value of any shares of stock receivable on the exercise of this Warrant above the amount payable therefor on such exercise, (b) will take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and unassessable shares of stock on the exercise of this Warrant, and (c) will not transfer all or substantially all of its properties and assets to any other person (corporate or otherwise), or consolidate with or merge into any other person or permit any such person to consolidate with or merge into the Company

(if the Company is not the surviving person), unless such other person shall expressly assume in writing and will be bound by all the terms of this Warrant.

5. CERTIFICATE AS TO ADJUSTMENTS. In each case of any adjustment or readjustment in the shares of Common Stock (or Other Securities) issuable on the exercise of this Warrant, the Company will promptly cause its principal financial officer to compute such adjustment or readjustment in accordance with the terms of this Warrant and prepare a certificate setting forth such adjustment or

4

readjustment and showing in detail the facts upon which such adjustment or readjustment is based, including a statement of (a) the consideration received or receivable by the Company for any additional shares of Common Stock (or Other Securities) issued or sold or deemed to have been issued or sold, (b) the number of shares of Common Stock (or Other Securities) outstanding or deemed to be outstanding, and (c) the Purchase Price and the number of shares of Common Stock to be received upon exercise of this Warrant, in effect immediately prior to such issue or sale and as adjusted and readjusted as provided in this Warrant. The Company will forthwith mail a copy of each such certificate to the Holder of this Warrant, and will, on the written request at any time of the Holder of this Warrant, furnish to such Holder a like certificate setting forth the Purchase Price at the time in effect and showing how it was calculated.

6. NOTICES OF RECORD DATE, ETC.

In the event of

(a) any taking by the Company of a record of the Holders of any class of securities for the purpose of determining the Holders thereof who are entitled to receive any dividend or other distribution, or any right to subscribe for, purchase or otherwise acquire any shares of stock of any class or any other securities or property, or to receive any other right, or

(b) any capital reorganization of the Company, any reclassification or recapitalization of the capital stock of the Company or any transfer of all or substantially all the assets of the Company to or consolidation or merger of the Company with or into any other Person, or

(c) any voluntary or involuntary dissolution, liquidation or winding-up of the Company,

then and in each such event the Company will mail or cause to be mailed to the Holder of this Warrant a notice specifying (i) the date on which any such record is to be taken for the purpose of such dividend, distribution or right, and stating the amount and character of such dividend, distribution or right, and (ii) the date on which any such reorganization, reclassification, recapitalization, transfer, consolidation, merger, dissolution, liquidation or winding-up is to take place, and the time, if any, as of which the Holders of record of Common Stock (or Other Securities) shall be entitled to exchange their shares of Common Stock (or Other Securities) for securities or other property deliverable on such reorganization, reclassification, recapitalization, transfer, consolidation, merger, dissolution, liquidation or winding-up. Such notice shall be mailed at least 20 days prior to the date specified in such notice on which any action is to be taken.

7. RESERVATION OF STOCK, ETC. ISSUABLE ON EXERCISE OF WARRANT. The Company will at all times reserve and keep available, solely for issuance and delivery on the exercise of this Warrant, all shares of Common Stock (or Other Securities) from time to time issuable on the exercise of this Warrant.

5

8. EXCHANGE OF WARRANT. On surrender for exchange of this Warrant, properly endorsed and in compliance with the restrictions on transfer set forth in the legend on the face of this Warrant, to the Company, the Company at its expense will issue and deliver to or on the order of the Holder thereof a new Warrant of like tenor, in the name of such Holder or as such Holder (on payment by such Holder of any applicable transfer taxes) may direct, calling in the aggregate on the face or faces thereof for the number of shares of Common Stock

called for on the face of the Warrant so surrendered or for such lesser number of shares of Common Stock as may be reflected on the Warrant Exercise Ledger attached as Annex B.

9. REPLACEMENT OF WARRANT. On receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant and, in the case of any such loss, theft or destruction of this Warrant, on delivery of an indemnity agreement or security reasonably satisfactory in form and amount to the Company or, in the case of any such mutilation, on surrender and cancellation of this Warrant, the Company at its expense will execute and deliver, in lieu thereof, a new Warrant of like tenor.

10. REMEDIES. The Company stipulates that the remedies at law of the Holder of this Warrant in the event of any default or threatened default by the Company in the performance of or compliance with any of the terms of this Warrant are not and will not be adequate, and that such terms may be specifically enforced by a decree for the specific performance of any agreement contained herein or by an injunction against a violation of any of the terms hereof or otherwise.

11. NEGOTIABILITY, ETC.. This Warrant is issued upon the following terms, to all of which each Holder or owner hereof by the taking hereof consents and agrees:

(a) until this Warrant is transferred on the books of the Company, the Company may treat the registered Holder hereof as the absolute owner hereof for all purposes, notwithstanding any notice to the contrary; and

(b) this Warrant may not be sold, transferred or assigned except pursuant to an effective registration statement under the Securities Act or pursuant to an applicable exemption therefrom.

12. REGISTRATION RIGHTS. The Company is obligated to register the shares of Common Stock issuable upon exercise of this Warrant in accordance with the terms of the Registration Rights Agreement.

13. WARRANT REDEMPTION. Upon occurrence of the events described in Sections 3.4 and 10.4(c) of the Purchase Agreement, the Company, at the request of Holder, shall redeem all outstanding Warrants that remain unexercised at a redemption price equal to the greater of (x) an appraised value of the Warrants, as determined by Black Sholes, on the date they are called for redemption and (y) the number of Warrants being redeemed multiplied by the excess of (A) the average Closing Bid Price of the Common Stock for the five trading days immediately prior to the date that the Warrants are called for redemption over (B) the exercise price of the Warrants.

6

14. NOTICES, ETC. All notices and other communications from the Company to the Holder of this Warrant shall be mailed by first class registered or certified mail, postage prepaid, at such address as may have been furnished to the Company in writing by such Holder or, until any such Holder furnishes to the Company any address, then to, and at the address of, the last Holder of this Warrant who has so furnished an address to the Company.

15. MISCELLANEOUS. This Warrant and any term hereof may be changed, waived, discharged or terminated only by an instrument in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought. This Warrant shall be construed and enforced in accordance with and governed by the internal laws of the State of Massachusetts. The headings in this Warrant are for the purposes of reference only, and shall not limit or otherwise affect any of the terms hereof. The invalidity or unenforceability of any provision hereof shall in no way affect the validity or enforceability of any other provision.

7

DATED as of August 25, 2000.

BOSTON BIOMEDICA, INC.

By: /s/ Kevin W. Quinlan

Name: Kevin W. Quinlan
Title: President

8

EXHIBIT A

FORM OF NOTICE EXERCISE - WARRANT

(To be executed only upon exercise
of the Warrant in whole or in part)

To _____

The undersigned registered Holder of the accompanying Warrant, hereby exercises such Warrant or portion thereof for, and purchases thereunder, _____ (1) shares of Common Stock (as defined in such Warrant) and herewith makes payment therefor in the amount and manner set forth below, as of the date written below. The undersigned requests that the certificates for such shares of Common Stock be issued in the name of, and delivered to, _____ whose address is _____.
The Exercise Price is paid as follows:

- // Certified Bank draft payable to the Company in the amount of \$ _____.
- // Wire transfer to the account of the Company in the amount of \$ _____.

Upon exercise pursuant to this Notice of Exercise, the Holder will be in compliance with the Limitation on Exercise (as defined in the Securities Purchase Agreement pursuant to which this Warrant was issued).

The Holder of the shares of Common Stock received upon exercise of the Warrant (the "Common Shares"), covenants and agrees that the Common Shares are being acquired as an investment and not with a view to the distribution thereof in violation of the Securities Act and that the Common Shares may not be transferred, sold, assigned, hypothecated or otherwise disposed of, in whole or in part except as provided in the legend on the first page of this Warrant and provided that the Holder shall have furnished the Company an opinion of counsel in form and substance reasonably acceptable to the Company to the effect that such transfer is exempt from the registration requirements of the Securities Act and any applicable state securities laws.*

Date: _____

(Name must conform to name of Holder as specified on the face of the Warrant)
By:

Name:

Title:

Address of Holder:

Date of exercise: _____

* If shares of common Stock are to be issued to anyone other than the Holder, this covenant and representation must be made by such other Person.

(1) Insert the number of shares of Common Stock as to which the accompanying Warrant is being exercised. In the case of a partial exercise, a new Warrant or Warrants will be issued and delivered, representing the unexercised portion of the accompanying Warrant, to the Holder surrendering the same.

Exhibit 4.5

Registration Rights Agreement among Boston Biomedica, Inc.,
DP Securities, Inc., Wharton Capital Partners, Ltd.,
and GCA Strategic Investment Fund Limited

REGISTRATION RIGHTS AGREEMENT

REGISTRATION RIGHTS AGREEMENT (this "Agreement"), dated as of August 25, 2000, between Boston Biomedica, Inc., a Massachusetts corporation (the "Company"), and GCA Strategic Investment Fund Limited (the "Fund"), Wharton Capital Partners, Ltd. (Wharton") and DP Securities, Inc. ("DP").

1. INTRODUCTION.

1.1 SECURITIES PURCHASE AGREEMENT. The Company and the Fund have today executed that certain Securities Purchase Agreement (the "Securities Purchase Agreement"), pursuant to which the Company has agreed, among other things, to issue up to an aggregate of Two Million Two Hundred Fifty Thousand Dollars (\$2,250,000.00) (U.S.) principal amount of 3% Senior Subordinated Convertible Debentures of the Company (the "Debentures") to the Fund or its successors, assigns or transferees (collectively, the "holders"). The Debentures are convertible into an indeterminate number of shares (the "Debenture Conversion Shares") of the Company's common stock par value, \$0.01 per share (the "Common Stock") pursuant to the terms of the Debentures. In addition, pursuant to the terms of the Securities Purchase Agreement and the transactions contemplated thereby, the Company has agreed to issue to the Fund common stock purchase warrants exercisable for up to an aggregate of 80,000 shares of the Company's Common Stock and common stock purchase warrants exercisable for up to an aggregate of 10,000 shares of Common Stock to each of DP and Wharton (collectively the "Warrant Shares"). The number of Debenture Conversion Shares and Warrant Shares is subject to adjustment upon the occurrence of stock splits, recapitalizations and similar events occurring after the date hereof.

1.2 DEFINITION OF SECURITIES. The Debenture Conversion Shares and the Warrant Shares are herein referred to as the "Securities."

1.3 NATIONAL MARKET REPRESENTATION. The Company represents and warrants that the Company's Common Stock is currently eligible for trading on the Nasdaq National Market under the symbol "BBII." Certain capitalized terms used in this Agreement are defined in Section 3 hereof; references to sections shall be to sections of this Agreement.

2. REGISTRATION UNDER SECURITIES ACT, ETC.

1

2.1 MANDATORY REGISTRATION.

(a) REGISTRATION OF REGISTRABLE SECURITIES. The Company shall prepare and file on or before the 30th day following the date hereof (the "Filing Date") a registration statement (the "Registration Statement") covering the resale of the Registrable Securities. The Company shall use its best efforts to cause the Registration Statement to be declared effective by the Commission on the earlier of (i) 90 days following the date hereof, (ii) ten (10) days following the receipt of a "No Review" or similar letter from the Commission or (iii) the first business day following the day the Commission determines the Registration Statement eligible to be declared effective (the "Required Effectiveness Date"). Nothing contained herein shall be deemed to limit the number of Registrable Securities to be registered by the Company hereunder. As a result, should the Registration Statement not relate to the maximum number of Registrable Securities acquired by (or potentially acquirable by) the holders thereof upon conversion of the Debentures, or exercise of the Common Stock Purchase Warrants described in Section 1 above, the Company shall be required to promptly file a separate registration statement (utilizing Rule 462 promulgated under the Securities Act, where applicable) relating to such Registrable Securities which then remain unregistered. The provisions of this Agreement shall relate to any such Registration Statement and any such separate registration statement as if it were an amendment to the Registration Statement.

(b) REGISTRATION STATEMENT FORM. Registrations under this Section 2.1 shall be on Form S-3 or such other appropriate successor registration form of the Commission as shall permit the disposition of such Registrable Securities in accordance with the intended method or methods of disposition specified by the Fund; provided, however, such intended method of disposition shall not include an underwritten offering of the Registrable Securities.

(c) EXPENSES. The Company will pay all Registration Expenses in connection with any registration required by this Section 2.1.

(d) EFFECTIVE REGISTRATION STATEMENT. A registration pursuant to this Section 2.1 shall not be deemed to have been effected (i) unless a registration statement with respect thereto has become effective within the time period specified herein, provided that a registration which does not become effective after the Company filed a registration statement with respect thereto solely by reason of the refusal to proceed of any holder of Registrable Securities (other than a refusal to proceed based upon the advice of counsel in the form of a letter signed by such counsel and provided to the Company relating to a disclosure matter unrelated to such holder) shall be deemed to have been effected by the Company unless the holders of the Registrable Securities shall have elected to pay all Registration Expenses in connection with such registration, (ii) if, after it has become effective, such registration becomes subject to any stop order, injunction or other order or extraordinary requirement of the Commission or other governmental agency or court for any reason or (iii) if, after it has become effective, such registration ceases to be effective for more than an aggregate of twenty (20) days.

(e) PLAN OF DISTRIBUTION. The Company hereby agrees that the Registration Statement shall include a plan of distribution section reasonably acceptable to the Fund; provided, however, such plan of distribution section shall be modified by the Company so as to not provide for the disposition of the Registrable Securities on the basis of an underwritten offering.

2

2.2 INCIDENTAL REGISTRATION.

(a) RIGHT TO INCLUDE REGISTRABLE SECURITIES. If at any time after the date hereof but before the third anniversary of the date hereof, the Company proposes to register any of its securities under the Securities Act (other than by a registration in connection with an acquisition in a manner which would not permit registration of Registrable Securities for sale to the public, on Form S-8, or any successor form thereto, on Form S-4, or any successor form thereto and other than pursuant to Section 2.1), on an underwritten basis (either best-efforts or firm-commitment), then, the Company will each such time give prompt written notice to all holders of Registrable Securities of its intention to do so and of such holders' rights under this Section 2.2. Upon the written request of any such holder made within twenty (20) days after the receipt of any such notice (which request shall specify the Registrable Securities intended to be disposed of by such holder and the intended method of disposition thereof), the Company will, subject to the terms of this Agreement, use its commercially reasonable best efforts to effect the registration under the Securities Act of the Registrable Securities, to the extent requisite to permit the disposition (in accordance with the intended methods thereof as aforesaid) of such Registrable Securities so to be registered, by inclusion of such Registrable Securities in the registration statement which covers the securities which the Company proposes to register, provided that if, at any time after written notice of its intention to register any securities and prior to the effective date of the registration statement filed in connection with such registration, the Company shall determine for any reason either not to register or to delay registration of such securities, the Company may, at its election, give written notice of such determination to each holder and, thereupon, (i) in the case of a determination not to register, shall be relieved of this obligation to register any Registrable Securities in connection with such registration (but not from its obligation to pay the Registration Expenses in connection therewith), and (ii) in the case of a determination to delay registering, shall be permitted to delay registering any Registrable Securities, for the same period as the delay in registering such other securities. No registration effected under this Section 2.2 shall relieve the Company of its obligation to effect any registration under Section 2.1, nor

shall any such registration hereunder be deemed to have been effected pursuant to Section 2.1. The Company will pay all Registration Expenses in connection with each registration of Registrable Securities requested pursuant to this Section 2.2. The right provided the holders of the Registrable Securities pursuant to this Section shall be exercisable at their sole discretion.

(b) PRIORITY IN INCIDENTAL REGISTRATIONS. If the managing underwriter of the underwritten offering contemplated by this Section 2.2 shall inform the Company and holders of the Registrable Securities requesting such registration by letter of its belief that the number of securities requested to be included in such registration exceeds the number which can be sold in such offering, then the Company will include in such registration, to the extent of the number which the Company is so advised can be sold in such offering, (i) first securities proposed by the Company to be sold for its own account, and (ii) second Registrable Securities and securities of other selling security holders requested to be included in such registration pro rata on the basis of the number of shares of such securities so proposed to be sold and so requested to be included; provided, however, the holders of Registrable Securities shall have priority to all shares sought to be included by officers and directors of the Company as well as holders of ten percent (10%) or more of the Company's Common Stock.

3

2.3 REGISTRATION PROCEDURES. If and whenever the Company is required to effect the registration of any Registrable Securities under the Securities Act as provided in Section 2.1 and, as applicable, 2.2, the Company shall, as expeditiously as possible:

(a) prepare and file with the Commission the Registration Statement or amendments thereto, to effect such registration (including such audited financial statements as may be required by the Securities Act or the rules and regulations promulgated thereunder) and thereafter use its commercially reasonable best efforts to cause such registration statement to be declared effective by the Commission, as soon as practicable, but in any event no later than the Required Effectiveness Date (with respect to a registration pursuant to Section 2.1); provided, however, that before filing such registration statement or any amendments thereto, the Company will furnish to the counsel selected by the holders of Registrable Securities which are to be included in such registration, copies of all such documents proposed to be filed;

(b) with respect to any registration statement pursuant to Section 2.1, prepare and file with the Commission such amendments and supplements to such registration statement and the prospectus used in connection therewith as may be necessary to keep such registration statement effective and to comply with the provisions of the Securities Act with respect to the disposition of all Registrable Securities covered by such registration statement until the earlier to occur of five (5) years after the date of this Agreement (subject to the right of the Company to suspend the effectiveness thereof for not more than 10 consecutive days or an aggregate of 30 days in such five (5) years period) or such time as all of the securities which are the subject of such registration statement cease to be Registrable Securities (such period, in each case, the "Registration Maintenance Period");

(c) furnish to each seller of Registrable Securities covered by such registration statement such number of conformed copies of such registration statement and of each such amendment and supplement thereto (in each case including all exhibits), such number of copies of the prospectus contained in such registration statement (including each preliminary prospectus and any summary prospectus) and any other prospectus filed under Rule 424 under the Securities Act, in conformity with the requirements of the Securities Act, and such other documents, as such seller and underwriter, if any, may reasonably request in order to facilitate the public sale or other disposition of the Registrable Securities owned by such seller;

(d) use its commercially reasonable best efforts to register or qualify all Registrable Securities and other securities covered by such registration statement under such other securities laws or blue sky laws as any seller thereof shall reasonably request, to keep such registrations or qualifications in effect for so long as such registration statement remains in effect, and take any other action which may be reasonably necessary to enable such seller to consummate the disposition in such jurisdictions of the

securities owned by such seller, except that the Company shall not for any such purpose be required to qualify generally to do business as a foreign corporation in any jurisdiction wherein it would not but for the requirements of this subdivision (d) be obligated to be so qualified or to consent to general service of process in any such jurisdiction;

4

(e) use its commercially reasonable best efforts to cause all Registrable Securities covered by such registration statement to be registered with or approved by such other governmental agencies or authorities as may be necessary to enable the seller or sellers thereof to consummate the disposition of such Registrable Securities;

(f) furnish to each seller of Registrable Securities a signed counterpart, addressed to such seller, and the underwriters, if any, of:

(1) an opinion of counsel for the Company, dated the effective date of such registration statement (or, if such registration includes an underwritten public offering, an opinion dated the date of the closing under the underwriting agreement), reasonably satisfactory in form and substance to such seller including that the prospectus and any prospectus supplement forming a part of the Registration Statement does not contain an untrue statement of a material fact or omits a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading, and

(2) if such registration includes an underwritten public offering, a "comfort letter" dated the date of the closing and required to be delivered to the underwriter under the underwriting agreement, signed by the independent public accountants who have certified the Company's financial statements;

(g) notify the Sellers' Representative and its counsel promptly and confirm such advice in writing promptly after the Company has knowledge thereof:

(1) when the Registration Statement, the prospectus or any prospectus supplement related thereto or post-effective amendment to the Registration Statement has been filed, and, with respect to the Registration Statement or any post-effective amendment thereto, when the same has become effective;

(2) of any request by the Commission for amendments or supplements to the Registration Statement or the prospectus or for additional information;

(3) of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or the initiation of any proceedings by any Person for that purpose; and

(4) of the receipt by the Company of any notification with respect to the suspension of the qualification of any Registrable Securities for sale under the securities or blue sky laws of any jurisdiction or the initiation or threat of any proceeding for such purpose;

(h) notify each seller of Registrable Securities covered by such registration statement, at any time when a prospectus relating thereto is required to be delivered under the Securities Act, upon discovery that, or upon the happening of any event as a result of which, the prospectus included in such registration statement, as then in effect, includes an untrue statement of a material fact or omits to state any material facts required to be stated therein or

5

necessary to make the statements therein not misleading in the light of the circumstances then existing, and at the request of any such seller promptly prepare and furnish to such seller a reasonable number of copies of a supplement to or an amendment of such prospectus as may be necessary so that, as thereafter delivered to the purchasers of such securities, such prospectus shall not include an untrue statement of a material fact or omit to state a material fact

required to be stated therein or necessary to make the statements therein not misleading in the light of the circumstances then existing;

(i) use its commercially reasonable best efforts to obtain the withdrawal of any order suspending the effectiveness of the Registration Statement at the earliest possible moment;

(j) otherwise use its commercially reasonable best efforts to comply with all applicable rules and regulations of the Commission, and make available to its security holders, as soon as reasonably practicable, an earnings statement covering the period of at least twelve months, but not more than eighteen months, beginning with the first full calendar month after the effective date of such registration statement, which earnings statement shall satisfy the provisions of Section 11(a) of the Securities Act and Rule 158 thereunder;

(k) use its commercially reasonable best efforts to list all Registrable Securities covered by such registration statement on any securities exchange on which any of the Registrable Securities are then listed.

The Company may require each seller of Registrable Securities as to which any registration is being effected to furnish the Company such information regarding such seller and the distribution of such securities as the Company may from time to time reasonably request in writing.

The Company will not file any registration statement pursuant to Section 2.1, or amendment thereto or any prospectus or any supplement thereto (including such documents incorporated by reference and proposed to be filed after the initial filing of the Registration Statement) to which the Sellers' Representative shall reasonably object, provided that the Company may file such documents in a form required by law or upon the advice of its counsel.

The Company represents and warrants to each holder of Registrable Securities that it has obtained all necessary waivers, consents and authorizations necessary to execute this Agreement and consummate the transactions contemplated hereby other than such waivers, consents and/or authorizations specifically contemplated by the Securities Purchase Agreement.

The Fund agrees that, upon receipt of any notice from the Company of the occurrence of any event of the kind described in subdivision (h) of this Section 2.3, the Fund will forthwith discontinue the Fund's disposition of Registrable Securities pursuant to the Registration Statement relating to such Registrable Securities until such Fund's receipt of the copies of the supplemented or amended prospectus contemplated by subdivision (h) of this Section 2.3 and, if so directed by the Company, will deliver to the Company (at the Company's expense) all copies, other than permanent file copies,

6

then in the Fund's possession of the prospectus relating to such Registrable Securities current at the time of receipt of such notice.

2.4 UNDERWRITTEN OFFERINGS.

(a) INCIDENTAL UNDERWRITTEN OFFERINGS. If the Company at any time proposes to register any of its securities under the Securities Act as contemplated by Section 2.2 and such securities are to be distributed by or through one or more underwriters, the Company will, if requested by any holder of Registrable Securities as provided in Section 2.2 and subject to the provisions of Section 2.2(a), use its commercially reasonable best efforts to arrange for such underwriters to include all the Registrable Securities to be offered and sold by such holder among the securities to be distributed by such underwriters.

(b) HOLDBACK AGREEMENTS. Subject to such other reasonable requirements as may be imposed by the underwriter as a condition of inclusion of holder's Registrable Securities in the registration statement, each holder agrees by acquisition of Registrable Securities, if so required by the managing underwriter, not to sell, make any short sale of, loan, grant any option for the purchase of, effect any public sale or distribution of or otherwise dispose of, except as part of such underwritten registration, any equity securities of the Company, during such reasonable period of time requested by the underwriter; provided however, such period shall not exceed the

150 day period commencing 30 days prior to the commencement of such underwritten offering and ending 120 days following the completion of such underwritten offering.

(c) PARTICIPATION IN UNDERWRITTEN OFFERINGS. No holder of Registrable Securities may participate in any underwritten offering under Section 2.2 unless such holder of Registrable Securities (i) agrees to sell such Person's securities on the basis provided in any underwriting arrangements approved, subject to the terms and conditions hereof, approved by the Company and (ii) completes and executes all questionnaires, indemnities, underwriting agreements and other documents (other than powers of attorney) required under the terms of such underwriting arrangements. Notwithstanding the foregoing, no underwriting agreement (or other agreement in connection with such offering) shall require any holder of Registrable Securities to make any representations or warranties to or agreements with the Company or the underwriters other than representations and warranties contained in a writing furnished by such holder expressly for use in the related registration statement or representations, warranties or agreements regarding such holder, such holder's Registrable Securities and such holder's intended method of distribution and any other representation required by law.

2.5 PREPARATION; REASONABLE INVESTIGATION. In connection with the preparation and filing of each registration statement under the Securities Act pursuant to this Agreement, the Company will give Sellers' Representative and counsel and accountants for Sellers' Representative, the opportunity to participate in the preparation of such registration statement, each prospectus included therein or filed with the Commission, and each amendment thereof or supplement thereto, and will give each of them such access to its books and records and such opportunities to discuss the business of the Company with its officers and the independent public accountants who have certified its financial statements as shall be necessary, in the reasonable opinion of such holders' and such

7

underwriters' respective counsel, to conduct a reasonable investigation within the meaning of the Securities Act.

2.6 REGISTRATION DEFAULT FEE. If the Registration Statement contemplated in Section 2.1 is (x) not declared effective by the Required Effectiveness Date or (y) such effectiveness is not maintained for the Registration Maintenance Period, then the Company shall pay to the Fund the Default Fee specified in Section 10.4 of the Securities Purchase Agreement.

2.7 INDEMNIFICATION.

(a) INDEMNIFICATION BY THE COMPANY. In the event of any registration of any securities of the Company under the Securities Act, the Company will, and hereby does agree to indemnify and hold harmless the holder of any Registrable Securities covered by such registration statement, its directors and officers, each other Person who participates as an underwriter in the offering or sale of such securities and each other Person, if any, who controls such holder or any such underwriter within the meaning of the Securities Act against any losses, claims, damages or liabilities, joint or several, to which such holder or any such director or officer or underwriter or controlling person may become subject under the Securities Act or otherwise, insofar as such losses, claims, damages or liabilities (or actions or proceedings, whether commenced or threatened, in respect thereof) arise out of or are based upon any untrue statement or alleged untrue statement of any material fact contained in any registration statement under which such securities were registered under the Securities Act, any preliminary prospectus, final prospectus or summary prospectus contained therein, or any amendment or supplement thereto, or any omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, and the Company will reimburse such holder and each such director, officer, underwriter and controlling person for any legal or any other expenses reasonably incurred by them in connection with investigating or defending any such loss, claim, liability, action or proceeding, provided that the Company shall not be liable in any such case to the extent that any such loss, claim, damage, liability, (or action or proceeding in respect thereof) or expense arises out of or is based upon an untrue statement or alleged untrue statement or omission or alleged omission made in such registration statement, any such preliminary prospectus, final prospectus, summary prospectus, amendment or

supplement in reliance upon and in conformity with written information furnished to the Company by such holder or underwriter stating that it is for use in the preparation thereof and, provided further that the Company shall not be liable to any Person who participates as an underwriter in the offering or sale of Registrable Securities or to any other Person, if any, who controls such underwriter within the meaning of the Securities Act, in any such case to the extent that any such loss, claim, damage, liability (or action or proceeding in respect thereof) or expense arises out of such Person's failure to send or give a copy of the final prospectus, as the same may be then supplemented or amended, within the time required by the Securities Act to the Person asserting the existence of an untrue statement or alleged untrue statement or omission or alleged omission at or prior to the written confirmation of the sale of Registrable Securities to such Person if such statement or omission was corrected in such final prospectus or an amendment or supplement thereto. Such indemnity shall remain in full force and effect regardless of any investigation made by or on behalf of such holder or any such director, officer, underwriter or controlling person and shall survive the transfer of such securities by such holder.

8

(b) INDEMNIFICATION BY THE HOLDERS. The Company may require, as a condition to including any Registrable Securities in any registration statement filed pursuant to this Agreement, that the Company shall have received an undertaking satisfactory to it from the prospective seller of such Registrable Securities, to indemnify and hold harmless (in the same manner and to the same extent as set forth in subdivision (a) of this Section 2.7) the Company, each director of the Company, each officer of the Company and each other Person, if any, who controls the Company within the meaning of the Securities Act, with respect to any statement or alleged statement in or omission or alleged omission from such registration statement, any preliminary prospectus, final prospectus or summary prospectus contained therein, or any amendment or supplement thereto, if such statement or alleged statement or omission or alleged omission was made in reliance upon and in conformity with written information furnished to the Company through an instrument duly executed by such seller specifically stating that it is for use in the preparation of such registration statement, preliminary prospectus, final prospectus, summary prospectus, amendment or supplement. Any such indemnity shall remain in full force and effect, regardless of any investigation made by or on behalf of the Company or any such director, officer or controlling person and shall survive the transfer of such securities by such seller.

(c) NOTICES OF CLAIMS, ETC. Promptly after receipt by an indemnified party of notice of the commencement of any action or proceeding involving a claim referred to in the preceding subdivisions of this Section 2.7, such indemnified party will, if a claim in respect thereof is to be made against an indemnifying party, give written notice to the latter of the commencement of such action, provided that the failure of any indemnified party to give notice as provided herein shall not relieve the indemnifying party of its obligations under the preceding subdivisions of this Section 2.7, except to the extent that the indemnifying party is actually prejudiced by such failure to give notice. In case any such action is brought against an indemnified party, unless in the opinion of the indemnified party's counsel a conflict of interest between such indemnified and indemnifying parties may exist in respect of such claim, the indemnifying party shall be entitled to participate in and to assume the defense thereof, jointly with any other indemnifying party similarly notified, to the extent that the indemnifying party may wish, with counsel reasonably satisfactory to such indemnified party, and after notice from the indemnifying party to such indemnified party of its election so to assume the defense thereof, the indemnifying party shall not be liable to such indemnified party for any legal or other expenses subsequently incurred by the latter in connection with the defense thereof other than reasonable costs of investigation. No indemnifying party shall, without the consent of the indemnified party, consent to entry of any judgment or enter into any settlement of any such action which does not include as an unconditional term thereof the giving by the claimant or plaintiff to such indemnified party of a release from all liability, or a covenant not to sue, in respect to such claim or litigation. No indemnified party shall consent to entry of any judgment or enter into any settlement of any such action the defense of which has been assumed by an indemnifying party without the consent of such indemnifying party.

(d) OTHER INDEMNIFICATION. Indemnification similar to that specified in the preceding subdivisions of this Section 2.7 (with

appropriate modifications) shall be given by the Company and each seller of Registrable Securities (but only if and to the extent required pursuant

9

to the terms of Section 2.7(b)) with respect to any required registration or other qualification of securities under any Federal or state law or regulation of any governmental authority, other than the Securities Act.

(e) INDEMNIFICATION PAYMENTS. The indemnification required by this Section 2.7 shall be made by periodic payments of the amount thereof during the course of the investigation or defense, as and when bills are received or expense, loss, damage or liability is incurred.

(f) CONTRIBUTION. If the indemnification provided for in the preceding subdivision of this Section 2.7 is unavailable to an indemnified party in respect of any expense, loss, claim, damage or liability referred to therein, then each indemnifying party, in lieu of indemnifying such indemnified party, shall contribute to the amount paid or payable by such indemnified party as a result of such expense, loss, claim, damage or liability (i) in such proportion as is appropriate to reflect the relative benefits received by the Company on the one hand and the holder or underwriter, as the case may be, on the other from the distribution of the Registrable Securities or (ii) if the allocation provided by clause (i) above is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) above but also the relative fault of the Company on the one hand and of the holder or underwriter, as the case may be, on the other in connection with the statements or omissions which resulted in such expense, loss, damage or liability, as well as any other relevant equitable considerations. The relative benefits received by the Company on the one hand and the holder or underwriter, as the case may be, on the other in connection with the distribution of the Registrable Securities shall be deemed to be in the same proportion as the total net proceeds received by the Company from the initial sale of the Registrable Securities by the Company to the purchasers bear to the gain, if any, realized by all selling holders participating in such offering or the underwriting discounts and commissions received by the underwriter, as the case may be. The relative fault of the Company on the one hand and of the holder or underwriter, as the case may be, on the other shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or omission to state a material fact relates to information supplied by the Company, by the holder or by the underwriter and the parties' relative intent, knowledge, access to information supplied by the Company, by the holder or by the underwriter and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission, provided that the foregoing contribution agreement shall not inure to the benefit of any indemnified party if indemnification would be unavailable to such indemnified party by reason of the provisions contained in the first sentence of subdivision (a) of this Section 2.7, and in no event shall the obligation of any indemnifying party to contribute under this subdivision (f) exceed the amount that such indemnifying party would have been obligated to pay by way of indemnification if the indemnification provided for under subdivision (b) of this Section 2.7 had been available under the circumstances.

The Company and the holders of Registrable Securities agree that it would not be just and equitable if contribution pursuant to this subdivision (f) were determined by pro rata allocation (even if the holders and any underwriters were treated as one entity for such purpose) or by any other method of allocation that does not take account of the equitable considerations referred to in the

10

immediately preceding paragraph. The amount paid or payable by an indemnified party as a result of the losses, claims, damages and liabilities referred to in the immediately preceding paragraph shall be deemed to include, subject to the limitations set forth in the preceding sentence and subdivision (c) of this Section 2.7, any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending any such action or claim.

Notwithstanding the provisions of this subdivision (f), no holder of Registrable Securities or underwriter shall be required to contribute any amount in excess of the amount by which (i) in the case of any such holder, the net

proceeds received by such holder from the sale of Registrable Securities or (ii) in the case of an underwriter, the total price at which the Registrable Securities purchased by it and distributed to the public were offered to the public exceeds, in any such case, the amount of any damages that such holder or underwriter has otherwise been required to pay by reason of such untrue or allege untrue statement or omission. No Person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation.

3. DEFINITIONS. As used herein, unless the context otherwise requires, the following terms have the following respective meanings:

"AGREEMENT": As defined in Section 1.

"COMMISSION": The Securities and Exchange Commission or any other Federal agency at the time administering the Securities Act.

"COMMON STOCK": As defined in Section 1.

"COMPANY": As defined in the introductory paragraph of this Agreement.

"DEBENTURE CONVERSION SHARES": As defined in Section 1.

"DEBENTURES": As defined in Section 1, such term to include any securities issued in substitution of or in addition to such Debentures.

"EXCHANGE ACT": The Securities Exchange Act of 1934, as amended, and the rules and regulations of the Commission promulgated thereunder.

"PERSON": A corporation, association, partnership, limited liability company, trust, organization, business, individual, governmental or political subdivision thereof or a governmental agency.

"REGISTRABLE SECURITIES": The Securities and any securities issued or issuable with respect to such Securities by way of stock dividend or stock split or in connection with a combination of shares, recapitalization, merger, consolidation or other reorganization or otherwise. Once issued such securities shall cease to be Registrable Securities when (a) a registration statement with respect to the sale of such securities shall have become effective under the Securities Act and

11

such securities shall have been disposed of in accordance with such registration statement, (b) they shall have been distributed to the public pursuant to Rule 144 (or any successor provision) under the Securities Act, (c) they shall have been otherwise transferred, new certificates for them not bearing a legend restricting further transfer shall have been delivered by the Company and subsequent disposition of them shall not require registration or qualification of them under the Securities Act or any similar state law then in force, (d) they shall have ceased to be outstanding, (e) on the expiration of the applicable Registration Maintenance Period or (f) any and all legends restricting transfer thereof have been removed in accordance with the provisions of Rule 144(k) (or any successor provision) under the Securities Act.

"REGISTRATION EXPENSES": All expenses incident to the Company's performance of or compliance with this Agreement, including, without limitation, all registration, filing and NASD fees, all stock exchange and OTC Bulletin Board or other NASD or stock exchange listing fees, all fees and expenses of complying with securities or blue sky laws, all word processing, duplicating and printing expenses, messenger and delivery expenses, the fees and disbursements of counsel for the Company and of its independent public accountants, including the expenses of any special audits or "cold comfort" letters required by or incident to such performance and compliance, the reasonable fees and disbursements of not more than one law firm (not to exceed \$20,000) retained by the holder or holders of more than 50% of the Registrable Securities, premiums and other costs of policies of insurance of the Company against liabilities arising out of the public offering of the Registrable Securities being registered and any fees and disbursements of underwriters customarily paid by issuers or sellers of securities, but excluding underwriting discounts and commissions and transfer taxes, if any, provided that, in any case where

Registration Expenses are not to be borne by the Company, such expenses shall not include salaries of Company personnel or general overhead expenses of the Company, auditing fees, premiums or other expenses relating to liability insurance required by underwriters of the Company or other expenses for the preparation of financial statements or other data normally prepared by the Company in the ordinary course of its business or which the Company would have incurred in any event.

"REGISTRATION MAINTENANCE PERIOD": As defined in Section 2.3.

"REQUIRED EFFECTIVENESS DATE": As defined in Section 2.1.

"SECURITIES": As defined in Section 1.2.

"SECURITIES ACT": The Securities Act of 1933, as amended, and the rules and regulations of the Commission promulgated thereunder.

"SECURITIES PURCHASE AGREEMENT": As defined in Section 1.

"SELLERS' REPRESENTATIVE": Global Capital Advisors Ltd. or such Person designated by Global Capital Advisors Ltd. as of the time of disposition of the last of the Debentures held by the Fund (or subsequent Sellers' Representative).

"WARRANT SHARES": As defined in Section 1.

12

4. RULE 144. The Company shall timely file the reports required to be filed by it under the Securities Act and the Exchange Act (including but not limited to the reports under Sections 13 and 15(d) of the Exchange Act referred to in subparagraph (c) of Rule 144 adopted by the Commission under the Securities Act) and the rules and regulations adopted by the Commission thereunder (or, if the Company is not required to file such reports, will, upon the request of any holder of Registrable Securities, make publicly available other information) and will take such further action as any holder of Registrable Securities may reasonably request, all to the extent reasonably required from time to time to enable such holder to sell Registrable Securities without registration under the Securities Act within the limitation of the exemptions provided by (a) Rule 144 under the Securities Act, as such Rule may be amended from time to time, or (b) any similar rule or regulation hereafter adopted by the Commission. Upon the request of any holder of Registrable Securities, the Company will deliver to such holder a written statement as to whether it has complied with the requirements of this Section 4.

5. AMENDMENTS AND WAIVERS. This Agreement may be amended and the Company may take any action herein prohibited, or omit to perform any act herein required to be performed by it, only if the Company shall have obtained the written consent to such amendment, action or omission to act, of the holder or holders of the sum of 51% or more of the shares of (i) Registrable Securities issued at such time, plus (ii) Registrable Securities issuable upon exercise or conversion of the Securities then constituting derivative securities (if such Securities were not fully exchanged or converted in full as of the date such consent is sought). Each holder of any Registrable Securities at the time or thereafter outstanding shall be bound by any consent authorized by this Section 5, whether or not such Registrable Securities shall have been marked to indicate such consent.

6. NOMINEES FOR BENEFICIAL OWNERS. In the event that any Registrable Securities are held by a nominee for the beneficial owner thereof, the beneficial owner thereof may, at its election, be treated as the holder of such Registrable Securities for purposes of any request or other action by any holder or holders of Registrable Securities pursuant to this Agreement or any determination of any number of percentage of shares of Registrable Securities held by an holder or holders of Registrable Securities contemplated by this Agreement. If the beneficial owner of any Registrable Securities so elects, the Company may require assurances reasonably satisfactory to it of such owner's beneficial ownership of such Registrable Securities.

7. NOTICES. Except as otherwise provided in this Agreement, all notices, requests and other communications to any Person provided for hereunder shall be in writing and shall be given to such Person (a) in the case of a party hereto other than the Company, addressed to such party in the manner set forth

in the Securities Purchase Agreement or at such other address as such party shall have furnished to the Company in writing, or (b) in the case of any other holder of Registrable Securities, at the address that such holder shall have furnished to the Company in writing, or, until any such other holder so furnishes to the Company an address, then to and at the address of the last holder of such Registrable Securities who has furnished an address to the Company, or (c) in the case of the Company, at the address set forth on the signature page hereto, to the attention of its President, or at such other address, or to the attention of such other officer, as the Company shall have furnished to each holder of Registrable Securities at the time outstanding. Each such notice, request

13

or other communication shall be effective (i) if given by mail, four (4) days after such communication is deposited in the United States mails with first class postage prepaid, addressed as aforesaid or (ii) if given by any other means (including, without limitation, by fax or air courier), when delivered at the address specified above, provided that any such notice, request or communication shall not be effective until received.

8. ASSIGNMENT. This Agreement shall be binding upon and inure to the benefit of and be enforceable by the parties hereto. In addition, and whether or not any express assignment shall have been made, the provisions of this Agreement which are for the benefit of the parties hereto other than the Company shall also be for the benefit of and enforceable by any subsequent holder of any Registrable Securities. Each of the holders of the Registrable Securities agrees, by accepting any portion of the Registrable Securities after the date hereof, to the provisions of this Agreement including, without limitation, appointment of the Sellers' Representative to act on behalf of such holder pursuant to the terms hereof which such actions shall be made in the good faith discretion of the Sellers' Representative and be binding on all persons for all purposes.

9. DESCRIPTIVE HEADINGS. The descriptive headings of the several sections and paragraphs of this Agreement are inserted for reference only and shall not limit or otherwise affect the meaning hereof.

10. GOVERNING LAW. THIS AGREEMENT SHALL BE CONSTRUED AND ENFORCED IN ACCORDANCE WITH, AND THE RIGHTS OF THE PARTIES SHALL BE GOVERNED BY, THE LAWS OF THE STATE OF MASSACHUSETTS WITHOUT REFERENCE TO THE PRINCIPLES OF CONFLICTS OF LAWS.

11. COUNTERPARTS. This Agreement may be executed by facsimile and may be signed simultaneously in any number of counterparts, each of which shall be deemed an original, but all such counterparts shall together constitute one and the same instrument.

12. ENTIRE AGREEMENT. This Agreement embodies the entire agreement and understanding between the Company and each other party hereto relating to the subject matter hereof and supercedes all prior agreements and understandings relating to such subject matter.

13. SEVERABILITY. If any provision of this Agreement, or the application of such provisions to any Person or circumstance, shall be held invalid, the remainder of this Agreement, or the application of such provision to Persons or circumstances other than those to which it is held invalid, shall not be affected thereby.

[SIGNATURE PAGE FOLLOWS]

14

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed and delivered by their respective officers thereunto duly authorized as of the date first above written.

BOSTON BIOMEDICA, INC.

By: /s/ Kevin W. Quinlan

Name: Kevin W. Quinlan
Title: President

Address: Boston Biomedica, Inc.
375 West Street
Bridgewater, MA 02379

Fax: (508) 580-1110
Tel.: (508) 580-1900

GCA STRATEGIC INVESTMENT FUND LIMITED

By: /s/ Lewis N. Lester

Name: Lewis N. Lester
Title: Director
Address: c/o Prime Management Limited
Mechanics Building
12 Church Street
Hamilton HM II, Bermuda
Fax: 441-295-3926
Tel.: 441-295-0329

WHARTON CAPITAL PARTNERS, LTD.

By: /s/ Barry Minsky

Name: Barry Minsky

Title: Chief Executive Officer

Address: 545 Madison Ave., New York City, NY 10022

Fax: (212) 888-7054

Tel.: (212) 765-6777

DP SECURITIES, INC.

By: /s/ Brian M. Overstreet

Name: Brian M. Overstreet

Title: Vice President

Address: 3655 Nobel Drive, Suite 540
San Diego, CA 92122

Fax: (858) 623-1601

Tel.: (858) 623-1600

Exhibit 4.6

Senior Subordinated Convertible Debenture to Richard P. Kiphart

THE SECURITIES REPRESENTED HEREBY HAVE NOT BEEN REGISTERED UNDER THE UNITED STATES SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"). THE HOLDER HEREOF, BY PURCHASING SUCH SECURITIES AGREES FOR THE BENEFIT OF THE COMPANY THAT SUCH SECURITIES MAY BE OFFERED, SOLD OR OTHERWISE TRANSFERRED ONLY (A) TO THE COMPANY, (B) PURSUANT TO AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT, OR (C) IF REGISTERED UNDER THE SECURITIES ACT AND ANY APPLICABLE STATE SECURITIES LAWS. IN ADDITION, A SECURITIES PURCHASE AGREEMENT, DATED AS OF THE DATE HEREOF, A COPY OF WHICH MAY BE OBTAINED FROM THE COMPANY AT ITS PRINCIPAL EXECUTIVE OFFICE, CONTAINS CERTAIN ADDITIONAL AGREEMENTS AMONG THE PARTIES, INCLUDING, WITHOUT LIMITATION, PROVISIONS WHICH (A) LIMIT THE CONVERSION RIGHTS OF THE HOLDER, (B) SPECIFY VOLUNTARY AND MANDATORY REPAYMENT, PREPAYMENT AND REDEMPTION RIGHTS AND OBLIGATIONS AND (C) SPECIFY EVENTS OF DEFAULT FOLLOWING WHICH THE REMAINING BALANCE DUE AND OWING HEREUNDER MAY BE ACCELERATED.

No. 2 \$780,000.00

3% SENIOR SUBORDINATED CONVERTIBLE DEBENTURE
of

Boston Biomedica, Inc., a Massachusetts corporation (together with its successors, the "Company"), for value received hereby promises to pay to:

RICHARD P. KIPHART

(The "Holder") and registered assigns, the principal sum of \$780,000.00 or, if less, the principal amount of this Senior Subordinated Convertible Debenture (this "Convertible Debenture") then outstanding, on the Maturity Date by wire transfer of immediately available funds to the Holder in such coin or currency of the United States of America as at the time of payment shall be legal tender for the payment of public and private debts, and to pay interest which shall accrue beginning the date hereof, quarterly in arrears, on (i) the last day of March, June, September and December of each year until the Maturity Date, commencing September 30, 2000 (unless such day is not a Business Day, in which event on the next succeeding Business Day) (each an "Interest Payment Date"), (ii) the Maturity Date, (iii) each Conversion Date, as hereafter defined, and (iv) the date the principal

amount of the Convertible Debentures shall be declared to be or shall automatically become due and payable, on the principal sum hereof outstanding in like coin or currency, at the rates per annum set forth below, from the most recent Interest Payment Date to which interest has been paid on this Convertible Debenture, or if no interest has been paid on this Convertible Debenture, from the date of this Convertible Debenture until payment in full of the principal sum hereof has been made. The Maturity Date is August 25, 2003.

The interest rate shall be three percent (3%) per annum (the "Interest Rate") or, if less, the maximum rate permitted by applicable law. Past due amounts (including interest, to the extent permitted by law) will also accrue interest at the Interest Rate plus 2% per annum or, if less, the maximum rate permitted by applicable law, and will be payable on demand ("Default Interest"). Interest on this Convertible Debenture will be calculated on the basis of a 360-day year of twelve 30 day months. All payments of principal and interest hereunder shall be made for the benefit of the Holder pursuant to the terms of the Agreement (hereafter defined). At the option of the Company, interest may be paid in cash or in shares of Common Stock. If the Company determines to pay interest in shares of Common Stock, it shall be required to notify the Holder of such election on the Closing Date. On each Conversion Date, interest shall be paid in shares of Common Stock on the portion of the principal balance of the Convertible Debenture then being converted. The number of shares of Common Stock issued as interest shall be determined by dividing the dollar amount of interest due on the applicable Interest Payment Date by the Conversion Price then in effect.

This Convertible Debenture is a duly authorized issuance of Convertible

Debentures of the Company referred to in that certain Securities Purchase Agreement dated as of the date hereof between the Company and the Purchaser named therein (the "Agreement"). The Agreement contains certain additional agreements among the parties with respect to the terms of this Convertible Debenture, including, without limitation, provisions which (A) limit the conversion rights of the Holder, (B) specify voluntary and mandatory repayment, prepayment and redemption rights and obligations and (C) specify Events of Default following which the remaining balance due and owing hereunder may be accelerated. All such provisions are an integral part of this Convertible Debenture and are incorporated herein by reference. This Convertible Debenture is transferable and assignable to one or more Persons, in accordance with the limitations set forth in the Agreement.

This Convertible Debenture shall rank senior to any indebtedness of the Company except (a) the Company's outstanding credit facility with Fleet Bank and any successor thereof, including increases to such credit facility; (b) the Company's mortgage loan with Commerce Bank; and (c) any future sale and lease back transaction in connection with the Company's headquarters building in West Bridgewater, MA, to which it shall be junior in ranking. This Convertible Debenture shall rank on a pari passu basis with the Company's outstanding 3% convertible debentures.

The Company shall keep a register (the "Register") in which shall be entered the names and addresses of the registered holder of this Convertible Debenture and particulars of this Convertible

2

Debenture held by such holder and of all transfers of this Convertible Debenture. References to the Holder or "Holders" shall mean the Person listed in the Register as registered holder of such Convertible Debentures. The ownership of this Convertible Debenture shall be proven by the Register.

1. CERTAIN TERMS DEFINED. All terms defined in the Agreement and not otherwise defined herein shall have for purposes hereof the meanings provided for in the Agreement.

2. COMPANY COVENANTS. The Company covenants and agrees to observe and perform each of its covenants, obligations and undertakings contained in the Agreement, which obligations and undertakings are expressly assumed herein by the Company and made for the benefit of the holder hereof.

3. PAYMENT OF PRINCIPAL. The Company shall repay the remaining unpaid balance of this Convertible Debenture on the Maturity Date. The Company may, and shall be obligated to, prepay all or a portion of this Convertible Debenture on the terms specified in the Agreement.

4. CONVERSION.

4.1 CONVERSION OF CONVERTIBLE DEBENTURE. Subject to Section 5 hereof, the Holder shall have the right, at its option, at any time from and after the 90th day following the date of issuance of this Convertible Debenture, to convert the principal amount of this Convertible Debenture, or any portion of such principal amount, into that number of fully paid and nonassessable shares of Common Stock (as such shares shall then be constituted) determined pursuant to this Section 4.1. The number of shares of Common Stock to be issued upon each conversion of this Convertible Debenture shall be determined by dividing the Conversion Amount (as defined below) by the Conversion Price in effect on the date (the "Conversion Date") a Notice of Conversion is delivered to the Company, as applicable, by the Holder by facsimile dispatched prior to 5:00 p.m., E.S.T. Prior to sending the facsimile Notice of Conversion to the Company, the Holder shall notify the Company of such conversion by telephone to one of the following individuals on the following order of priority: (1) Richard T. Schumacher, (2) Kevin Quinlan and (3) Kathi Benjamin (or to each of the individual's voicemail if none of the individuals is available) as set forth in Section 4.4 hereto. The Company may change the individuals to whom such telephone notice shall be directed by notifying the Holder of any such change. The term "Conversion Amount" means, with respect to any conversion of this Convertible Debenture, the sum of (1) the principal amount of this Convertible Debenture to be converted in such conversion plus (2) accrued and unpaid interest, if any, on such

principal amount at the interest rates provided in this Convertible Debenture to the Conversion Date plus (3) Default Interest, if any, on the interest referred to in the immediately preceding clause (2) plus (4) at the Holder's option, any amounts owed to the Holder pursuant to Section 4.3 hereof, Section 10.1 of the Agreement or Section 10.4 of the Agreement.

3

4.2 CONVERSION PRICE. At the option of the Holder, any portion or all of the outstanding principal amount of this Convertible Debenture shall be converted into a number of shares of Common Stock at the conversion price (the "Conversion Price") equal to the lesser of (i) 110% of the volume weighted average sales price of the Common Stock, as reported by Bloomberg L.P. on the day immediately preceding the Closing Date (the "Fixed Conversion Price") and (ii) 90% of the average of the five (5) lowest volume weighted average sales prices of the Common Stock as reported by Bloomberg L.P. during the 25 Trading Days immediately preceding but not including the date of the related Notice of Conversion (the "Formula Conversion Price").

4.3 AUTHORIZED SHARES.

(1) Consistent with Section 7.11 of the Agreement, the Company (i) shall promptly irrevocably instruct the Company's transfer agent to issue certificates for the Common Stock issuable upon conversion of this Convertible Debenture and (ii) agrees that its issuance of this Convertible Debenture shall constitute full authority to its officers and agents who are charged with the duty of executing stock certificates to execute and issue the necessary certificates for shares of Common Stock in accordance with the terms and conditions of this Convertible Debenture.

(2) If at any time a Holder of this Convertible Debenture submits a Notice of Conversion (x) the Company does not have sufficient authorized but unissued shares of Common Stock available to effect such conversion in full in accordance with the provisions of this Article 4 or (y) the Company is prohibited by the applicable rules of the OTC Bulletin Board or the National Market on which the shares of Common Stock are listed and traded at that time to effect such conversion in full as provided in subsection (3) below, without stockholder approval (each, a "Conversion Default"), the Company shall issue to the Holder all of the shares of Common Stock which are then available to effect such conversion. The portion of this Convertible Debenture which the Holder included in its Conversion Notice and which exceeds the amount which is then convertible into available shares of Common Stock (the "Excess Amount") shall, notwithstanding anything to the contrary contained herein, not be convertible into Common Stock in accordance with the terms hereof until (and at the Holder's option at any time after) the date additional shares of Common Stock are authorized by the Company, or its stockholders, as applicable, at which time the Conversion Price in respect thereof shall be the lower of (i) the Conversion Price on the Conversion Default Date (as defined below) and (ii) the Conversion Price on the Conversion Date thereafter elected by the Holder in respect thereof. The Company shall pay to the Holder payments ("Conversion Default Payments") for a Conversion Default in the amount of $(N/365) \times .24 \times$ the Excess Amount on the Conversion Date in respect of the Conversion Default (the "Conversion Default Date"), where N = the number of days from the Conversion Default Date to the date (the "Authorization Date") that the Company, or its stockholders,

4

as applicable, authorizes a sufficient number of shares of Common Stock to effect conversion of the full outstanding principal balance of this Convertible Debenture or until the Company redeems the Excess Amount in accordance with the terms of this Convertible Debenture. The Company shall use its best efforts to authorize, or cause its stockholders to authorize within 40 days of the occurrence of a Conversion Default, as applicable, a sufficient number of shares of Common Stock as soon as practicable following the earlier

of (i) such time that the Holder notifies the Company or that the Company otherwise becomes aware that there are or likely will be insufficient shares to allow full conversion thereof and (ii) a Conversion Default. The Company shall send notice to the Holder of the authorization of additional shares of Common Stock, the Authorization Date and the amount of Holder's accrued Conversion Default Payments. The accrued Conversion Default Payments for each calendar month shall be paid in cash or shares of Common Stock (at such time as there are sufficient authorized shares of Common Stock) at the Holder's option, as follows:

(a) In the event the Holder elects to take such payment in cash, cash payment shall be made to Holder by the fifth Business Day of the month following the month in which it has accrued; and

(b) In the event the Holder elects to take such payment in Common Stock, the Holder may convert such payment amount into Common Stock at the Conversion Price (as in effect at the time of payment) at any time after the fifth Business Day of the month following the month in which it has accrued (at such time as there are sufficient authorized shares of Common Stock) in accordance with the terms of this Article 4.

(3) The Holder's election pursuant to this Section 4.3 shall be made in writing to the Company at any time prior to 5:00 p.m., E.S.T., on the third Business Day of the month following the month in which Conversion Default payments have accrued. If no election is made, the Holder shall be deemed to have elected to receive cash. Nothing herein shall limit the Holders right to pursue actual damages (to the extent in excess of the Conversion Default Payments) due to the Company's failure to maintain a sufficient number of authorized shares of Common Stock.

(4) In no event shall the Company issue more than the Maximum Number of Shares upon conversion of this Convertible Debenture, unless the Company shall have obtained approval by the stockholders of the Company ("Stockholder Approval") or a waiver of such requirement by the OTC Bulletin Board or the National Market on which the shares of Common Stock are listed and traded at that time. Once the Maximum Number of Shares has been issued (the date of which is hereinafter referred to as the "Maximum Conversion Date"), unless the Company shall have obtained Stockholder Approval or a waiver of such requirement by the OTC Bulletin Board or the National Market on which the shares of Common Stock are listed and traded at that time within 40 days of the Maximum Conversion

5

Date, the Company shall pay to the Holder within five (5) Business Days of the Maximum Conversion Date (or, if the Company is, in good faith, using its best efforts to obtain Stockholder Approval, then the earlier of (x) 40 days following the Maximum Conversion Date, and (y) such date that it becomes reasonably apparent that Stockholder Approval will not be obtained within such 40 days period), the Redemption Price for the Excess Amount plus accrued and unpaid Default Interest, if any.

(5) The Maximum Number of Shares shall be subject to adjustment from time to time for stock splits, stock dividends, combinations, capital reorganizations and similar events relating to the Common Stock occurring after the date hereof as contemplated by Article 11 of the Agreement. With respect to each Holder of Convertible Debentures, the Maximum Number of Shares shall refer to such Holder's pro rata share thereof based upon the aggregate principal balance of the Convertible Debentures then outstanding. In the event that the Company obtains Stockholder Approval, approval of the OTC Bulletin Board or the National Market on which the shares of Common Stock are listed and traded at that time, or otherwise is able to increase the number of shares to be issued above the Maximum Number of Shares (such increased number being the "New Maximum Number of Shares"), the references to Maximum Number of Shares above shall be deemed to be, instead, references to the New Maximum Number of Shares.

4.4 METHOD OF CONVERSION.

(1) Prior to sending the Notice of Conversion via facsimile as set forth in Section 4.1 hereof, the Holder shall give notice to Richard T. Schumacher by telephone (and if Mr. Schumacher is not available to be reached by telephone, either Kevin Quinlan or Kathi Benjamin by telephone, or such other person designated by the Company after the Closing Date) that the Holder intends to submit a Notice of Conversion on such date. Notwithstanding anything to the contrary set forth herein, upon conversion of this Convertible Debenture in accordance with the terms hereof, the Holder shall not be required to physically surrender this Convertible Debenture to the Company unless the entire unpaid principal amount of this Convertible Debenture is so converted. Rather, the Holder shall send to the Company, and the Company shall send to the Holder, via overnight delivery service (a) the originally signed and executed Notice of Conversion and (b) an originally signed and executed ANNEX A to this Convertible Debenture indicating the amounts to be converted and the new principal balance of this Convertible Debenture taking into account the Notice of Conversion. The Company shall keep as part of its records the originally executed ledger and the Holder shall maintain a copy thereof. Upon execution of the conversion contemplated by the Notice of Conversion, the Company and the Holder shall deliver to one another an executed copy of ANNEX A. It is specifically contemplated that the Company shall act as the calculation agent for conversions and repayments. In the event there is a dispute as to the number of shares of Common Stock the Holder is entitled to receive upon a conversion of this Convertible Debenture (or the amount of cash to be

6

received upon repayment or redemption of this Convertible Debenture), the amount of any payments due upon an Event of Default under this Convertible Debenture or the calculation of any of the foregoing, the Holder and the Company agree that (i) the Company shall issue to the Holder the undisputed number of shares of Common Stock (or pay any undisputed cash amounts with respect to a redemption or default payments) and (ii) each party will use its best efforts to resolve such dispute within one business day following the receipt of a Notice of Conversion (or Notice of Redemption, as applicable). If such dispute cannot be resolved within the one-day period, the Company and the Holder shall submit the dispute to an independent accountant mutually agreed upon by the Company and the Holder to make a determination as to the amounts due to the Holder. Any such determination shall be final and binding on the Company and the Holder. The Company shall issue shares of Common Stock or pay any cash amounts owed to the Holder as a result of the resolution of the dispute within two business days following the receipt of the independent accountant's determination. The Holder and any assignee, by acceptance of this Convertible Debenture, acknowledge and agree that, by reason of the provisions of this paragraph, following a conversion of a portion of this Convertible Debenture, the principal amount represented by this Convertible Debenture will be the amount indicated on the ledger evidenced by ANNEX A attached hereto (which may be less than the amount stated on the face hereof).

(2) The Company shall not be required to pay any tax which may be payable in respect of any transfer involved in the issuance and delivery of shares of Common Stock or other securities or property on conversion of this Convertible Debenture in a name other than that of the Holder (or in street name), and the Company shall not be required to issue or deliver any such shares or other securities or property unless and until the person or persons (other than the Holder or the custodian in whose street name such shares are to be held for the Holder's account) requesting the issuance thereof shall have paid to the Company the amount of any such tax or shall have established to the satisfaction of the Company that such tax has been paid.

(3) Subject to Section 5 hereof, upon receipt by the Company of a Notice of Conversion, the Holder shall be deemed to be the holder of record of the Common Stock issuable upon such conversion, the outstanding principal amount and the amount of accrued and unpaid interest on this Convertible Debenture shall be deemed reduced to

reflect such conversion, and, unless the Company defaults on its obligations under this Article 4, all rights with respect to the portion of this Convertible Debenture being so converted shall forthwith terminate except the right to receive the Common Stock or other securities, cash or other assets, as herein provided, on such conversion. Subject to Section 5 hereof, if the Holder shall have given a Notice of Conversion as provided herein, the Company's obligation to issue and deliver the certificates for shares of Common Stock shall be absolute and unconditional, irrespective of the absence of any action by the Holder to enforce the same, any waiver or consent with respect to any provisions thereof, the recovery of any judgment against any person or any action by the Holder to enforce the same, any failure or

7

delay in the enforcement of any other obligation of the Company to the Holder of record, or any setoff, counterclaim, recoupment, limitation or termination, other than a breach by the Holder of any obligation to the Company, and subject to Section 4.4(1) irrespective of any other circumstance which might otherwise limit such obligation of the Company to the Holder in connection with such conversion. The date of receipt (including receipt via telecopy) of such Notice of Conversion shall be the Conversion Date so long as it is received and the telephone notice thereof in accordance with Section 4.4(1) is made before 5:00 p.m., E.S.T., on such date.

(4) Notwithstanding the foregoing, if a Holder has not received certificates for all shares of Common Stock prior to the expiration of the Deadline with respect to a conversion of any portion of this Convertible Debenture for any reason, then (unless the Holder otherwise elects to retain its status as a holder of Common Stock by so notifying the Company), the Holder shall regain the rights of a Holder of this Convertible Debenture with respect to such unconverted portions of this Convertible Debenture and the Company shall, as soon as practicable, return such unconverted Convertible Debenture to the holder or, if the Convertible Debenture has not been surrendered, adjust its records to reflect that such portion of this Convertible Debenture not been converted. In all cases, the Holder shall retain all of its rights and remedies (including, without limitation, (i) the right to receive Conversion Default Payments to the extent required thereby for such Conversion Default and any subsequent Conversion Default and (ii) the right to have the Conversion Price with respect to subsequent conversions determined in accordance with Section 4.3 for the Company's failure to convert this Convertible Debenture.)

(5) In lieu of delivering physical certificates representing the Common Stock issuable upon conversion, provided the Company's transfer agent is participating in the Depository Trust Company ("DTC") Fast Automated Securities Transfer program, upon request of the Holder and its compliance with the provisions contained in Section 4.1 and in this Section 4.4, the Company shall use its best efforts to cause its transfer agent to electronically transmit the Common Stock issuable upon conversion to the Holder by crediting the account of Holder's prime broker (as designated by Holder from time to time) with DTC through its Deposit Withdrawal Agent Commission System.

5. REDEMPTION BY COMPANY.

5.1 COMPANY'S RIGHT TO REDEEM UPON RECEIPT OF NOTICE OF CONVERSION. In addition to the redemption rights set forth in the Agreement, upon delivery of a Notice of Conversion by the Holder (the "Initial Notice of Conversion"), if the Closing Bid Price of the Company's Common Stock on the date of the Notice of Conversion is less than 65% of the Closing Bid Price of the Common Stock on the Closing Date, the Company may elect to redeem in whole or in part, the remaining unpaid principal amount of this Convertible Debenture, for cash at a redemption price (the "Redemption Price") equal to (x) the number of shares of Common

8

Stock into which this Convertible Debenture is then convertible, times (y) the average Closing Bid Price of Common Stock for the five (5) Trading Days as reported by Bloomberg L.P. immediately prior to the date that this Convertible Debenture is called for redemption, plus accrued and unpaid interest. The election by the Company to redeem any amount of this Convertible Debenture shall be applicable to any subsequent amount to be converted as set forth in any Notice of Conversion received by the Company in the twenty (20) calendar day period following the date of the Initial Notice of Conversion, subject to the provisions of Section 5.2 below.

5.2 MECHANICS OF REDEMPTION. The Company shall provide written notice of its election to redeem rather than convert the amounts set forth in the Notice of Conversion ("Redemption Notice") via facsimile to the Holder within one Business Day of the Confirmed Delivery of the Notice of Conversion to the Company, if such Confirmed Delivery is on a Business Day or by 5:00 E.S.T. of the next Business Day if such Notice of Conversion is not delivered on a Business Day, with a copy by either overnight or 2-day courier to the Holder of this Convertible Debenture to be redeemed at the address and facsimile number of such Holder appearing in the Company's register for the Convertible Debentures. The Company shall effect each such redemption within three (3) Business Days of giving the Redemption Notice. Such Redemption Notice shall indicate whether the Company will redeem all or part of such portion of the Convertible Debenture to be redeemed and the applicable Redemption Price. The Company shall not be entitled to send any notice of redemption and begin the redemption procedure unless it has (i) the full amount of the Redemption Price, in cash, available in a demand or other immediately available account in a bank or similar financial institution or (ii) immediately available credit facilities, in the full amount of the Redemption Price, with a bank or similar financial institution on the date the Redemption Notice is sent to the Holders of this Convertible Debenture. Provided, however, the Company will process any Notice of Conversion received prior to the issuance of a Redemption Notice; and further provided that, after a Redemption Notice has been issued, the Holder may issue a Notice of Conversion which will not be honored unless the Company fails to make the redemption payment when due. In the event of such failure, the Notice of Conversion will be honored as of the date of the Notice of Conversion. Additionally, if the Company fails to make full payments of the Redemption Price of this Convertible Debenture being redeemed by the third Business Day following the Notice of Redemption, then the Company waives its right to redeem any of the remaining then outstanding Convertible Debentures pursuant to Section 5.1, unless approved in writing by the Holder.

5.3 PAYMENT OF REDEMPTION PRICE. The Redemption Price shall be paid to the Holder of this Convertible Debenture within three (3) Business Days of the delivery of the Redemption Notice.

9

6. HOLDER'S RIGHT TO ADVANCE NOTICE OF ELECTION TO REDEEM.

6.1 HOLDER'S RIGHT TO ELECT TO RECEIVE NOTICE OF CASH REDEMPTION BY COMPANY. The Holder of this Convertible Debenture shall have the right to require the Company to provide advance notice stating whether the Company will elect to redeem all or part of the redeemable portion in cash, pursuant to the Company's redemption rights discussed in Section 5.1 above.

6.2 MECHANICS OF HOLDER'S ELECTION NOTICE. Holder shall give notice to the Company by facsimile (the "Election Notice"), requiring that the Company disclose whether the Company would elect to redeem the redeemable portion of this Convertible Debenture (in whole or in part) if the Holder were to provide a Notice of Conversion within the next four (4) Business Days and sought to convert the Convertible Debenture in such principal amount as is specified in the Election Notice.

6.3 COMPANY'S RESPONSE. Company must respond, disclosing its election, within two (2) Business Days of receipt of Holder's Election Notice via facsimile. If Company does not respond to Holder within two (2) Business Days (by 12:00 noon, if required above) via facsimile, Company shall be deemed to have forfeited its right to exercise

redemption pursuant to Section 5.1 upon its receipt of (but only with respect to) that Notice of Conversion.

7. **HOLDER'S COVENANTS.** The Holder of this Convertible Debenture, by its acceptance thereof, covenants and agrees that the Convertible Debenture is being acquired as an investment and not with a view to the distribution thereof in violation of the Securities Act, and that the Convertible Debenture may not be transferred, sold, assigned, hypothecated or otherwise disposed of, in whole, or in part, except as provided on the first page hereof and provided that the Holder shall have furnished to the Company an opinion of counsel, in form and substance reasonably satisfactory to the Company, to the effect that such transfer is exempt from the registration requirements of the Securities Act and any applicable state securities laws.

8. **MISCELLANEOUS.** This Convertible Debenture shall be deemed to be a contract made under the laws of the State of Massachusetts, and for all purposes shall be governed by and construed in accordance with the laws of said State. The parties hereto, including all guarantors or endorsers, hereby waive presentment, demand, notice, protest and all other demands and notices in connection with the delivery, acceptance, performance and enforcement of this Convertible Debenture, except as specifically provided herein, and assent to extensions of the time of payment, or forbearance or other indulgence without notice. The Company hereby submits to the exclusive jurisdiction of the United States District Court for Boston, Massachusetts and of any Massachusetts state court sitting in Boston, Massachusetts for purposes of all legal proceedings arising out of or relating to this Convertible Debenture. The Company irrevocably waives, to the fullest extent permitted by law, any objection which it may now or hereafter have to the laying of the venue of any such proceeding

10

brought in such a court and any claim that any such proceeding brought in such a court has been brought in an inconvenient forum. The Company hereby irrevocably waives any and all right to trial by jury in any legal proceeding arising out of or relating to this Convertible Debenture.

The Holder of this Convertible Debenture by acceptance of this Convertible Debenture agrees to be bound by the provisions of this Convertible Debenture which are expressly binding on such Holder.

[Signature page follows]

11

SIGNATURE PAGE TO KIPHART DEBENTURE

IN WITNESS WHEREOF, the Company has caused this instrument to be duly executed.

Dated as of August 25, 2000

BOSTON BIOMEDICA, INC.

By: /s/ Kevin W. Quinlan

Name: Kevin W. Quinlan

Title: President

ANNEX A

CONVERSION AND REPAYMENT LEDGER

<TABLE>

<CAPTION>

		INTEREST CONVERTED OR		PRINCIPAL CONVERTED		ISSUER INITIALS	HOLDER INITIALS
DATE	PRINCIPAL BALANCE	PAID	OR PAID	NEW PRINCIPAL BALANCE			
<S>	<C>	<C>	<C>	<C>	<C>	<C>	<C>

</TABLE>

BOSTON BIOMEDICA, INC.

HOLDER:

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

FULL NAME AND ADDRESS OF SUBSCRIBER FOR REGISTRATION PURPOSES:

NAME:

ADDRESS:

TEL NO:

FAX NO:

CONTACT
NAME:

DELIVERY INSTRUCTIONS (IF DIFFERENT FROM REGISTRATION NAME):

NAME:

ADDRESS:

TEL NO:

FAX NO:

CONTACT
NAME:

SPECIAL INSTRUCTIONS:

(To be Executed by the Registered Holder

in order to Convert the Convertible Debenture)

The undersigned hereby irrevocably elects to convert \$ _____ of the principal balance of the Convertible Debenture into shares of Common Stock, \$.01 par value per share (the "Common Stock"), of Boston Biomedica, Inc. (the "Company") according to the conditions hereof, as of the date written below. No fee will be charged to the Holder for any conversion, except for transfer taxes, if any. The undersigned, as contemplated by Section 5.1 of the Securities Purchase Agreement pursuant to which the Convertible Debenture was issued, hereby states that the representations and warranties of the undersigned set forth therein are true and correct in all material respects as of the date hereof.

Conversion calculations:

Date of Conversion

Applicable Conversion Price

Number of Shares

Name/Signature

Address:

Exhibit 4.7

Senior Subordinated Debenture to Shoreline Micro-Cap Fund, L.P.

THE SECURITIES REPRESENTED HEREBY HAVE NOT BEEN REGISTERED UNDER THE UNITED STATES SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"). THE HOLDER HEREOF, BY PURCHASING SUCH SECURITIES AGREES FOR THE BENEFIT OF THE COMPANY THAT SUCH SECURITIES MAY BE OFFERED, SOLD OR OTHERWISE TRANSFERRED ONLY (A) TO THE COMPANY, (B) PURSUANT TO AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT, OR (C) IF REGISTERED UNDER THE SECURITIES ACT AND ANY APPLICABLE STATE SECURITIES LAWS. IN ADDITION, A SECURITIES PURCHASE AGREEMENT, DATED AS OF THE DATE HEREOF, A COPY OF WHICH MAY BE OBTAINED FROM THE COMPANY AT ITS PRINCIPAL EXECUTIVE OFFICE, CONTAINS CERTAIN ADDITIONAL AGREEMENTS AMONG THE PARTIES, INCLUDING, WITHOUT LIMITATION, PROVISIONS WHICH (A) LIMIT THE CONVERSION RIGHTS OF THE HOLDER, (B) SPECIFY VOLUNTARY AND MANDATORY REPAYMENT, PREPAYMENT AND REDEMPTION RIGHTS AND OBLIGATIONS AND (C) SPECIFY EVENTS OF DEFAULT FOLLOWING WHICH THE REMAINING BALANCE DUE AND OWING HEREUNDER MAY BE ACCELERATED.

No. 3 \$220,000.00

3% SENIOR SUBORDINATED CONVERTIBLE DEBENTURE
of

Boston Biomedica, Inc., a Massachusetts corporation (together with its successors, the "Company"), for value received hereby promises to pay to:

SHORELINE MICRO-CAP FUND, L.P.

(The "Holder") and registered assigns, the principal sum of \$220,000.00 or, if less, the principal amount of this Senior Subordinated Convertible Debenture (this "Convertible Debenture") then outstanding, on the Maturity Date by wire transfer of immediately available funds to the Holder in such coin or currency of the United States of America as at the time of payment shall be legal tender for the payment of public and private debts, and to pay interest which shall accrue beginning the date hereof, quarterly in arrears, on (i) the last day of March, June, September and December of each year until the Maturity Date, commencing September 30, 2000 (unless such day is not a Business Day, in which event on the next succeeding Business Day) (each an "Interest Payment Date"), (ii) the Maturity Date, (iii) each Conversion Date, as hereafter defined, and (iv) the date the principal amount of the Convertible Debentures shall be declared to be or shall automatically become due and

payable, on the principal sum hereof outstanding in like coin or currency, at the rates per annum set forth below, from the most recent Interest Payment Date to which interest has been paid on this Convertible Debenture, or if no interest has been paid on this Convertible Debenture, from the date of this Convertible Debenture until payment in full of the principal sum hereof has been made. The Maturity Date is August 25, 2003.

The interest rate shall be three percent (3%) per annum (the "Interest Rate") or, if less, the maximum rate permitted by applicable law. Past due amounts (including interest, to the extent permitted by law) will also accrue interest at the Interest Rate plus 2% per annum or, if less, the maximum rate permitted by applicable law, and will be payable on demand ("Default Interest"). Interest on this Convertible Debenture will be calculated on the basis of a 360-day year of twelve 30 day months. All payments of principal and interest hereunder shall be made for the benefit of the Holder pursuant to the terms of the Agreement (hereafter defined). At the option of the Company, interest may be paid in cash or in shares of Common Stock. If the Company determines to pay interest in shares of Common Stock, it shall be required to notify the Holder of such election on the Closing Date. On each Conversion Date, interest shall be paid in shares of Common Stock on the portion of the principal balance of the Convertible Debenture then being converted. The number of shares of Common Stock issued as interest shall be determined by dividing the dollar amount of interest due on the applicable Interest Payment Date by the Conversion Price then in effect.

This Convertible Debenture is a duly authorized issuance of Convertible Debentures of the Company referred to in that certain Securities Purchase Agreement dated as of the date hereof between the Company and the Purchaser named therein (the "Agreement"). The Agreement contains certain additional agreements among the parties with respect to the terms of this Convertible Debenture, including, without limitation, provisions which (A) limit the

conversion rights of the Holder, (B) specify voluntary and mandatory repayment, prepayment and redemption rights and obligations and (C) specify Events of Default following which the remaining balance due and owing hereunder may be accelerated. All such provisions are an integral part of this Convertible Debenture and are incorporated herein by reference. This Convertible Debenture is transferable and assignable to one or more Persons, in accordance with the limitations set forth in the Agreement.

This Convertible Debenture shall rank senior to any indebtedness of the Company except (a) the Company's outstanding credit facility with Fleet Bank and any successor thereof, including increases to such credit facility; (b) the Company's mortgage loan with Commerce Bank; and (c) any future sale and lease back transaction in connection with the Company's headquarters building in West Bridgewater, MA, to which it shall be junior in ranking. This Convertible Debenture shall rank on a pari passu basis with the Company's outstanding 3% convertible debentures.

The Company shall keep a register (the "Register") in which shall be entered the names and addresses of the registered holder of this Convertible Debenture and particulars of this Convertible Debenture held by such holder and of all transfers of this Convertible Debenture. References to the Holder or "Holders" shall mean the Person listed in the Register as registered holder of such

2

Convertible Debentures. The ownership of this Convertible Debenture shall be proven by the Register.

1. CERTAIN TERMS DEFINED. All terms defined in the Agreement and not otherwise defined herein shall have for purposes hereof the meanings provided for in the Agreement.

2. COMPANY COVENANTS. The Company covenants and agrees to observe and perform each of its covenants, obligations and undertakings contained in the Agreement, which obligations and undertakings are expressly assumed herein by the Company and made for the benefit of the holder hereof.

3. PAYMENT OF PRINCIPAL. The Company shall repay the remaining unpaid balance of this Convertible Debenture on the Maturity Date. The Company may, and shall be obligated to, prepay all or a portion of this Convertible Debenture on the terms specified in the Agreement.

4. CONVERSION.

4.1 CONVERSION OF CONVERTIBLE DEBENTURE. Subject to Section 5 hereof, the Holder shall have the right, at its option, at any time from and after the 90th day following the date of issuance of this Convertible Debenture, to convert the principal amount of this Convertible Debenture, or any portion of such principal amount, into that number of fully paid and nonassessable shares of Common Stock (as such shares shall then be constituted) determined pursuant to this Section 4.1. The number of shares of Common Stock to be issued upon each conversion of this Convertible Debenture shall be determined by dividing the Conversion Amount (as defined below) by the Conversion Price in effect on the date (the "Conversion Date") a Notice of Conversion is delivered to the Company, as applicable, by the Holder by facsimile dispatched prior to 5:00 p.m., E.S.T. Prior to sending the facsimile Notice of Conversion to the Company, the Holder shall notify the Company of such conversion by telephone to one of the following individuals on the following order of priority: (1) Richard T. Schumacher, (2) Kevin Quinlan and (3) Kathi Benjamin (or to each of the individual's voicemail if none of the individuals is available) as set forth in Section 4.4 hereto. The Company may change the individuals to whom such telephone notice shall be directed by notifying the Holder of any such change. The term "Conversion Amount" means, with respect to any conversion of this Convertible Debenture, the sum of (1) the principal amount of this Convertible Debenture to be converted in such conversion plus (2) accrued and unpaid interest, if any, on such principal amount at the interest rates provided in this Convertible Debenture to the Conversion Date plus (3) Default Interest, if any, on the interest referred to in the immediately preceding clause (2) plus (4) at the Holder's option, any amounts owed to the Holder pursuant to Section 4.3 hereof, Section 10.1 of the Agreement or Section 10.4 of the Agreement.

4.2 CONVERSION PRICE. At the option of the Holder, any portion or all of the outstanding principal amount of this Convertible Debenture shall be converted into a number of shares of Common Stock at the conversion price (the "Conversion Price") equal to the lesser of (i) 110% of the volume weighted average sales price of the Common Stock, as reported by Bloomberg L.P. on the day immediately preceding the Closing Date (the "Fixed Conversion Price") and (ii) 90% of the average of the five (5) lowest volume weighted average sales prices of the Common Stock as reported by Bloomberg L.P. during the 25 Trading Days immediately preceding but not including the date of the related Notice of Conversion (the "Formula Conversion Price").

4.3 AUTHORIZED SHARES.

(1) Consistent with Section 7.11 of the Agreement, the Company (i) shall promptly irrevocably instruct the Company's transfer agent to issue certificates for the Common Stock issuable upon conversion of this Convertible Debenture and (ii) agrees that its issuance of this Convertible Debenture shall constitute full authority to its officers and agents who are charged with the duty of executing stock certificates to execute and issue the necessary certificates for shares of Common Stock in accordance with the terms and conditions of this Convertible Debenture.

(2) If at any time a Holder of this Convertible Debenture submits a Notice of Conversion (x) the Company does not have sufficient authorized but unissued shares of Common Stock available to effect such conversion in full in accordance with the provisions of this Article 4 or (y) the Company is prohibited by the applicable rules of the OTC Bulletin Board or the National Market on which the shares of Common Stock are listed and traded at that time to effect such conversion in full as provided in subsection (3) below, without stockholder approval (each, a "Conversion Default"), the Company shall issue to the Holder all of the shares of Common Stock which are then available to effect such conversion. The portion of this Convertible Debenture which the Holder included in its Conversion Notice and which exceeds the amount which is then convertible into available shares of Common Stock (the "Excess Amount") shall, notwithstanding anything to the contrary contained herein, not be convertible into Common Stock in accordance with the terms hereof until (and at the Holder's option at any time after) the date additional shares of Common Stock are authorized by the Company, or its stockholders, as applicable, at which time the Conversion Price in respect thereof shall be the lower of (i) the Conversion Price on the Conversion Default Date (as defined below) and (ii) the Conversion Price on the Conversion Date thereafter elected by the Holder in respect thereof. The Company shall pay to the Holder payments ("Conversion Default Payments") for a Conversion Default in the amount of $(N/365) \times .24 \times$ the Excess Amount on the Conversion Date in respect of the Conversion Default (the "Conversion Default Date"), where N = the number of days from the Conversion Default Date to the date (the "Authorization Date") that the Company, or its stockholders, as applicable, authorizes a sufficient number of shares of Common Stock to effect conversion

of the full outstanding principal balance of this Convertible Debenture or until the Company redeems the Excess Amount in accordance with the terms of this Convertible Debenture. The Company shall use its best efforts to authorize, or cause its stockholders to authorize within 40 days of the occurrence of a Conversion Default, as applicable, a sufficient number of shares of Common Stock as soon as practicable following the earlier of (i) such time that the Holder notifies the Company or that the Company otherwise becomes aware that there are or likely will be insufficient shares to allow full conversion thereof and (ii) a Conversion Default. The Company shall send notice to the Holder of the authorization of additional shares of Common Stock, the Authorization Date and the amount of Holder's accrued Conversion Default Payments. The accrued Conversion Default Payments for each calendar month shall be paid in cash or shares of Common Stock (at such

time as there are sufficient authorized shares of Common Stock) at the Holder's option, as follows:

(a) In the event the Holder elects to take such payment in cash, cash payment shall be made to Holder by the fifth Business Day of the month following the month in which it has accrued; and

(b) In the event the Holder elects to take such payment in Common Stock, the Holder may convert such payment amount into Common Stock at the Conversion Price (as in effect at the time of payment) at any time after the fifth Business Day of the month following the month in which it has accrued (at such time as there are sufficient authorized shares of Common Stock) in accordance with the terms of this Article 4.

(3) The Holder's election pursuant to this Section 4.3 shall be made in writing to the Company at any time prior to 5:00 p.m., E.S.T., on the third Business Day of the month following the month in which Conversion Default payments have accrued. If no election is made, the Holder shall be deemed to have elected to receive cash. Nothing herein shall limit the Holders right to pursue actual damages (to the extent in excess of the Conversion Default Payments) due to the Company's failure to maintain a sufficient number of authorized shares of Common Stock.

(4) In no event shall the Company issue more than the Maximum Number of Shares upon conversion of this Convertible Debenture, unless the Company shall have obtained approval by the stockholders of the Company ("Stockholder Approval") or a waiver of such requirement by the OTC Bulletin Board or the National Market on which the shares of Common Stock are listed and traded at that time. Once the Maximum Number of Shares has been issued (the date of which is hereinafter referred to as the "Maximum Conversion Date"), unless the Company shall have obtained Stockholder Approval or a waiver of such requirement by the OTC Bulletin Board or the National Market on which the shares of Common Stock are listed and traded at that time within 40 days of the Maximum Conversion Date, the Company shall pay to the Holder within five (5) Business Days of the Maximum

5

Conversion Date (or, if the Company is, in good faith, using its best efforts to obtain Stockholder Approval, then the earlier of (x) 40 days following the Maximum Conversion Date, and (y) such date that it becomes reasonably apparent that Stockholder Approval will not be obtained within such 40 days period), the Redemption Price for the Excess Amount plus accrued and unpaid Default Interest, if any.

(5) The Maximum Number of Shares shall be subject to adjustment from time to time for stock splits, stock dividends, combinations, capital reorganizations and similar events relating to the Common Stock occurring after the date hereof as contemplated by Article 11 of the Agreement. With respect to each Holder of Convertible Debentures, the Maximum Number of Shares shall refer to such Holder's pro rata share thereof based upon the aggregate principal balance of the Convertible Debentures then outstanding. In the event that the Company obtains Stockholder Approval, approval of the OTC Bulletin Board or the National Market on which the shares of Common Stock are listed and traded at that time, or otherwise is able to increase the number of shares to be issued above the Maximum Number of Shares (such increased number being the "New Maximum Number of Shares"), the references to Maximum Number of Shares above shall be deemed to be, instead, references to the New Maximum Number of Shares.

4.4 METHOD OF CONVERSION.

(1) Prior to sending the Notice of Conversion via facsimile as set forth in Section 4.1 hereof, the Holder shall give notice to Richard T. Schumacher by telephone (and if Mr. Schumacher is not available to be reached by telephone, either Kevin Quinlan or Kathi Benjamin by telephone, or such other person designated by the Company after the Closing Date) that the Holder intends to submit a Notice of Conversion on such date. Notwithstanding anything to the contrary set forth herein, upon conversion of this Convertible Debenture in

accordance with the terms hereof, the Holder shall not be required to physically surrender this Convertible Debenture to the Company unless the entire unpaid principal amount of this Convertible Debenture is so converted. Rather, the Holder shall send to the Company, and the Company shall send to the Holder, via overnight delivery service (a) the originally signed and executed Notice of Conversion and (b) an originally signed and executed ANNEX A to this Convertible Debenture indicating the amounts to be converted and the new principal balance of this Convertible Debenture taking into account the Notice of Conversion. The Company shall keep as part of its records the originally executed ledger and the Holder shall maintain a copy thereof. Upon execution of the conversion contemplated by the Notice of Conversion, the Company and the Holder shall deliver to one another an executed copy of ANNEX A. It is specifically contemplated that the Company shall act as the calculation agent for conversions and repayments. In the event there is a dispute as to the number of shares of Common Stock the Holder is entitled to receive upon a conversion of this Convertible Debenture (or the amount of cash to be received upon repayment or redemption of this Convertible Debenture), the amount of any

6

payments due upon an Event of Default under this Convertible Debenture or the calculation of any of the foregoing, the Holder and the Company agree that (i) the Company shall issue to the Holder the undisputed number of shares of Common Stock (or pay any undisputed cash amounts with respect to a redemption or default payments) and (ii) each party will use its best efforts to resolve such dispute within one business day following the receipt of a Notice of Conversion (or Notice of Redemption, as applicable). If such dispute cannot be resolved within the one-day period, the Company and the Holder shall submit the dispute to an independent accountant mutually agreed upon by the Company and the Holder to make a determination as to the amounts due to the Holder. Any such determination shall be final and binding on the Company and the Holder. The Company shall issue shares of Common Stock or pay any cash amounts owed to the Holder as a result of the resolution of the dispute within two business days following the receipt of the independent accountant's determination. The Holder and any assignee, by acceptance of this Convertible Debenture, acknowledge and agree that, by reason of the provisions of this paragraph, following a conversion of a portion of this Convertible Debenture, the principal amount represented by this Convertible Debenture will be the amount indicated on the ledger evidenced by ANNEX A attached hereto (which may be less than the amount stated on the face hereof).

(2) The Company shall not be required to pay any tax which may be payable in respect of any transfer involved in the issuance and delivery of shares of Common Stock or other securities or property on conversion of this Convertible Debenture in a name other than that of the Holder (or in street name), and the Company shall not be required to issue or deliver any such shares or other securities or property unless and until the person or persons (other than the Holder or the custodian in whose street name such shares are to be held for the Holder's account) requesting the issuance thereof shall have paid to the Company the amount of any such tax or shall have established to the satisfaction of the Company that such tax has been paid.

(3) Subject to Section 5 hereof, upon receipt by the Company of a Notice of Conversion, the Holder shall be deemed to be the holder of record of the Common Stock issuable upon such conversion, the outstanding principal amount and the amount of accrued and unpaid interest on this Convertible Debenture shall be deemed reduced to reflect such conversion, and, unless the Company defaults on its obligations under this Article 4, all rights with respect to the portion of this Convertible Debenture being so converted shall forthwith terminate except the right to receive the Common Stock or other securities, cash or other assets, as herein provided, on such conversion. Subject to Section 5 hereof, if the Holder shall have given a Notice of Conversion as provided herein, the Company's obligation to issue and deliver the certificates for shares of Common Stock shall be absolute and unconditional, irrespective of the absence of any action by the Holder to enforce the same, any waiver or consent with respect to any provisions thereof, the recovery of any judgment against any person or any action by the Holder to enforce the same, any failure or

delay in the enforcement of any other obligation of the Company to the Holder of record, or

7

any setoff, counterclaim, recoupment, limitation or termination, other than a breach by the Holder of any obligation to the Company, and subject to Section 4.4(1) irrespective of any other circumstance which might otherwise limit such obligation of the Company to the Holder in connection with such conversion. The date of receipt (including receipt via telecopy) of such Notice of Conversion shall be the Conversion Date so long as it is received and the telephone notice thereof in accordance with Section 4.4(1) is made before 5:00 p.m., E.S.T., on such date.

(4) Notwithstanding the foregoing, if a Holder has not received certificates for all shares of Common Stock prior to the expiration of the Deadline with respect to a conversion of any portion of this Convertible Debenture for any reason, then (unless the Holder otherwise elects to retain its status as a holder of Common Stock by so notifying the Company), the Holder shall regain the rights of a Holder of this Convertible Debenture with respect to such unconverted portions of this Convertible Debenture and the Company shall, as soon as practicable, return such unconverted Convertible Debenture to the holder or, if the Convertible Debenture has not been surrendered, adjust its records to reflect that such portion of this Convertible Debenture not been converted. In all cases, the Holder shall retain all of its rights and remedies (including, without limitation, (i) the right to receive Conversion Default Payments to the extent required thereby for such Conversion Default and any subsequent Conversion Default and (ii) the right to have the Conversion Price with respect to subsequent conversions determined in accordance with Section 4.3 for the Company's failure to convert this Convertible Debenture.)

(5) In lieu of delivering physical certificates representing the Common Stock issuable upon conversion, provided the Company's transfer agent is participating in the Depository Trust Company ("DTC") Fast Automated Securities Transfer program, upon request of the Holder and its compliance with the provisions contained in Section 4.1 and in this Section 4.4, the Company shall use its best efforts to cause its transfer agent to electronically transmit the Common Stock issuable upon conversion to the Holder by crediting the account of Holder's prime broker (as designated by Holder from time to time) with DTC through its Deposit Withdrawal Agent Commission System.

5. REDEMPTION BY COMPANY.

5.1 COMPANY'S RIGHT TO REDEEM UPON RECEIPT OF NOTICE OF CONVERSION. In addition to the redemption rights set forth in the Agreement, upon delivery of a Notice of Conversion by the Holder (the "Initial Notice of Conversion"), if the Closing Bid Price of the Company's Common Stock on the date of the Notice of Conversion is less than 65% of the Closing Bid Price of the Common Stock on the Closing Date, the Company may elect to redeem in whole or in part, the remaining unpaid principal amount of this Convertible Debenture, for cash at a redemption price (the "Redemption Price") equal to (x) the number of shares of Common Stock into which this Convertible Debenture is then convertible, times (y) the average

8

Closing Bid Price of Common Stock for the five (5) Trading Days as reported by Bloomberg L.P. immediately prior to the date that this Convertible Debenture is called for redemption, plus accrued and unpaid interest. The election by the Company to redeem any amount of this Convertible Debenture shall be applicable to any subsequent amount to be converted as set forth in any Notice of Conversion received by the Company in the twenty (20) calendar day period following the date of the Initial Notice of Conversion, subject to the provisions of Section 5.2 below.

5.2 MECHANICS OF REDEMPTION. The Company shall provide written notice of its election to redeem rather than convert the amounts set

forth in the Notice of Conversion ("Redemption Notice") via facsimile to the Holder within one Business Day of the Confirmed Delivery of the Notice of Conversion to the Company, if such Confirmed Delivery is on a Business Day or by 5:00 E.S.T. of the next Business Day if such Notice of Conversion is not delivered on a Business Day, with a copy by either overnight or 2-day courier to the Holder of this Convertible Debenture to be redeemed at the address and facsimile number of such Holder appearing in the Company's register for the Convertible Debentures. The Company shall effect each such redemption within three (3) Business Days of giving the Redemption Notice. Such Redemption Notice shall indicate whether the Company will redeem all or part of such portion of the Convertible Debenture to be redeemed and the applicable Redemption Price. The Company shall not be entitled to send any notice of redemption and begin the redemption procedure unless it has (i) the full amount of the Redemption Price, in cash, available in a demand or other immediately available account in a bank or similar financial institution or (ii) immediately available credit facilities, in the full amount of the Redemption Price, with a bank or similar financial institution on the date the Redemption Notice is sent to the Holders of this Convertible Debenture. Provided, however, the Company will process any Notice of Conversion received prior to the issuance of a Redemption Notice; and further provided that, after a Redemption Notice has been issued, the Holder may issue a Notice of Conversion which will not be honored unless the Company fails to make the redemption payment when due. In the event of such failure, the Notice of Conversion will be honored as of the date of the Notice of Conversion. Additionally, if the Company fails to make full payments of the Redemption Price of this Convertible Debenture being redeemed by the third Business Day following the Notice of Redemption, then the Company waives its right to redeem any of the remaining then outstanding Convertible Debentures pursuant to Section 5.1, unless approved in writing by the Holder.

5.3 PAYMENT OF REDEMPTION PRICE. The Redemption Price shall be paid to the Holder of this Convertible Debenture within three (3) Business Days of the delivery of the Redemption Notice.

9

6. HOLDER'S RIGHT TO ADVANCE NOTICE OF ELECTION TO REDEEM.

6.1 HOLDER'S RIGHT TO ELECT TO RECEIVE NOTICE OF CASH REDEMPTION BY COMPANY. The Holder of this Convertible Debenture shall have the right to require the Company to provide advance notice stating whether the Company will elect to redeem all or part of the redeemable portion in cash, pursuant to the Company's redemption rights discussed in Section 5.1 above.

6.2 MECHANICS OF HOLDER'S ELECTION NOTICE. Holder shall give notice to the Company by facsimile (the "Election Notice"), requiring that the Company disclose whether the Company would elect to redeem the redeemable portion of this Convertible Debenture (in whole or in part) if the Holder were to provide a Notice of Conversion within the next four (4) Business Days and sought to convert the Convertible Debenture in such principal amount as is specified in the Election Notice.

6.3 COMPANY'S RESPONSE. Company must respond, disclosing its election, within two (2) Business Days of receipt of Holder's Election Notice via facsimile. If Company does not respond to Holder within two (2) Business Days (by 12:00 noon, if required above) via facsimile, Company shall be deemed to have forfeited its right to exercise redemption pursuant to Section 5.1 upon its receipt of (but only with respect to) that Notice of Conversion.

7. HOLDER'S COVENANTS. The Holder of this Convertible Debenture, by its acceptance thereof, covenants and agrees that the Convertible Debenture is being acquired as an investment and not with a view to the distribution thereof in violation of the Securities Act, and that the Convertible Debenture may not be transferred, sold, assigned, hypothecated or otherwise disposed of, in whole, or in part, except as provided on the first page hereof and provided that the Holder shall have furnished to the Company an opinion of counsel, in form and substance reasonably satisfactory to the Company, to the effect that such transfer is exempt from the registration requirements of the Securities Act and any applicable state securities laws.

8. MISCELLANEOUS. This Convertible Debenture shall be deemed to

</TABLE>

BOSTON BIOMEDICA, INC.

HOLDER:

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

FULL NAME AND ADDRESS OF SUBSCRIBER FOR REGISTRATION PURPOSES:

NAME:

ADDRESS:

TEL NO:

FAX NO:

CONTACT

NAME:

DELIVERY INSTRUCTIONS (IF DIFFERENT FROM REGISTRATION NAME):

NAME:

ADDRESS:

TEL NO:

FAX NO:

CONTACT

NAME:

SPECIAL INSTRUCTIONS:

NOTICE OF CONVERSION

(To be Executed by the Registered Holder

in order to Convert the Convertible Debenture)

The undersigned hereby irrevocably elects to convert \$_____ of the principal balance of the Convertible Debenture into shares of Common Stock, \$.01 par value per share (the "Common Stock"), of Boston Biomedica, Inc. (the "Company") according to the conditions hereof, as of the date written below. No fee will be charged to the Holder for any conversion, except for transfer taxes, if any. The undersigned, as contemplated by Section 5.1 of the Securities Purchase Agreement pursuant to which the Convertible Debenture was issued, hereby states that the representations and warranties of the undersigned set forth therein are true and correct in all material respects as of the date hereof.

Conversion calculations:

Date of Conversion

Applicable Conversion Price

Number of Shares

Name/Signature

Address:

Warrant to Richard P. Kiphart

THIS COMMON STOCK PURCHASE WARRANT HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"). THE HOLDER HEREOF, BY PURCHASING THIS COMMON STOCK PURCHASE WARRANT, AGREES FOR THE BENEFIT OF THE COMPANY THAT SUCH SECURITIES MAY BE OFFERED, SOLD OR OTHERWISE TRANSFERRED ONLY (A) TO THE COMPANY, (B) PURSUANT TO AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT, OR (C) IF REGISTERED UNDER THE SECURITIES ACT AND ANY APPLICABLE STATE SECURITIES LAWS.

BOSTON BIOMEDICA, INC.

COMMON STOCK PURCHASE WARRANT

No. 4

Number of shares: 27,734 Holder: Richard P. Kiphart
Expiration Date: August 25, 2005 c/o William Blair & Company
222 West Adams Street
Chicago, IL 60606
Purchase Price Per Share: \$3.60

For identification only. The governing terms of this Warrant are set forth below.

Boston Biomedica, Inc., a Massachusetts corporation (the "COMPANY"), hereby certifies that, for value received, Richard P. Kiphart, or his assigns (the "HOLDER"), is entitled, subject to the terms set forth below, to purchase from the Company at any time or from time to time after the date hereof and prior to the fifth anniversary hereof (the "EXERCISE PERIOD"), at the Purchase Price hereinafter set forth, twenty-seven thousand seven hundred thirty-four (27,734) shares of the fully paid and nonassessable shares of common stock of the Company, \$0.01 par value per share (the "Common Stock"). The number and character of such shares of Common Stock and the Purchase Price are subject to adjustment as provided herein.

The purchase price per share of Common Stock issuable upon exercise of this Warrant (the "PURCHASE PRICE") shall initially be equal to 120% of the average Closing Bid Price as published by Bloomberg, L.P. of the Common Stock on the day immediately preceding the date hereof; PROVIDED, HOWEVER, that the Purchase Price shall be adjusted from time to time as provided herein.

Capitalized terms used herein not otherwise defined shall have the meanings ascribed thereto in that certain Securities Purchase Agreement of even date herewith between the Company, the Holder and Shoreline Micro-Cap Fund, L.P. (the "Purchase Agreement"). By execution of this Warrant, the Holder hereof agrees to be bound by and to benefit from the provisions of the Purchase

1

Agreement set forth herein. As used herein the following terms, unless the context otherwise requires, have the following respective meanings:

(a) The term "COMPANY" shall include Boston Biomedica, Inc. and any corporation that shall succeed or assume the obligations of such corporation hereunder.

(b) The term "COMMON STOCK" includes (a) the Company's common stock, par value \$0.01 per share, (b) any other capital stock of any class or classes (however designated) of the Company, authorized on or after the date hereof, the Holders of which shall have the right, without limitation as to amount, either to all or to a share of the balance of current dividends and liquidating dividends after the payment of dividends and distributions on any shares entitled to preference, and the Holders of which shall ordinarily, in the absence of contingencies, be entitled to vote for the election of a majority of directors of the Company (even

though the right so to vote has been suspended by the happening of such a contingency) and (c) any other securities into which or for which any of the securities described in (a) or (b) may be converted or exchanged pursuant to a plan of recapitalization, reorganization, merger, sale of assets or otherwise.

(c) The term "OTHER SECURITIES" refers to any stock (other than Common Stock) and other securities of the Company or any other person (corporate or otherwise) that the Holder of this Warrant at any time shall be entitled to receive, or shall have received, on the exercise of this Warrant, in lieu of or in addition to Common Stock, or that at any time shall be issuable or shall have been issued in exchange for or in replacement of Common Stock or Other Securities pursuant to Section 4 or otherwise.

1. EXERCISE OF WARRANT.

1.1 METHOD OF EXERCISE.

(a) This Warrant may be exercised in whole or in part (but not as to a fractional share of Common Stock), at any time and from time to time during the Exercise Period by the Holder hereof by delivery of a notice of exercise (a "NOTICE OF EXERCISE") substantially in the form attached hereto as EXHIBIT A via facsimile to the Company. Prior to sending the Notice of Exercise via facsimile, the Holder shall give Richard Schumacher notice of its intent to submit a Notice of Exercise by telephone (and if Mr. Schumacher is not available to be reached by telephone, either Kevin Quinlan or Kathi Benjamin by telephone, or such other person designated by the Company after the Closing Date). Promptly thereafter the Holder shall surrender this Warrant (if the entire amount of the Warrant is subject to the Notice of Exercise) to the Company at its principal office via overnight delivery service, accompanied by payment of the Purchase Price multiplied by the number of shares of Common Stock for which this Warrant is being exercised (the "EXERCISE PRICE"). Payment of the Exercise Price shall be made, at the option of the Holder, (i) by check or bank draft payable to the order of the Company, or (ii) by wire transfer to the account of the Company. Upon exercise, the Holder shall be entitled to receive within three Trading Days of the Exercise Date (as defined herein), one or more certificates, issued in the Holder's name or

2

in such name or names as the Holder may direct, subject to the limitations on transfer contained herein, for the number of shares of Common Stock so purchased. The shares of Common Stock so purchased shall be deemed to be issued as of the close of business on the date on which the Company shall have received from the Holder payment in full of the Exercise Price (the "EXERCISE DATE").

(b) Upon exercise of a portion of this Warrant in accordance with the terms hereof, records showing the amount so exercised and the date of exercise shall be maintained on a ledger substantially in the form of ANNEX B attached hereto (an originally signed and executed copy of which shall be delivered to the Company with each Notice of Exercise). The Company shall maintain the originally signed and executed ledger and the Holder shall maintain a copy thereof. Upon execution of the exercise of the Warrants contemplated by the Notice of Exercise, the Company shall deliver to the Holder a copy of ANNEX B signed and executed by the Company, and the Holder shall deliver to the Company a copy of Annex B signed by the Holder. It is specifically contemplated that the Company shall act as the calculation agent for all exercises of this Warrant. The Holder and any assignee, by acceptance of this Warrant, acknowledges and agrees that, by reason of the provisions of this paragraph, following an exercise of a portion of this Warrant, the number of shares of Common Stock represented by this Warrant will be the amount indicated on ANNEX B attached hereto (which may be less than the amount stated on the face hereof).

(c) In the event there is a dispute as to the number of shares of Common Stock the Holder is entitled to receive upon exercise of this Warrant, the Company shall issue to the Holder the number of shares not in dispute and the Company and the Holder will use their best efforts to resolve such dispute within one Business Day following the receipt of a Notice of Exercise. If such dispute cannot be resolved within such one-day

period, the Company and the Holder shall submit the dispute to an independent accountant mutually agreed upon by the Company and the Holder to make a final and binding determination of the number of shares owed to the Holder. The Company shall issue shares of Common Stock owed to Holder as a result of the resolution of the dispute within two Business Days following the receipt of the accountant's independent determination.

1.2 REGULATION D RESTRICTIONS. The Holder hereof represents and warrants to the Company that it has acquired this Warrant and anticipates acquiring the shares of Common Stock issuable upon exercise of the Warrant solely for its own account for investment purposes and not with a view to or for resale of such securities unless such resale has been registered with the Commission or an applicable exemption is available therefor and provided that the Holder shall have furnished to the Company an opinion of counsel in form and substance reasonably satisfactory to the Company, to the effect that such transfer is exempt from the registration requirements of the Securities Act and any applicable state securities laws.

1.3 COMPANY ACKNOWLEDGMENT. The Company will, at the time of the exercise of this Warrant, upon request of the Holder hereof, acknowledge in writing its continuing obligation to afford to such Holder the registration rights to which such Holder shall continue to be entitled

3

after such exercise in accordance with the provisions of a Registration Rights Agreement dated the date hereof (the "Registration Rights Agreement").

1.4 LIMITATION ON EXERCISE. Notwithstanding the rights of the Holder to exercise all or a portion of this Warrant as described herein, such exercise rights shall be limited, solely to the extent set forth in the Purchase Agreement as if such provisions were specifically set forth herein. In addition, the number of shares of Common Stock issuable upon exercise of this Warrant is subject to reduction as specified in Section 10.3 of the Purchase Agreement.

2. DELIVERY OF STOCK CERTIFICATES, ETC., ON EXERCISE. As soon as practicable after the exercise of this Warrant, and in any event within three (3) Business Days thereafter, the Company at its expense (including the payment by it of any applicable issue, stamp or transfer taxes) will cause to be issued in the name of and delivered to the Holder thereof, or, to the extent permissible hereunder, to such other person as such Holder may direct, a certificate or certificates for the number of fully paid and nonassessable shares of Common Stock (or Other Securities) to which such Holder shall be entitled on such exercise, plus, in lieu of any fractional share to which such Holder would otherwise be entitled, cash equal to such fraction multiplied by the then applicable Purchase Price, together with any other stock or other securities and property (including cash, where applicable) to which such Holder is entitled upon such exercise pursuant to Section 1 or otherwise.

3. ADJUSTMENT FOR EXTRAORDINARY EVENTS. The Purchase Price to be paid by the Holder upon exercise of this Warrant, and the consideration to be received upon exercise of this Warrant, shall be adjusted in case at any time or from time to time pursuant to Article 11 of the Purchase Agreement as if such provisions were specifically set forth herein.

4. NO IMPAIRMENT. The Company will not, by amendment of its Certificate of Incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such action as may be necessary or appropriate in order to protect the rights of the Holder of this Warrant against impairment. Without limiting the generality of the foregoing, the Company (a) will not increase the par value of any shares of stock receivable on the exercise of this Warrant above the amount payable therefor on such exercise, (b) will take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and unassessable shares of stock on the exercise of this Warrant, and (c) will not transfer all or substantially all of its properties and assets to any other person (corporate or otherwise), or consolidate with or merge into any other person or permit any such person to consolidate with or merge into the Company (if the Company is not the surviving person), unless such other person shall

expressly assume in writing and will be bound by all the terms of this Warrant.

5. CERTIFICATE AS TO ADJUSTMENTS. In each case of any adjustment or readjustment in the shares of Common Stock (or Other Securities) issuable on the exercise of this Warrant, the Company will promptly cause its principal financial officer to compute such adjustment or

4

readjustment in accordance with the terms of this Warrant and prepare a certificate setting forth such adjustment or readjustment and showing in detail the facts upon which such adjustment or readjustment is based, including a statement of (a) the consideration received or receivable by the Company for any additional shares of Common Stock (or Other Securities) issued or sold or deemed to have been issued or sold, (b) the number of shares of Common Stock (or Other Securities) outstanding or deemed to be outstanding, and (c) the Purchase Price and the number of shares of Common Stock to be received upon exercise of this Warrant, in effect immediately prior to such issue or sale and as adjusted and readjusted as provided in this Warrant. The Company will forthwith mail a copy of each such certificate to the Holder of this Warrant, and will, on the written request at any time of the Holder of this Warrant, furnish to such Holder a like certificate setting forth the Purchase Price at the time in effect and showing how it was calculated.

6. NOTICES OF RECORD DATE, ETC.

In the event of

(a) any taking by the Company of a record of the Holders of any class of securities for the purpose of determining the Holders thereof who are entitled to receive any dividend or other distribution, or any right to subscribe for, purchase or otherwise acquire any shares of stock of any class or any other securities or property, or to receive any other right, or

(b) any capital reorganization of the Company, any reclassification or recapitalization of the capital stock of the Company or any transfer of all or substantially all the assets of the Company to or consolidation or merger of the Company with or into any other Person, or

(c) any voluntary or involuntary dissolution, liquidation or winding-up of the Company,

then and in each such event the Company will mail or cause to be mailed to the Holder of this Warrant a notice specifying (i) the date on which any such record is to be taken for the purpose of such dividend, distribution or right, and stating the amount and character of such dividend, distribution or right, and (ii) the date on which any such reorganization, reclassification, recapitalization, transfer, consolidation, merger, dissolution, liquidation or winding-up is to take place, and the time, if any, as of which the Holders of record of Common Stock (or Other Securities) shall be entitled to exchange their shares of Common Stock (or Other Securities) for securities or other property deliverable on such reorganization, reclassification, recapitalization, transfer, consolidation, merger, dissolution, liquidation or winding-up. Such notice shall be mailed at least 20 days prior to the date specified in such notice on which any action is to be taken.

7. RESERVATION OF STOCK, ETC. ISSUABLE ON EXERCISE OF WARRANT. The Company will at all times reserve and keep available, solely for issuance and delivery on the exercise of this Warrant, all shares of Common Stock (or Other Securities) from time to time issuable on the exercise of this Warrant.

5

8. EXCHANGE OF WARRANT. On surrender for exchange of this Warrant, properly endorsed and in compliance with the restrictions on transfer set forth in the legend on the face of this Warrant, to the Company, the Company at its expense will issue and deliver to or on the order of the Holder thereof a new Warrant of like tenor, in the name of such Holder or as such Holder (on payment by such Holder of any applicable transfer taxes) may direct, calling in the aggregate on the face or faces thereof for the number of shares of Common Stock

called for on the face of the Warrant so surrendered or for such lesser number of shares of Common Stock as may be reflected on the Warrant Exercise Ledger attached as Annex B.

9. REPLACEMENT OF WARRANT. On receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant and, in the case of any such loss, theft or destruction of this Warrant, on delivery of an indemnity agreement or security reasonably satisfactory in form and amount to the Company or, in the case of any such mutilation, on surrender and cancellation of this Warrant, the Company at its expense will execute and deliver, in lieu thereof, a new Warrant of like tenor.

10. REMEDIES. The Company stipulates that the remedies at law of the Holder of this Warrant in the event of any default or threatened default by the Company in the performance of or compliance with any of the terms of this Warrant are not and will not be adequate, and that such terms may be specifically enforced by a decree for the specific performance of any agreement contained herein or by an injunction against a violation of any of the terms hereof or otherwise.

11. NEGOTIABILITY, ETC.. This Warrant is issued upon the following terms, to all of which each Holder or owner hereof by the taking hereof consents and agrees:

(a) until this Warrant is transferred on the books of the Company, the Company may treat the registered Holder hereof as the absolute owner hereof for all purposes, notwithstanding any notice to the contrary; and

(b) this Warrant may not be sold, transferred or assigned except pursuant to an effective registration statement under the Securities Act or pursuant to an applicable exemption therefrom.

12. REGISTRATION RIGHTS. The Company is obligated to register the shares of Common Stock issuable upon exercise of this Warrant in accordance with the terms of the Registration Rights Agreement.

13. WARRANT REDEMPTION. Upon occurrence of the events described in Sections 3.4 and 10.4(c) of the Purchase Agreement, the Company, at the request of Holder, shall redeem all outstanding Warrants that remain unexercised at a redemption price equal to the greater of (x) an appraised value of the Warrants, as determined by Black Sholes, on the date they are called for redemption and (y) the number of Warrants being redeemed multiplied by the excess of (A) the average Closing Bid Price of the Common Stock for the five trading days immediately prior to the date that the Warrants are called for redemption over (B) the exercise price of the Warrants.

6

14. NOTICES, ETC. All notices and other communications from the Company to the Holder of this Warrant shall be mailed by first class registered or certified mail, postage prepaid, at such address as may have been furnished to the Company in writing by such Holder or, until any such Holder furnishes to the Company any address, then to, and at the address of, the last Holder of this Warrant who has so furnished an address to the Company.

15. MISCELLANEOUS. This Warrant and any term hereof may be changed, waived, discharged or terminated only by an instrument in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought. This Warrant shall be construed and enforced in accordance with and governed by the internal laws of the State of Massachusetts. The headings in this Warrant are for the purposes of reference only, and shall not limit or otherwise affect any of the terms hereof. The invalidity or unenforceability of any provision hereof shall in no way affect the validity or enforceability of any other provision.

7

SIGNATURE PAGE TO KIPHART WARRANT

DATED as of August 25, 2000.

BOSTON BIOMEDICA, INC.

By: /s/ Kevin W. Quinlan

Name: Kevin W. Quinlan
Title: President

8

EXHIBIT A
FORM OF NOTICE EXERCISE - WARRANT
(To be executed only upon exercise
of the Warrant in whole or in part)

To _____

The undersigned registered Holder of the accompanying Warrant, hereby exercises such Warrant or portion thereof for, and purchases thereunder, _____ (1) shares of Common Stock (as defined in such Warrant) and herewith makes payment therefor in the amount and manner set forth below, as of the date written below. The undersigned requests that the certificates for such shares of Common Stock be issued in the name of, and delivered to, _____ whose address is _____.

The Exercise Price is paid as follows:

Certified Bank draft payable to the Company in the amount of \$ _____.

Wire transfer to the account of the Company in the amount of \$ _____.

Upon exercise pursuant to this Notice of Exercise, the Holder will be in compliance with the Limitation on Exercise (as defined in the Securities Purchase Agreement pursuant to which this Warrant was issued).

The Holder of the shares of Common Stock received upon exercise of the Warrant (the "Common Shares"), covenants and agrees that the Common Shares are being acquired as an investment and not with a view to the distribution thereof in violation of the Securities Act and that the Common Shares may not be transferred, sold, assigned, hypothecated or otherwise disposed of, in whole or in part except as provided in the legend on the first page of this Warrant and provided that the Holder shall have furnished the Company an opinion of counsel in form and substance reasonably acceptable to the Company to the effect that such transfer is exempt from the registration requirements of the Securities Act and any applicable state securities laws.*

Date: _____

(Name must conform to name of Holder as specified on the face of the Warrant)

By: _____

Name: _____

Title: _____

Address of Holder: _____

Date of exercise: _____

* If shares of common Stock are to be issued to anyone other than the Holder, this covenant and representation must be made by such other Person.

1. Insert the number of shares of Common Stock as to which the accompanying Warrant is being exercised. In the case of partial exercise, a new Warrant or Warrant will be issued and delivered, representing the unexercised portion of the accompanying Warrant, to the Holder surrendering the same.

WARRANT EXERCISE LEDGER

<TABLE>

<CAPTION>

DATE	ORIGINAL NUMBER OF WARRANTS	WARRANTS EXERCISED	EXERCISE PRICE PAID	NEW BALANCE OF WARRANTS	ISSUER INITIALS	HOLDER INITIALS
<S>	<C>	<C>	<C>	<C>	<C>	<C>

</TABLE>

BOSTON BIOMEDICA, INC.

HOLDER:

By: _____
Name: _____
Title: _____

By: _____
Name: _____
Title: _____

Exhibit 4.9

Warrant to Shoreline Micro-Cap Fund, L.P.

THIS COMMON STOCK PURCHASE WARRANT HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"). THE HOLDER HEREOF, BY PURCHASING THIS COMMON STOCK PURCHASE WARRANT, AGREES FOR THE BENEFIT OF THE COMPANY THAT SUCH SECURITIES MAY BE OFFERED, SOLD OR OTHERWISE TRANSFERRED ONLY (A) TO THE COMPANY, (B) PURSUANT TO AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT, OR (C) IF REGISTERED UNDER THE SECURITIES ACT AND ANY APPLICABLE STATE SECURITIES LAWS.

BOSTON BIOMEDICA, INC.

COMMON STOCK PURCHASE WARRANT

No. 5

Number of shares: 7,822 Holder: Shoreline Micro-Cap Fund, L.P.

Expiration Date: August 25, 2005 c/o William Blair & Company

222 West Adams Street

Chicago, IL 60606

Attn: Richard P. Kiphart

Purchase Price Per Share: \$3.60

For identification only. The governing terms of this Warrant
are set forth below.

Boston Biomedica, Inc., a Massachusetts corporation (the "COMPANY"), hereby certifies that, for value received, Shoreline Micro-Cap Fund, L.P., or its assigns (the "HOLDER"), is entitled, subject to the terms set forth below, to purchase from the Company at any time or from time to time after the date hereof and prior to the fifth anniversary hereof (the "EXERCISE PERIOD"), at the Purchase Price hereinafter set forth, seven thousand eight hundred and twenty-two (7,822) shares of the fully paid and nonassessable shares of common stock of the Company, \$0.01 par value per share (the "Common Stock"). The number and character of such shares of Common Stock and the Purchase Price are subject to adjustment as provided herein.

The purchase price per share of Common Stock issuable upon exercise of this Warrant (the "PURCHASE PRICE") shall initially be equal to 120% of the average Closing Bid Price as published by Bloomberg, L.P. of the Common Stock on the day immediately preceding the date hereof; PROVIDED, HOWEVER, that the Purchase Price shall be adjusted from time to time as provided herein.

Capitalized terms used herein not otherwise defined shall have the meanings ascribed thereto in that certain Securities Purchase Agreement of even date herewith between the Company, the

1

Holder and Richard T. Kiphart (the "Purchase Agreement"). By execution of this Warrant, the Holder hereof agrees to be bound by and to benefit from the provisions of the Purchase Agreement set forth herein. As used herein the following terms, unless the context otherwise requires, have the following respective meanings:

(a) The term "COMPANY" shall include Boston Biomedica, Inc. and any corporation that shall succeed or assume the obligations of such corporation hereunder.

(b) The term "COMMON STOCK" includes (a) the Company's common stock, par value \$0.01 per share, (b) any other capital stock of any class or classes (however designated) of the Company, authorized on or after the date hereof, the Holders of which shall have the right, without limitation as to amount, either to all or to a share of the balance of current dividends and liquidating dividends after the

payment of dividends and distributions on any shares entitled to preference, and the Holders of which shall ordinarily, in the absence of contingencies, be entitled to vote for the election of a majority of directors of the Company (even though the right so to vote has been suspended by the happening of such a contingency) and (c) any other securities into which or for which any of the securities described in (a) or (b) may be converted or exchanged pursuant to a plan of recapitalization, reorganization, merger, sale of assets or otherwise.

(c) The term "OTHER SECURITIES" refers to any stock (other than Common Stock) and other securities of the Company or any other person (corporate or otherwise) that the Holder of this Warrant at any time shall be entitled to receive, or shall have received, on the exercise of this Warrant, in lieu of or in addition to Common Stock, or that at any time shall be issuable or shall have been issued in exchange for or in replacement of Common Stock or Other Securities pursuant to Section 4 or otherwise.

1. EXERCISE OF WARRANT.

1.1 METHOD OF EXERCISE.

(a) This Warrant may be exercised in whole or in part (but not as to a fractional share of Common Stock), at any time and from time to time during the Exercise Period by the Holder hereof by delivery of a notice of exercise (a "NOTICE OF EXERCISE") substantially in the form attached hereto as EXHIBIT A via facsimile to the Company. Prior to sending the Notice of Exercise via facsimile, the Holder shall give Richard Schumacher notice of its intent to submit a Notice of Exercise by telephone (and if Mr. Schumacher is not available to be reached by telephone, either Kevin Quinlan or Kathi Benjamin by telephone, or such other person designated by the Company after the Closing Date). Promptly thereafter the Holder shall surrender this Warrant (if the entire amount of the Warrant is subject to the Notice of Exercise) to the Company at its principal office via overnight delivery service, accompanied by payment of the Purchase Price multiplied by the number of shares of Common Stock for which this Warrant is being exercised (the "EXERCISE PRICE"). Payment of the Exercise Price shall be made, at the option of the Holder, (i) by check or bank draft payable to the order of the Company, or (ii) by wire transfer to the account of the Company.

2

Upon exercise, the Holder shall be entitled to receive within three Trading Days of the Exercise Date (as defined herein), one or more certificates, issued in the Holder's name or in such name or names as the Holder may direct, subject to the limitations on transfer contained herein, for the number of shares of Common Stock so purchased. The shares of Common Stock so purchased shall be deemed to be issued as of the close of business on the date on which the Company shall have received from the Holder payment in full of the Exercise Price (the "EXERCISE DATE").

(b) Upon exercise of a portion of this Warrant in accordance with the terms hereof, records showing the amount so exercised and the date of exercise shall be maintained on a ledger substantially in the form of ANNEX B attached hereto (an originally signed and executed copy of which shall be delivered to the Company with each Notice of Exercise). The Company shall maintain the originally signed and executed ledger and the Holder shall maintain a copy thereof. Upon execution of the exercise of the Warrants contemplated by the Notice of Exercise, the Company shall deliver to the Holder a copy of ANNEX B signed and executed by the Company, and the Holder shall deliver to the Company a copy of Annex B signed by the Holder. It is specifically contemplated that the Company shall act as the calculation agent for all exercises of this Warrant. The Holder and any assignee, by acceptance of this Warrant, acknowledges and agrees that, by reason of the provisions of this paragraph, following an exercise of a portion of this Warrant, the number of shares of Common Stock represented by this Warrant will be the amount indicated on ANNEX B attached hereto (which may be less than the amount stated on the face hereof).

(c) In the event there is a dispute as to the number of shares of Common Stock the Holder is entitled to receive upon exercise of this Warrant, the Company shall issue to the Holder the number of shares not in dispute and the Company and the Holder will use their best efforts to resolve such dispute within one Business Day following the receipt of a Notice of Exercise. If such dispute cannot be resolved within such one-day period, the Company and the Holder shall submit the dispute to an independent accountant mutually agreed upon by the Company and the Holder to make a final and binding determination of the number of shares owed to the Holder. The Company shall issue shares of Common Stock owed to Holder as a result of the resolution of the dispute within two Business Days following the receipt of the accountant's independent determination.

1.2 REGULATION D RESTRICTIONS. The Holder hereof represents and warrants to the Company that it has acquired this Warrant and anticipates acquiring the shares of Common Stock issuable upon exercise of the Warrant solely for its own account for investment purposes and not with a view to or for resale of such securities unless such resale has been registered with the Commission or an applicable exemption is available therefor and provided that the Holder shall have furnished to the Company an opinion of counsel in form and substance reasonably satisfactory to the Company, to the effect that such transfer is exempt from the registration requirements of the Securities Act and any applicable state securities laws.

1.3 COMPANY ACKNOWLEDGMENT. The Company will, at the time of the exercise of this Warrant, upon request of the Holder hereof, acknowledge in writing its continuing obligation

3

to afford to such Holder the registration rights to which such Holder shall continue to be entitled after such exercise in accordance with the provisions of a Registration Rights Agreement dated the date hereof (the "Registration Rights Agreement").

1.4 LIMITATION ON EXERCISE. Notwithstanding the rights of the Holder to exercise all or a portion of this Warrant as described herein, such exercise rights shall be limited, solely to the extent set forth in the Purchase Agreement as if such provisions were specifically set forth herein. In addition, the number of shares of Common Stock issuable upon exercise of this Warrant is subject to reduction as specified in Section 10.3 of the Purchase Agreement.

2. DELIVERY OF STOCK CERTIFICATES, ETC., ON EXERCISE. As soon as practicable after the exercise of this Warrant, and in any event within three (3) Business Days thereafter, the Company at its expense (including the payment by it of any applicable issue, stamp or transfer taxes) will cause to be issued in the name of and delivered to the Holder thereof, or, to the extent permissible hereunder, to such other person as such Holder may direct, a certificate or certificates for the number of fully paid and nonassessable shares of Common Stock (or Other Securities) to which such Holder shall be entitled on such exercise, plus, in lieu of any fractional share to which such Holder would otherwise be entitled, cash equal to such fraction multiplied by the then applicable Purchase Price, together with any other stock or other securities and property (including cash, where applicable) to which such Holder is entitled upon such exercise pursuant to Section 1 or otherwise.

3. ADJUSTMENT FOR EXTRAORDINARY EVENTS. The Purchase Price to be paid by the Holder upon exercise of this Warrant, and the consideration to be received upon exercise of this Warrant, shall be adjusted in case at any time or from time to time pursuant to Article 11 of the Purchase Agreement as if such provisions were specifically set forth herein.

4. NO IMPAIRMENT. The Company will not, by amendment of its Certificate of Incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such action as may be necessary or appropriate in order to protect the rights of the Holder of this Warrant against impairment. Without limiting the generality of the foregoing,

the Company (a) will not increase the par value of any shares of stock receivable on the exercise of this Warrant above the amount payable therefor on such exercise, (b) will take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and unassessable shares of stock on the exercise of this Warrant, and (c) will not transfer all or substantially all of its properties and assets to any other person (corporate or otherwise), or consolidate with or merge into any other person or permit any such person to consolidate with or merge into the Company (if the Company is not the surviving person), unless such other person shall expressly assume in writing and will be bound by all the terms of this Warrant.

5. CERTIFICATE AS TO ADJUSTMENTS. In each case of any adjustment or readjustment in the shares of Common Stock (or Other Securities) issuable on the exercise of this Warrant, the Company will promptly cause its principal financial officer to compute such adjustment or readjustment in

4

accordance with the terms of this Warrant and prepare a certificate setting forth such adjustment or readjustment and showing in detail the facts upon which such adjustment or readjustment is based, including a statement of (a) the consideration received or receivable by the Company for any additional shares of Common Stock (or Other Securities) issued or sold or deemed to have been issued or sold, (b) the number of shares of Common Stock (or Other Securities) outstanding or deemed to be outstanding, and (c) the Purchase Price and the number of shares of Common Stock to be received upon exercise of this Warrant, in effect immediately prior to such issue or sale and as adjusted and readjusted as provided in this Warrant. The Company will forthwith mail a copy of each such certificate to the Holder of this Warrant, and will, on the written request at any time of the Holder of this Warrant, furnish to such Holder a like certificate setting forth the Purchase Price at the time in effect and showing how it was calculated.

6. NOTICES OF RECORD DATE, ETC.

In the event of

(a) any taking by the Company of a record of the Holders of any class of securities for the purpose of determining the Holders thereof who are entitled to receive any dividend or other distribution, or any right to subscribe for, purchase or otherwise acquire any shares of stock of any class or any other securities or property, or to receive any other right, or

(b) any capital reorganization of the Company, any reclassification or recapitalization of the capital stock of the Company or any transfer of all or substantially all the assets of the Company to or consolidation or merger of the Company with or into any other Person, or

(c) any voluntary or involuntary dissolution, liquidation or winding-up of the Company,

then and in each such event the Company will mail or cause to be mailed to the Holder of this Warrant a notice specifying (i) the date on which any such record is to be taken for the purpose of such dividend, distribution or right, and stating the amount and character of such dividend, distribution or right, and (ii) the date on which any such reorganization, reclassification, recapitalization, transfer, consolidation, merger, dissolution, liquidation or winding-up is to take place, and the time, if any, as of which the Holders of record of Common Stock (or Other Securities) shall be entitled to exchange their shares of Common Stock (or Other Securities) for securities or other property deliverable on such reorganization, reclassification, recapitalization, transfer, consolidation, merger, dissolution, liquidation or winding-up. Such notice shall be mailed at least 20 days prior to the date specified in such notice on which any action is to be taken.

7. RESERVATION OF STOCK, ETC. ISSUABLE ON EXERCISE OF WARRANT. The Company will at all times reserve and keep available, solely for issuance and delivery on the exercise of this Warrant, all shares of Common Stock (or Other Securities) from time to time issuable on the exercise of this Warrant.

8. EXCHANGE OF WARRANT. On surrender for exchange of this Warrant, properly endorsed and in compliance with the restrictions on transfer set forth in the legend on the face of this Warrant, to the Company, the Company at its expense will issue and deliver to or on the order of the Holder thereof a new Warrant of like tenor, in the name of such Holder or as such Holder (on payment by such Holder of any applicable transfer taxes) may direct, calling in the aggregate on the face or faces thereof for the number of shares of Common Stock called for on the face of the Warrant so surrendered or for such lesser number of shares of Common Stock as may be reflected on the Warrant Exercise Ledger attached as Annex B.

9. REPLACEMENT OF WARRANT. On receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant and, in the case of any such loss, theft or destruction of this Warrant, on delivery of an indemnity agreement or security reasonably satisfactory in form and amount to the Company or, in the case of any such mutilation, on surrender and cancellation of this Warrant, the Company at its expense will execute and deliver, in lieu thereof, a new Warrant of like tenor.

10. REMEDIES. The Company stipulates that the remedies at law of the Holder of this Warrant in the event of any default or threatened default by the Company in the performance of or compliance with any of the terms of this Warrant are not and will not be adequate, and that such terms may be specifically enforced by a decree for the specific performance of any agreement contained herein or by an injunction against a violation of any of the terms hereof or otherwise.

11. NEGOTIABILITY, ETC.. This Warrant is issued upon the following terms, to all of which each Holder or owner hereof by the taking hereof consents and agrees:

(a) until this Warrant is transferred on the books of the Company, the Company may treat the registered Holder hereof as the absolute owner hereof for all purposes, notwithstanding any notice to the contrary; and

(b) this Warrant may not be sold, transferred or assigned except pursuant to an effective registration statement under the Securities Act or pursuant to an applicable exemption therefrom.

12. REGISTRATION RIGHTS. The Company is obligated to register the shares of Common Stock issuable upon exercise of this Warrant in accordance with the terms of the Registration Rights Agreement.

13. WARRANT REDEMPTION. Upon occurrence of the events described in Sections 3.4 and 10.4(c) of the Purchase Agreement, the Company, at the request of Holder, shall redeem all outstanding Warrants that remain unexercised at a redemption price equal to the greater of (x) an appraised value of the Warrants, as determined by Black Sholes, on the date they are called for redemption and (y) the number of Warrants being redeemed multiplied by the excess of (A) the average Closing Bid Price of the Common Stock for the five trading days immediately prior to the date that the Warrants are called for redemption over (B) the exercise price of the Warrants.

14. NOTICES, ETC. All notices and other communications from the Company to the Holder of this Warrant shall be mailed by first class registered or certified mail, postage prepaid, at such address as may have been furnished to the Company in writing by such Holder or, until any such Holder furnishes to the Company any address, then to, and at the address of, the last Holder of this Warrant who has so furnished an address to the Company.

15. MISCELLANEOUS. This Warrant and any term hereof may be changed, waived, discharged or terminated only by an instrument in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought. This Warrant shall be construed and enforced in accordance with and governed by the internal laws of the State of Massachusetts. The headings in this Warrant are for the purposes of reference only, and shall not limit or otherwise affect any of the terms hereof. The invalidity or unenforceability of

any provision hereof shall in no way affect the validity or enforceability of any other provision.

7

SIGNATURE PAGE TO SHORELINE WARRANT

DATED as of August 25, 2000.

BOSTON BIOMEDICA, INC.

By: /s/ Kevin W. Quinlan
Name: Kevin W. Quinlan
Title: President

8

EXHIBIT A
FORM OF NOTICE EXERCISE - WARRANT
(To be executed only upon exercise
of the Warrant in whole or in part)

To _____

The undersigned registered Holder of the accompanying Warrant, hereby exercises such Warrant or portion thereof for, and purchases thereunder, _____ (1) shares of Common Stock (as defined in such Warrant) and herewith makes payment therefor in the amount and manner set forth below, as of the date written below. The undersigned requests that the certificates for such shares of Common Stock be issued in the name of, and delivered to, _____ whose address is _____.

The Exercise Price is paid as follows:

// Certified Bank draft payable to the Company in the amount of \$ _____.
// Wire transfer to the account of the Company in the amount of \$ _____.

Upon exercise pursuant to this Notice of Exercise, the Holder will be in compliance with the Limitation on Exercise (as defined in the Securities Purchase Agreement pursuant to which this Warrant was issued).

The Holder of the shares of Common Stock received upon exercise of the Warrant (the "Common Shares"), covenants and agrees that the Common Shares are being acquired as an investment and not with a view to the distribution thereof in violation of the Securities Act and that the Common Shares may not be transferred, sold, assigned, hypothecated or otherwise disposed of, in whole or in part except as provided in the legend on the first page of this Warrant and provided that the Holder shall have furnished the Company an opinion of counsel in form and substance reasonably acceptable to the Company to the effect that such transfer is exempt from the registration requirements of the Securities Act and any applicable state securities laws.*

Date: _____

(Name must conform to name of Holder as specified on the face of the Warrant)

By: _____
Name: _____
Title: _____
Address of Holder: _____

Date of exercise: _____

* If shares of common Stock are to be issued to anyone other than the Holder, this covenant and representation must be made by such other Person.

(1) Insert the number of shares of Common Stock as to which the accompanying Warrant is being exercised. In the case of a partial exercise, a

new Warrant or Warrants will be issued and delivered, representing the unexercised portion of the accompanying Warrant, to the Holder surrendering the same.

ANNEX B

WARRANT EXERCISE LEDGER

<TABLE>
<CAPTION>

DATE	ORIGINAL NUMBER OF WARRANTS	WARRANTS EXERCISED	EXERCISE PRICE PAID	NEW BALANCE OF WARRANTS	ISSUER INITIALS	HOLDER INITIALS
<S>	<C>	<C>	<C>	<C>	<C>	<C>

</TABLE>

BOSTON BIOMEDICA, INC.

HOLDER:

By: _____
Name: _____
Title: _____

By: _____
Name: _____
Title: _____

Exhibit 4.10

Registration Rights Agreement

REGISTRATION RIGHTS AGREEMENT

REGISTRATION RIGHTS AGREEMENT (this "Agreement"), dated as of August 25, 2000, between Boston Biomedica, Inc., a Massachusetts corporation (the "Company"), and Richard P. Kiphart ("Kiphart") and Shoreline Micro-Cap Fund, L.P. ("Shoreline").

1. INTRODUCTION.

1.1 SECURITIES PURCHASE AGREEMENT. The Company, Kiphart and Shoreline as of the date hereof executed that certain Securities Purchase Agreement (the "Securities Purchase Agreement"), pursuant to which the Company has agreed, among other things, to issue up to an aggregate of One Million Dollars (\$1,000,000.00) (U.S.) principal amount of 3% Senior Subordinated Convertible Debentures of the Company (the "Debentures") to Kiphart and Shoreline or its successors, assigns or transferees (collectively, the "holders"). The Debentures are convertible into an indeterminable number of shares (the "Debenture Conversion Shares") of the Company's common stock par value, \$0.01 per share (the "Common Stock") pursuant to the terms of the Debentures. In addition, pursuant to the terms of the Securities Purchase Agreement and the transactions contemplated thereby, the Company has agreed to issue to the Kiphart common stock purchase warrants exercisable for up to an aggregate of 27,734 shares of the Company's Common Stock and common stock purchase warrants exercisable for up to an aggregate of 7,822 shares of Common Stock to Shoreline (collectively the "Warrant Shares"). The number of Debenture Conversion Shares and Warrant Shares is subject to adjustment upon the occurrence of stock splits, recapitalizations and similar events occurring after the date hereof. Collectively, Shoreline and Kiphart are sometimes referred to herein as the "Investors."

1.2 DEFINITION OF SECURITIES. The Debenture Conversion Shares and the Warrant Shares are herein referred to as the "Securities."

1.3 NATIONAL MARKET REPRESENTATION. The Company represents and warrants that the Company's Common Stock is currently eligible for trading on the Nasdaq National Market under the symbol "BBII." Certain capitalized terms used in this Agreement are defined in Section 3 hereof; references to sections shall be to sections of this Agreement.

2. REGISTRATION UNDER SECURITIES ACT, ETC.

2.1 MANDATORY REGISTRATION.

(a) REGISTRATION OF REGISTRABLE SECURITIES. The Company shall prepare and file on or before the 30th day following the date hereof (the "Filing Date") a registration statement (the "Registration Statement") covering the resale of the Registrable Securities. The Company shall use its best efforts to cause the Registration Statement to be declared effective by the

Commission on the earlier of (i) 90 days following the date hereof, (ii) ten (10) days following the receipt of a "No Review" or similar letter from the Commission or (iii) the first business day following the day the Commission determines the Registration Statement eligible to be declared effective (the "Required Effectiveness Date"). Nothing contained herein shall be deemed to limit the number of Registrable Securities to be registered by the Company hereunder. As a result, should the Registration Statement not relate to the maximum number of Registrable Securities acquired by (or potentially acquirable by) the holders thereof upon conversion of the Debentures, or exercise of the Common Stock Purchase Warrants described in Section 1 above, the Company shall be required to promptly file a separate registration statement (utilizing Rule 462 promulgated under the Securities Act, where applicable) relating to such Registrable Securities which then remain unregistered. The provisions of this Agreement shall relate to any such Registration Statement and any such separate registration statement as if it were an amendment to the Registration Statement.

(b) REGISTRATION STATEMENT FORM. Registrations under this Section 2.1 shall be on Form S-3 or such other appropriate successor registration form of the Commission as shall permit the disposition of such Registrable Securities in accordance with the intended method or methods of disposition specified by the Investors; provided, however, such intended method of disposition shall not include an underwritten offering of the Registrable Securities.

(c) EXPENSES. The Company will pay all Registration Expenses in connection with any registration required by this Section 2.1.

(d) EFFECTIVE REGISTRATION STATEMENT. A registration pursuant to this Section 2.1 shall not be deemed to have been effected (i) unless a registration statement with respect thereto has become effective within the time period specified herein, provided that a registration which does not become effective after the Company filed a registration statement with respect thereto solely by reason of the refusal to proceed of any holder of Registrable Securities (other than a refusal to proceed based upon the advice of counsel in the form of a letter signed by such counsel and provided to the Company relating to a disclosure matter unrelated to such holder) shall be deemed to have been effected by the Company unless the holders of the Registrable Securities shall have elected to pay all Registration Expenses in connection with such registration, (ii) if, after it has become effective, such registration becomes subject to any stop order, injunction or other order or extraordinary requirement of the Commission or other governmental agency or court for any reason or (iii) if, after it has become effective, such registration ceases to be effective for more than an aggregate of twenty (20) days.

(e) PLAN OF DISTRIBUTION. The Company hereby agrees that the Registration Statement shall include a plan of distribution section reasonably acceptable to the Investors; provided, however, such plan of distribution section shall be modified by the Company so as to not provide for the disposition of the Registrable Securities on the basis of an underwritten offering.

2.2 INCIDENTAL REGISTRATION.

(a) RIGHT TO INCLUDE REGISTRABLE SECURITIES. If at any time after the date hereof but before the third anniversary of the date hereof, the Company proposes to register any of

its securities under the Securities Act (other than by a registration in connection with an acquisition in a manner which would not permit registration of Registrable Securities for sale to the public, on Form S-8, or any successor form thereto, on Form S-4, or any successor form thereto and other than pursuant to Section 2.1), on an underwritten basis (either best-efforts or firm-commitment), then, the Company will each such time give prompt written notice to all holders of Registrable Securities of its intention to do so and of such holders' rights under this Section 2.2. Upon the written request of any such holder made within twenty (20) days after the receipt of any such notice (which request shall specify the Registrable Securities intended to be disposed of by such holder and the intended method of disposition thereof), the Company will, subject to the terms of this Agreement, use its commercially reasonable best efforts to effect the registration under the Securities Act of the Registrable Securities, to the extent requisite to permit the disposition (in accordance with the intended methods thereof as aforesaid) of such Registrable Securities so to be registered, by inclusion of such Registrable Securities in the registration statement which covers the securities which the Company proposes to register, provided that if, at any time after written notice of its intention to register any securities and prior to the effective date of the registration statement filed in connection with such registration, the Company shall determine for any reason either not to register or to delay registration of such securities, the Company may, at its election, give written notice of such determination to each holder and, thereupon, (i) in the case of a determination not to register, shall be relieved of this obligation to register any Registrable Securities in connection with such registration (but not from

its obligation to pay the Registration Expenses in connection therewith), and (ii) in the case of a determination to delay registering, shall be permitted to delay registering any Registrable Securities, for the same period as the delay in registering such other securities. No registration effected under this Section 2.2 shall relieve the Company of its obligation to effect any registration under Section 2.1, nor shall any such registration hereunder be deemed to have been effected pursuant to Section 2.1. The Company will pay all Registration Expenses in connection with each registration of Registrable Securities requested pursuant to this Section 2.2. The right provided the holders of the Registrable Securities pursuant to this Section shall be exercisable at their sole discretion.

(b) **PRIORITY IN INCIDENTAL REGISTRATIONS.** If the managing underwriter of the underwritten offering contemplated by this Section 2.2 shall inform the Company and holders of the Registrable Securities requesting such registration by letter of its belief that the number of securities requested to be included in such registration exceeds the number which can be sold in such offering, then the Company will include in such registration, to the extent of the number which the Company is so advised can be sold in such offering, (i) first securities proposed by the Company to be sold for its own account, and (ii) second Registrable Securities and securities of other selling security holders requested to be included in such registration pro rata on the basis of the number of shares of such securities so proposed to be sold and so requested to be included; provided, however, the holders of Registrable Securities shall have priority to all shares sought to be included by officers and directors of the Company as well as holders of ten percent (10%) or more of the Company's Common Stock.

2.3 REGISTRATION PROCEDURES. If and whenever the Company is required to effect the registration of any Registrable Securities under the Securities Act as provided in Section 2.1 and, as applicable, 2.2, the Company shall, as expeditiously as possible:

3

(a) prepare and file with the Commission the Registration Statement or amendments thereto, to effect such registration (including such audited financial statements as may be required by the Securities Act or the rules and regulations promulgated thereunder) and thereafter use its commercially reasonable best efforts to cause such registration statement to be declared effective by the Commission, as soon as practicable, but in any event no later than the Required Effectiveness Date (with respect to a registration pursuant to Section 2.1); provided, however, that before filing such registration statement or any amendments thereto, the Company will furnish to the counsel selected by the holders of Registrable Securities which are to be included in such registration, copies of all such documents proposed to be filed;

(b) with respect to any registration statement pursuant to Section 2.1, prepare and file with the Commission such amendments and supplements to such registration statement and the prospectus used in connection therewith as may be necessary to keep such registration statement effective and to comply with the provisions of the Securities Act with respect to the disposition of all Registrable Securities covered by such registration statement until the earlier to occur of five (5) years after the date of this Agreement (subject to the right of the Company to suspend the effectiveness thereof for not more than 10 consecutive days or an aggregate of 30 days in such five (5) years period) or such time as all of the securities which are the subject of such registration statement cease to be Registrable Securities (such period, in each case, the "Registration Maintenance Period");

(c) furnish to each seller of Registrable Securities covered by such registration statement such number of conformed copies of such registration statement and of each such amendment and supplement thereto (in each case including all exhibits), such number of copies of the prospectus contained in such registration statement (including each preliminary prospectus and any summary prospectus) and any other prospectus filed under Rule 424 under the Securities Act, in conformity with the requirements of the Securities Act, and such other documents, as such seller and underwriter, if any, may reasonably request in order to facilitate the public sale or other disposition of the Registrable Securities owned by such seller;

(d) use its commercially reasonable best efforts to register or qualify all Registrable Securities and other securities covered by such registration statement under such other securities laws or blue sky laws as any seller thereof shall reasonably request, to keep such registrations or qualifications in effect for so long as such registration statement remains in effect, and take any other action which may be reasonably necessary to enable such seller to consummate the disposition in such jurisdictions of the securities owned by such seller, except that the Company shall not for any such purpose be required to qualify generally to do business as a foreign corporation in any jurisdiction wherein it would not but for the requirements of this subdivision (d) be obligated to be so qualified or to consent to general service of process in any such jurisdiction;

(e) use its commercially reasonable best efforts to cause all Registrable Securities covered by such registration statement to be registered with or approved by such other governmental agencies or authorities as may be necessary to enable the seller or sellers thereof to consummate the disposition of such Registrable Securities;

4

(f) furnish to each seller of Registrable Securities a signed counterpart, addressed to such seller, and the underwriters, if any, of:

(1) an opinion of counsel for the Company, dated the effective date of such registration statement (or, if such registration includes an underwritten public offering, an opinion dated the date of the closing under the underwriting agreement), reasonably satisfactory in form and substance to such seller including that the prospectus and any prospectus supplement forming a part of the Registration Statement does not contain an untrue statement of a material fact or omits a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading, and

(2) if such registration includes an underwritten public offering, a "comfort letter" dated the date of the closing and required to be delivered to the underwriter under the underwriting agreement, signed by the independent public accountants who have certified the Company's financial statements;

(g) notify the Sellers' Representative and its counsel promptly and confirm such advice in writing promptly after the Company has knowledge thereof:

(1) when the Registration Statement, the prospectus or any prospectus supplement related thereto or post-effective amendment to the Registration Statement has been filed, and, with respect to the Registration Statement or any post-effective amendment thereto, when the same has become effective;

(2) of any request by the Commission for amendments or supplements to the Registration Statement or the prospectus or for additional information;

(3) of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or the initiation of any proceedings by any Person for that purpose; and

(4) of the receipt by the Company of any notification with respect to the suspension of the qualification of any Registrable Securities for sale under the securities or blue sky laws of any jurisdiction or the initiation or threat of any proceeding for such purpose;

(h) notify each seller of Registrable Securities covered by such registration statement, at any time when a prospectus relating thereto is required to be delivered under the Securities Act, upon discovery that, or upon the happening of any event as a result of which, the prospectus included in such registration statement, as then in effect, includes an untrue statement of a material fact or omits to state any material facts required to be

stated therein or necessary to make the statements therein not misleading in the light of the circumstances then existing, and at the request of any such seller promptly prepare and furnish to such seller a reasonable number of copies of a supplement to or an amendment of such prospectus as may be necessary so that, as thereafter delivered to the purchasers of such securities, such prospectus shall

5

not include an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading in the light of the circumstances then existing;

(i) use its commercially reasonable best efforts to obtain the withdrawal of any order suspending the effectiveness of the Registration Statement at the earliest possible moment;

(j) otherwise use its commercially reasonable best efforts to comply with all applicable rules and regulations of the Commission, and make available to its security holders, as soon as reasonably practicable, an earnings statement covering the period of at least twelve months, but not more than eighteen months, beginning with the first full calendar month after the effective date of such registration statement, which earnings statement shall satisfy the provisions of Section 11(a) of the Securities Act and Rule 158 thereunder;

(k) use its commercially reasonable best efforts to list all Registrable Securities covered by such registration statement on any securities exchange on which any of the Registrable Securities are then listed.

The Company may require each seller of Registrable Securities as to which any registration is being effected to furnish the Company such information regarding such seller and the distribution of such securities as the Company may from time to time reasonably request in writing.

The Company will not file any registration statement pursuant to Section 2.1, or amendment thereto or any prospectus or any supplement thereto (including such documents incorporated by reference and proposed to be filed after the initial filing of the Registration Statement) to which the Sellers' Representative shall reasonably object, provided that the Company may file such documents in a form required by law or upon the advice of its counsel.

The Company represents and warrants to each holder of Registrable Securities that it has obtained all necessary waivers, consents and authorizations necessary to execute this Agreement and consummate the transactions contemplated hereby other than such waivers, consents and/or authorizations specifically contemplated by the Securities Purchase Agreement.

The Investors agree that, upon receipt of any notice from the Company of the occurrence of any event of the kind described in subdivision (h) of this Section 2.3, the Investors will forthwith discontinue the Investors' disposition of Registrable Securities pursuant to the Registration Statement relating to such Registrable Securities until such Investors' receipt of the copies of the supplemented or amended prospectus contemplated by subdivision (h) of this Section 2.3 and, if so directed by the Company, will deliver to the Company (at the Company's expense) all copies, other than permanent file copies, then in the Investors' possession of the prospectus relating to such Registrable Securities current at the time of receipt of such notice.

2.4 UNDERWRITTEN OFFERINGS.

6

(a) INCIDENTAL UNDERWRITTEN OFFERINGS. If the Company at any time proposes to register any of its securities under the Securities Act as contemplated by Section 2.2 and such securities are to be distributed by or through one or more underwriters, the Company will, if requested by any holder of Registrable Securities as provided in Section 2.2 and subject to the provisions of Section 2.2(a), use its commercially reasonable best efforts to arrange for such underwriters to include all the Registrable

Securities to be offered and sold by such holder among the securities to be distributed by such underwriters.

(b) **HOLDBACK AGREEMENTS.** Subject to such other reasonable requirements as may be imposed by the underwriter as a condition of inclusion of holder's Registrable Securities in the registration statement, each holder agrees by acquisition of Registrable Securities, if so required by the managing underwriter, not to sell, make any short sale of, loan, grant any option for the purchase of, effect any public sale or distribution of or otherwise dispose of, except as part of such underwritten registration, any equity securities of the Company, during such reasonable period of time requested by the underwriter; provided however, such period shall not exceed the 150 day period commencing 30 days prior to the commencement of such underwritten offering and ending 120 days following the completion of such underwritten offering.

(c) **PARTICIPATION IN UNDERWRITTEN OFFERINGS.** No holder of Registrable Securities may participate in any underwritten offering under Section 2.2 unless such holder of Registrable Securities (i) agrees to sell such Person's securities on the basis provided in any underwriting arrangements approved, subject to the terms and conditions hereof, approved by the Company and (ii) completes and executes all questionnaires, indemnities, underwriting agreements and other documents (other than powers of attorney) required under the terms of such underwriting arrangements. Notwithstanding the foregoing, no underwriting agreement (or other agreement in connection with such offering) shall require any holder of Registrable Securities to make any representations or warranties to or agreements with the Company or the underwriters other than representations and warranties contained in a writing furnished by such holder expressly for use in the related registration statement or representations, warranties or agreements regarding such holder, such holder's Registrable Securities and such holder's intended method of distribution and any other representation required by law.

2.5 **PREPARATION; REASONABLE INVESTIGATION.** In connection with the preparation and filing of each registration statement under the Securities Act pursuant to this Agreement, the Company will give Sellers' Representative and counsel and accountants for Sellers' Representative, the opportunity to participate in the preparation of such registration statement, each prospectus included therein or filed with the Commission, and each amendment thereof or supplement thereto, and will give each of them such access to its books and records and such opportunities to discuss the business of the Company with its officers and the independent public accountants who have certified its financial statements as shall be necessary, in the reasonable opinion of such holders' and such underwriters' respective counsel, to conduct a reasonable investigation within the meaning of the Securities Act.

2.6 **REGISTRATION DEFAULT FEE.** If the Registration Statement contemplated in Section 2.1 is (x) not declared effective by the Required Effectiveness Date or (y) such effectiveness

7

is not maintained for the Registration Maintenance Period, then the Company shall pay to the Investors the Default Fee specified in Section 10.4 of the Securities Purchase Agreement.

2.7 **INDEMNIFICATION.**

(a) **INDEMNIFICATION BY THE COMPANY.** In the event of any registration of any securities of the Company under the Securities Act, the Company will, and hereby does agree to indemnify and hold harmless the holder of any Registrable Securities covered by such registration statement, its directors and officers, each other Person who participates as an underwriter in the offering or sale of such securities and each other Person, if any, who controls such holder or any such underwriter within the meaning of the Securities Act against any losses, claims, damages or liabilities, joint or several, to which such holder or any such director or officer or underwriter or controlling person may become subject under the Securities Act or otherwise, insofar as such losses, claims, damages or liabilities (or actions or proceedings, whether commenced or threatened, in respect thereof) arise out of or are based upon any untrue statement or alleged untrue statement of any material fact contained in

any registration statement under which such securities were registered under the Securities Act, any preliminary prospectus, final prospectus or summary prospectus contained therein, or any amendment or supplement thereto, or any omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, and the Company will reimburse such holder and each such director, officer, underwriter and controlling person for any legal or any other expenses reasonably incurred by them in connection with investigating or defending any such loss, claim, liability, action or proceeding, provided that the Company shall not be liable in any such case to the extent that any such loss, claim, damage, liability, (or action or proceeding in respect thereof) or expense arises out of or is based upon an untrue statement or alleged untrue statement or omission or alleged omission made in such registration statement, any such preliminary prospectus, final prospectus, summary prospectus, amendment or supplement in reliance upon and in conformity with written information furnished to the Company by such holder or underwriter stating that it is for use in the preparation thereof and, provided further that the Company shall not be liable to any Person who participates as an underwriter in the offering or sale of Registrable Securities or to any other Person, if any, who controls such underwriter within the meaning of the Securities Act, in any such case to the extent that any such loss, claim, damage, liability (or action or proceeding in respect thereof) or expense arises out of such Person's failure to send or give a copy of the final prospectus, as the same may be then supplemented or amended, within the time required by the Securities Act to the Person asserting the existence of an untrue statement or alleged untrue statement or omission or alleged omission at or prior to the written confirmation of the sale of Registrable Securities to such Person if such statement or omission was corrected in such final prospectus or an amendment or supplement thereto. Such indemnity shall remain in full force and effect regardless of any investigation made by or on behalf of such holder or any such director, officer, underwriter or controlling person and shall survive the transfer of such securities by such holder.

(b) INDEMNIFICATION BY THE HOLDERS. The Company may require, as a condition to including any Registrable Securities in any registration statement filed pursuant to this Agreement, that the Company shall have received an undertaking satisfactory to it from the prospective seller of such Registrable Securities, to indemnify and hold harmless (in the same

manner and to the same extent as set forth in subdivision (a) of this Section 2.7) the Company, each director of the Company, each officer of the Company and each other Person, if any, who controls the Company within the meaning of the Securities Act, with respect to any statement or alleged statement in or omission or alleged omission from such registration statement, any preliminary prospectus, final prospectus or summary prospectus contained therein, or any amendment or supplement thereto, if such statement or alleged statement or omission or alleged omission was made in reliance upon and in conformity with written information furnished to the Company through an instrument duly executed by such seller specifically stating that it is for use in the preparation of such registration statement, preliminary prospectus, final prospectus, summary prospectus, amendment or supplement. Any such indemnity shall remain in full force and effect, regardless of any investigation made by or on behalf of the Company or any such director, officer or controlling person and shall survive the transfer of such securities by such seller.

(c) NOTICES OF CLAIMS, ETC. Promptly after receipt by an indemnified party of notice of the commencement of any action or proceeding involving a claim referred to in the preceding subdivisions of this Section 2.7, such indemnified party will, if a claim in respect thereof is to be made against an indemnifying party, give written notice to the latter of the commencement of such action, provided that the failure of any indemnified party to give notice as provided herein shall not relieve the indemnifying party of its obligations under the preceding subdivisions of this Section 2.7, except to the extent that the indemnifying party is actually prejudiced by such failure to give notice. In case any such action is brought against an indemnified party, unless in the opinion of the indemnified party's counsel a conflict of interest between such indemnified and indemnifying parties may exist in respect of such claim, the indemnifying party shall be entitled to participate in and to assume the defense thereof, jointly with any other indemnifying party similarly notified, to the

extent that the indemnifying party may wish, with counsel reasonably satisfactory to such indemnified party, and after notice from the indemnifying party to such indemnified party of its election so to assume the defense thereof, the indemnifying party shall not be liable to such indemnified party for any legal or other expenses subsequently incurred by the latter in connection with the defense thereof other than reasonable costs of investigation. No indemnifying party shall, without the consent of the indemnified party, consent to entry of any judgment or enter into any settlement of any such action which does not include as an unconditional term thereof the giving by the claimant or plaintiff to such indemnified party of a release from all liability, or a covenant not to sue, in respect to such claim or litigation. No indemnified party shall consent to entry of any judgment or enter into any settlement of any such action the defense of which has been assumed by an indemnifying party without the consent of such indemnifying party.

(d) OTHER INDEMNIFICATION. Indemnification similar to that specified in the preceding subdivisions of this Section 2.7 (with appropriate modifications) shall be given by the Company and each seller of Registrable Securities (but only if and to the extent required pursuant to the terms of Section 2.7(b)) with respect to any required registration or other qualification of securities under any Federal or state law or regulation of any governmental authority, other than the Securities Act.

9

(e) INDEMNIFICATION PAYMENTS. The indemnification required by this Section 2.7 shall be made by periodic payments of the amount thereof during the course of the investigation or defense, as and when bills are received or expense, loss, damage or liability is incurred.

(f) CONTRIBUTION. If the indemnification provided for in the preceding subdivision of this Section 2.7 is unavailable to an indemnified party in respect of any expense, loss, claim, damage or liability referred to therein, then each indemnifying party, in lieu of indemnifying such indemnified party, shall contribute to the amount paid or payable by such indemnified party as a result of such expense, loss, claim, damage or liability (i) in such proportion as is appropriate to reflect the relative benefits received by the Company on the one hand and the holder or underwriter, as the case may be, on the other from the distribution of the Registrable Securities or (ii) if the allocation provided by clause (i) above is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) above but also the relative fault of the Company on the one hand and of the holder or underwriter, as the case may be, on the other in connection with the statements or omissions which resulted in such expense, loss, damage or liability, as well as any other relevant equitable considerations. The relative benefits received by the Company on the one hand and the holder or underwriter, as the case may be, on the other in connection with the distribution of the Registrable Securities shall be deemed to be in the same proportion as the total net proceeds received by the Company from the initial sale of the Registrable Securities by the Company to the purchasers bear to the gain, if any, realized by all selling holders participating in such offering or the underwriting discounts and commissions received by the underwriter, as the case may be. The relative fault of the Company on the one hand and of the holder or underwriter, as the case may be, on the other shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or omission to state a material fact relates to information supplied by the Company, by the holder or by the underwriter and the parties' relative intent, knowledge, access to information supplied by the Company, by the holder or by the underwriter and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission, provided that the foregoing contribution agreement shall not inure to the benefit of any indemnified party if indemnification would be unavailable to such indemnified party by reason of the provisions contained in the first sentence of subdivision (a) of this Section 2.7, and in no event shall the obligation of any indemnifying party to contribute under this subdivision (f) exceed the amount that such indemnifying party would have been obligated to pay by way of indemnification if the indemnification provided for under subdivision (b) of this Section 2.7 had been available under the circumstances.

The Company and the holders of Registrable Securities agree that it would not be just and equitable if contribution pursuant to this subdivision (f)

were determined by pro rata allocation (even if the holders and any underwriters were treated as one entity for such purpose) or by any other method of allocation that does not take account of the equitable considerations referred to in the immediately preceding paragraph. The amount paid or payable by an indemnified party as a result of the losses, claims, damages and liabilities referred to in the immediately preceding paragraph shall be deemed to include, subject to the limitations set forth in the preceding sentence and subdivision

10

(c) of this Section 2.7, any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending any such action or claim.

Notwithstanding the provisions of this subdivision (f), no holder of Registrable Securities or underwriter shall be required to contribute any amount in excess of the amount by which (i) in the case of any such holder, the net proceeds received by such holder from the sale of Registrable Securities or (ii) in the case of an underwriter, the total price at which the Registrable Securities purchased by it and distributed to the public were offered to the public exceeds, in any such case, the amount of any damages that such holder or underwriter has otherwise been required to pay by reason of such untrue or allege untrue statement or omission. No Person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation.

3. DEFINITIONS. As used herein, unless the context otherwise requires, the following terms have the following respective meanings:

"AGREEMENT": As defined in Section 1.

"COMMISSION": The Securities and Exchange Commission or any other Federal agency at the time administering the Securities Act.

"COMMON STOCK": As defined in Section 1.

"COMPANY": As defined in the introductory paragraph of this Agreement.

"DEBENTURE CONVERSION SHARES": As defined in Section 1.

"DEBENTURES": As defined in Section 1, such term to include any securities issued in substitution of or in addition to such Debentures.

"EXCHANGE ACT": The Securities Exchange Act of 1934, as amended, and the rules and regulations of the Commission promulgated thereunder.

"PERSON": A corporation, association, partnership, limited liability company, trust, organization, business, individual, governmental or political subdivision thereof or a governmental agency.

"REGISTRABLE SECURITIES": The Securities and any securities issued or issuable with respect to such Securities by way of stock dividend or stock split or in connection with a combination of shares, recapitalization, merger, consolidation or other reorganization or otherwise. Once issued such securities shall cease to be Registrable Securities when (a) a registration statement with respect to the sale of such securities shall have become effective under the Securities Act and such securities shall have been disposed of in accordance with such registration statement, (b) they shall have been distributed to the public pursuant to Rule 144 (or any successor provision) under the Securities Act, (c) they shall have been otherwise transferred, new certificates for them not bearing

11

a legend restricting further transfer shall have been delivered by the Company and subsequent disposition of them shall not require registration or qualification of them under the Securities Act or any similar state law then in

force, (d) they shall have ceased to be outstanding, (e) on the expiration of the applicable Registration Maintenance Period or (f) any and all legends restricting transfer thereof have been removed in accordance with the provisions of Rule 144(k) (or any successor provision) under the Securities Act.

"REGISTRATION EXPENSES": All expenses incident to the Company's performance of or compliance with this Agreement, including, without limitation, all registration, filing and NASD fees, all stock exchange and OTC Bulletin Board or other NASD or stock exchange listing fees, all fees and expenses of complying with securities or blue sky laws, all word processing, duplicating and printing expenses, messenger and delivery expenses, the fees and disbursements of counsel for the Company and of its independent public accountants, including the expenses of any special audits or "cold comfort" letters required by or incident to such performance and compliance, the reasonable fees and disbursements of not more than one law firm (not to exceed \$20,000) retained by the holder or holders of more than 50% of the Registrable Securities, premiums and other costs of policies of insurance of the Company against liabilities arising out of the public offering of the Registrable Securities being registered and any fees and disbursements of underwriters customarily paid by issuers or sellers of securities, but excluding underwriting discounts and commissions and transfer taxes, if any, provided that, in any case where Registration Expenses are not to be borne by the Company, such expenses shall not include salaries of Company personnel or general overhead expenses of the Company, auditing fees, premiums or other expenses relating to liability insurance required by underwriters of the Company or other expenses for the preparation of financial statements or other data normally prepared by the Company in the ordinary course of its business or which the Company would have incurred in any event.

"REGISTRATION MAINTENANCE PERIOD": As defined in Section 2.3.

"REQUIRED EFFECTIVENESS DATE": As defined in Section 2.1.

"SECURITIES": As defined in Section 1.2.

"SECURITIES ACT": The Securities Act of 1933, as amended, and the rules and regulations of the Commission promulgated thereunder.

"SECURITIES PURCHASE AGREEMENT": As defined in Section 1.

"SELLERS' REPRESENTATIVE": Richard T. Kiphart or such Person designated by Richard T. Kiphart as of the time of disposition of the last of the Debentures held by the Investors (or subsequent Sellers' Representative).

"WARRANT SHARES": As defined in Section 1.

4. RULE 144. The Company shall timely file the reports required to be filed by it under the Securities Act and the Exchange Act (including but not limited to the reports under Sections 13

and 15(d) of the Exchange Act referred to in subparagraph (c) of Rule 144 adopted by the Commission under the Securities Act) and the rules and regulations adopted by the Commission thereunder (or, if the Company is not required to file such reports, will, upon the request of any holder of Registrable Securities, make publicly available other information) and will take such further action as any holder of Registrable Securities may reasonably request, all to the extent reasonably required from time to time to enable such holder to sell Registrable Securities without registration under the Securities Act within the limitation of the exemptions provided by (a) Rule 144 under the Securities Act, as such Rule may be amended from time to time, or (b) any similar rule or regulation hereafter adopted by the Commission. Upon the request of any holder of Registrable Securities, the Company will deliver to such holder a written statement as to whether it has complied with the requirements of this Section 4.

5. AMENDMENTS AND WAIVERS. This Agreement may be amended and the Company may take any action herein prohibited, or omit to perform any act herein required to be performed by it, only if the Company shall have obtained the written consent to such amendment, action or omission to act, of the holder or

holders of the sum of 51% or more of the shares of (i) Registrable Securities issued at such time, plus (ii) Registrable Securities issuable upon exercise or conversion of the Securities then constituting derivative securities (if such Securities were not fully exchanged or converted in full as of the date such consent is sought). Each holder of any Registrable Securities at the time or thereafter outstanding shall be bound by any consent authorized by this Section 5, whether or not such Registrable Securities shall have been marked to indicate such consent.

6. **NOMINEES FOR BENEFICIAL OWNERS.** In the event that any Registrable Securities are held by a nominee for the beneficial owner thereof, the beneficial owner thereof may, at its election, be treated as the holder of such Registrable Securities for purposes of any request or other action by any holder or holders of Registrable Securities pursuant to this Agreement or any determination of any number or percentage of shares of Registrable Securities held by an holder or holders of Registrable Securities contemplated by this Agreement. If the beneficial owner of any Registrable Securities so elects, the Company may require assurances reasonably satisfactory to it of such owner's beneficial ownership of such Registrable Securities.

7. **NOTICES.** Except as otherwise provided in this Agreement, all notices, requests and other communications to any Person provided for hereunder shall be in writing and shall be given to such Person (a) in the case of a party hereto other than the Company, addressed to such party in the manner set forth in the Securities Purchase Agreement or at such other address as such party shall have furnished to the Company in writing, or (b) in the case of any other holder of Registrable Securities, at the address that such holder shall have furnished to the Company in writing, or, until any such other holder so furnishes to the Company an address, then to and at the address of the last holder of such Registrable Securities who has furnished an address to the Company, or (c) in the case of the Company, at the address set forth on the signature page hereto, to the attention of its President, or at such other address, or to the attention of such other officer, as the Company shall have furnished to each holder of Registrable Securities at the time outstanding. Each such notice, request or other communication shall be effective (i) if given by mail, four (4) days after such communication is deposited in the United States mails with first class postage prepaid, addressed as aforesaid or (ii) if given by any other means (including, without limitation, by fax or air courier),

13

when delivered at the address specified above, provided that any such notice, request or communication shall not be effective until received.

8. **ASSIGNMENT.** This Agreement shall be binding upon and inure to the benefit of and be enforceable by the parties hereto. In addition, and whether or not any express assignment shall have been made, the provisions of this Agreement which are for the benefit of the parties hereto other than the Company shall also be for the benefit of and enforceable by any subsequent holder of any Registrable Securities. Each of the holders of the Registrable Securities agrees, by accepting any portion of the Registrable Securities after the date hereof, to the provisions of this Agreement including, without limitation, appointment of the Sellers' Representative to act on behalf of such holder pursuant to the terms hereof which such actions shall be made in the good faith discretion of the Sellers' Representative and be binding on all persons for all purposes.

9. **DESCRIPTIVE HEADINGS.** The descriptive headings of the several sections and paragraphs of this Agreement are inserted for reference only and shall not limit or otherwise affect the meaning hereof.

10. **GOVERNING LAW. THIS AGREEMENT SHALL BE CONSTRUED AND ENFORCED IN ACCORDANCE WITH, AND THE RIGHTS OF THE PARTIES SHALL BE GOVERNED BY, THE LAWS OF THE STATE OF MASSACHUSETTS WITHOUT REFERENCE TO THE PRINCIPLES OF CONFLICTS OF LAWS.**

11. **COUNTERPARTS.** This Agreement may be executed by facsimile and may be signed simultaneously in any number of counterparts, each of which shall be deemed an original, but all such counterparts shall together constitute one and the same instrument.

12. ENTIRE AGREEMENT. This Agreement embodies the entire agreement and understanding between the Company and each other party hereto relating to the subject matter hereof and supercedes all prior agreements and understandings relating to such subject matter.

13. SEVERABILITY. If any provision of this Agreement, or the application of such provisions to any Person or circumstance, shall be held invalid, the remainder of this Agreement, or the application of such provision to Persons or circumstances other than those to which it is held invalid, shall not be affected thereby.

[SIGNATURE PAGE FOLLOWS]

14

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed and delivered by their respective officers thereunto duly authorized as of the date first above written.

BOSTON BIOMEDICA, INC.

By: /s/ Kevin W. Quinlan
Name: Kevin W. Quinlan
Title: President
Address: Boston Biomedica, Inc.
75 West Street
Bridgewater, Ma 02379

Fax: (508) 580-1110
Tel.: (508) (580) 1900

SHORELINE MICRO-CAP FUND, L.P.

By: /s/ Richard P. Kiphart
Name: Richard P. Kiphart
Title: Partner

Address: c/o William Blair & Company
222 West Adams Street
Chicago, IL 60606
Fax: 312-368-9418
Tel.: 312-364-8420

/s/ Richard P. Kiphart
Name: Richard P. Kiphart

15

Exhibit 10.1

SECURITIES PURCHASE AGREEMENT

DATED AS OF

AUGUST 25, 2000

BY AND BETWEEN

BOSTON BIOMEDICA, INC.
AS THE ISSUER,

AND

GCA STRATEGIC INVESTMENT FUND LIMITED

TABLE OF CONTENTS

<TABLE>
<CAPTION>

	PAGE
<S>	<C>
Article I. DEFINITIONS.....	1
Section 1.1 Definitions.....	1
Article II. PURCHASE AND SALE OF SECURITIES.....	9
Section 2.1 Purchase and Sale of Convertible Debentures.....	9
Section 2.2 Purchase Price.....	9
Section 2.3 Closing and Mechanics of Payment.....	9
Article III. PAYMENT TERMS OF CONVERTIBLE DEBENTURES.....	9
Section 3.1 Payment of Principal and Interest; Payment Mechanics.....	9
Section 3.2 Ranking; Payment of Interest.....	10
Section 3.3 Voluntary Prepayment.....	10
Section 3.4 Mandatory Prepayments.....	10
Section 3.5 Prepayment Procedures.....	11
Section 3.6 Payment of Additional Amounts.....	12
Article IV. REPRESENTATIONS AND WARRANTIES.....	13
Section 4.1 Organization and Qualification.....	13
Section 4.2 Authorization and Execution.....	13
Section 4.3 Capitalization.....	14
Section 4.4 Governmental Authorization.....	14
Section 4.5 Issuance of Shares.....	15
Section 4.6 No Conflicts.....	15
Section 4.7 Financial Information.....	15
Section 4.8 Litigation.....	16
Section 4.9 Compliance with ERISA and other Benefit Plans.....	16
Section 4.10 Environmental Matters.....	17
Section 4.11 Taxes.....	17
Section 4.12 Investments, Joint Ventures.....	17
Section 4.13 Not an Investment Company.....	17
Section 4.15 No Solicitation; No Integration with Other Offerings.....	17
Section 4.16 Permits.....	17
Section 4.17 Leases.....	18
Section 4.18 Absence of Any Undisclosed Liabilities or Capital Calls.....	18
Section 4.19 Public Utility Holding Company.....	18
Section 4.20 Intellectual Property Rights.....	18
Section 4.21 Insurance.....	18
Section 4.22 Title to Properties.....	18
Section 4.23 Internal Accounting Controls.....	19
Section 4.24 Foreign Practices.....	19

</TABLE>

<TABLE>
<CAPTION>

<S>	<C>
Article V. REPRESENTATIONS AND WARRANTIES OF PURCHASER.....	19
Section 5.1 Purchaser.....	19
Article VI. CONDITIONS PRECEDENT TO PURCHASE OF SECURITIES.....	20
Section 6.1 Conditions Precedent to Purchaser's Obligations to Purchase.....	20
Section 6.2 Conditions to the Company's Obligations.....	22
Article VII. AFFIRMATIVE COVENANTS.....	22
Section 7.1 Information.....	23
Section 7.2 Payment of Obligations.....	23
Section 7.3 Maintenance of Property; Insurance.....	23
Section 7.4 Maintenance of Existence.....	24
Section 7.5 Compliance with Laws.....	24
Section 7.6 Inspection of Property, Books and Records.....	24
Section 7.7 Investment Company Act.....	24
Section 7.8 Use of Proceeds.....	24
Section 7.9 Compliance with Terms and Conditions of Material Contracts.....	24
Section 7.10 Reserved Shares and Listings.....	25
Section 7.11 Transfer Agent Instructions.....	25
Section 7.12 Maintenance of Reporting Status; Supplemental Information.....	26
Section 7.13 Form D; Blue Sky Laws.....	26
Section 7.14 Sales By Purchaser.....	26
Article VIII. NEGATIVE COVENANTS.....	26
Section 8.1 Limitations on Debt or Other Liabilities.....	26
Section 8.2 Transactions with Affiliates.....	27
Section 8.3 Merger or Consolidation.....	27
Section 8.4 Limitation on Asset Sales.....	27
Section 8.5 Restrictions on Certain Amendments.....	27
Section 8.6 Restrictions on Issuances of Securities.....	28
Section 8.7 Limitation on Stock Repurchases.....	29
Section 8.8 Limitation on Sales By Officers and Employee Directors.....	29
Article IX. RESTRICTIVE LEGENDS.....	29
Section 9.1 Restrictions on Transfer.....	29
Section 9.2 Notice of Proposed Transfers.....	30
Article X. ADDITIONAL AGREEMENTS AMONG THE PARTIES.....	30
Section 10.1 Liquidated Damages.....	30
Section 10.2 Conversion Notice.....	31
Section 10.3 Conversion Limit.....	31
Section 10.4 Registration Rights.....	31
Article XI. ADJUSTMENT OF FIXED PRICE.....	33
Section 11.1 Reorganization.....	33
Section 11.2 Share Reorganization.....	33
Section 11.3 Rights Offering.....	33

</TABLE>

<TABLE>
<CAPTION>

<S>	<C>
Section 11.4 Special Distribution.....	34
Section 11.5 Capital Reorganization.....	35
Section 11.6 Adjustment Rules.....	36
Section 11.7 Certificate as to Adjustment.....	36
Section 11.8 Notice to Holders.....	36
Article XII. EVENTS OF DEFAULT.....	37
Section 12.1 Events of Default.....	37
Section 12.2 Powers and Remedies Cumulative.....	39

Article XIII. MISCELLANEOUS.....	39
Section 13.1 Notices.....	39
Section 13.2 No Waivers; Amendments.....	39
Section 13.3 Indemnification.....	40
Section 13.4 Expenses: Documentary Taxes.....	42
Section 13.5 Payment.....	42
Section 13.6 Successors and Assigns.....	42
Section 13.7 Brokers.....	42
Section 13.8 Massachusetts Law; Submission to Jurisdiction; Waiver of Jury Trial; Appointment of Agent.....	42
Section 13.9 Entire Agreement.....	43
Section 13.10 Survival; Severability.....	43
Section 13.11 Title and Subtitles.....	43
Section 13.12 Reporting Entity for the Common Stock.....	43
Section 13.13 Publicity.....	43

</TABLE>

iv

LIST OF SCHEDULES

Schedule 4.3	Capitalization
Schedule 4.7	Final Information
Schedule 4.8	Litigation
Schedule 4.12	Investments, Joint Ventures
Schedule 4.15	Other Offerings
Schedule 4.22	Title to Property
Schedule 7.8	Use of Proceeds
Schedule 8.1	Debt and Other Liability
Schedule 8.2	Transactions with Affiliates
Schedule 8.4	Asset Sales

v

LIST OF EXHIBITS

Exhibit A	Form of Convertible Debentures
Exhibit B	Form of Registration Rights Agreement
Exhibit C	Form of Officer's Certificate as to Certain Financial Matters
Exhibit D	Form of Officer's Certificate
Exhibit E	Form of Escrow Agreement
Exhibit F	Form of Common Stock Purchase Warrant

vi

SECURITIES PURCHASE AGREEMENT

AGREEMENT, dated as of August 25, 2000, between Boston Biomedica, Inc. (the "Company") a Massachusetts Corporation and GCA Strategic Investment Fund Limited ("Purchaser"), a Bermuda Corporation.

R E C I T A L S:

WHEREAS, the Company desires to sell and issue to Purchaser, and Purchaser desires to purchase from the Company, \$2,250,000 aggregate principal amount of the Company's 3% Senior Subordinated Convertible Debentures due August 25, 2003 (the "Convertible Debentures"), with terms and conditions as set forth in the form of Senior Subordinated Convertible Debenture attached hereto as EXHIBIT A;

WHEREAS, the Convertible Debentures will be convertible into shares of the Company's common stock, \$0.01 par value per share (the "Common Stock");

WHEREAS, in order to induce the Purchaser to enter into the transactions described in this Agreement, the Company desires to issue to the Purchaser a warrant to purchase 80,000 shares of Common Stock upon the Closing

(as defined herein) on the terms and conditions described in the form of the common stock purchase warrant attached hereto as EXHIBIT F (the "Warrants"); and

WHEREAS, Purchaser will have certain registration rights with respect to such shares of Common Stock issuable as interest under, and upon conversion of, the Convertible Debentures (the "Debenture Shares") and upon exercise of the Warrants (the "Warrant Shares," the Debenture Shares and the Warrant Shares being collectively referred to herein as the "Conversion Shares") as set forth in the Registration Rights Agreement in the form attached hereto as EXHIBIT B;

NOW, THEREFORE, in consideration of the foregoing premises and the covenants contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

ARTICLE I. DEFINITIONS

SECTION 1.1 DEFINITIONS. The following terms, as used herein, have the following meanings:

"Additional Shares of Common Stock" has the meaning set forth in Section 11.6.

"Affiliate" means, with respect to any Person (the "Subject Person"), (i) any other Person (a "Controlling Person") that directly, or indirectly through one or more intermediaries, Controls the Subject Person or (ii) any other Person (other than the Subject Person or a Consolidated Subsidiary of the Subject Person) which is Controlled by or is under common Control with a Controlling Person.

1

"Agreement" means this Securities Purchase Agreement, as amended, supplemented or otherwise modified from time to time in accordance with its terms.

"Asset Sale" has the meaning set forth in Section 8.4.

"Balance Sheet Date" has the meaning set forth in Section 4.7.

"Benefit Arrangement" means at any time an employee benefit plan within the meaning of Section 3(3) of ERISA which is not a Plan or a Multiemployer Plan and which is maintained or otherwise contributed to by the Company.

"Benefit Plans" has the meaning set forth in Section 4.9(b).

"Business Day" means any day except a Saturday, Sunday or other day on which commercial banks in the City of New York are authorized or required by law to close.

"Capital Reorganization" has the meaning set forth in Section 11.5.

"Change in Control" means (i) after the date of this Agreement, any person or group of persons (within the meaning of Sections 13 and 14 of the Exchange Act and the rules and regulations of the Commission relating to such sections) other than Purchaser shall have acquired beneficial ownership (within the meaning of Rules 13d-3 and 13d-5 promulgated by the Commission pursuant to the Exchange Act) of 33 1/3% or more of the outstanding shares of Common Stock of the Company; (ii) individuals constituting the Board of Directors of the Company on the date hereof (together with any new Directors whose election by such Board of Directors or whose nomination for election by the shareholders of the Company was approved by a vote of at least 50.1% of the Directors still in office who are either Directors as of the date hereof or whose election or nomination for election was previously so approved), cease for any reason to constitute at least two-thirds of the Board of Directors of the Company then in office.

"Closing Bid Price" shall mean for any security as of any date, the lowest closing bid price as reported by Bloomberg, L.P. ("Bloomberg") on the principal securities exchange or trading market where such security is listed or traded or, if the foregoing does not apply, the lowest closing bid price of such

security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg, or, if no lowest trading price is reported for such security by Bloomberg, then the average of the bid prices of any market makers for such securities as reported in the "Pink Sheets" by the National Quotation Bureau, Inc. If the lowest closing bid price cannot be calculated for such security on such date on any of the foregoing bases, the lowest closing bid price of such security on such date shall be the fair market value as mutually determined by Purchaser and the Company for which the calculation of the closing bid price requires, and in the absence of such mutual determination, as determined by the Board of Directors of the Company in good faith.

"Closing Date" means the date hereof.

"Code" means the Internal Revenue Code of 1986, as amended.

"Commission" means the Securities and Exchange Commission or any entity succeeding

2

to all of its material functions.

"Common Stock" means the common stock, \$0.01 par value per share, of the Company.

"Company" means Boston Biomedica, Inc., a Massachusetts corporation, and its successors.

"Company Corporate Documents" means the articles of organization and bylaws of the Company.

"Consolidated Net Worth" means at any date the total shareholders' equity which would appear on a consolidated balance sheet of the Company prepared as of such date.

"Consolidated Subsidiary" means at any date with respect to any Person or Subsidiary, any Person the accounts of which would be consolidated with those of such Person or Subsidiary in its consolidated financial statements if such statements were prepared as of such date.

"Control" (including, with correlative meanings, the terms "Controlling," "Controlled by" and under "common Control with"), as used with respect to any Person, means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of that Person, whether through the ownership of voting securities, by contract or otherwise.

"Conversion Date" shall mean the date of delivery of a Notice of Conversion for all or a portion of a Convertible Debenture by the holder thereof to the Company as specified in each Convertible Debenture.

"Conversion Price" has the meaning set forth in the Convertible Debentures.

"Conversion Shares" has the meaning set forth in the Recitals.

"Convertible Debentures" means the Company's Senior Subordinated Convertible Debentures substantially in the form set forth as Exhibit A hereto.

"Deadline" has the meaning set forth in Section 10.1.

"Debt" of any Person means at any date, without duplication, (i) all obligations of such Person for borrowed money, (ii) all obligations of such Person evidenced by bonds, debentures, notes, or other similar instruments issued by such Person, (iii) all obligations of such Person as lessee which (y) are capitalized in accordance with GAAP or (z) arise pursuant to sale-leaseback transactions, (iv) all reimbursement obligations of such Person in respect of letters of credit or other similar instruments, (v) all Debt of others secured by a Lien on any asset of such Person, whether or not such Debt is otherwise an obligation of such Person and (vi) all Debt of others Guaranteed by such Person.

"Default" means any event or condition which constitutes an Event of Default or which with the giving of notice or lapse of time or both would, unless cured or waived, become an Event of Default.

3

"Derivative Securities" has the meaning set forth in Section 8.6.

"Discounted Equity Offerings" has the meaning set forth in Section 8.6.

"Directors" means the individuals then serving on the Board of Directors or similar such management council of the Company.

"Environmental Laws" means any and all federal, state, local and foreign statutes, laws, regulations, ordinances, rules, judgments, orders, decrees, permits, concessions, grants, franchises, licenses, agreements or other governmental restrictions relating to the environment or to emissions, discharges or releases of pollutants, contaminants, petroleum or petroleum products, chemicals or industrial, toxic or hazardous substances or wastes into the environment, including, without limitation, ambient air, surface water, ground water, or land, or otherwise relating to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of pollutants, contaminants, petroleum or petroleum products, chemicals or industrial, toxic or hazardous substances or wastes or the cleanup or other remediation thereof.

"ERISA" means the Employee Retirement Income Security Act of 1974, as amended, or any successor statute.

"ERISA Group" means the Company and each Subsidiary and all members of a Controlled group of corporation and all trades or businesses (whether or not incorporated) under common Control which, together with the Company or any Subsidiary, are treated as a single employer under the Code.

"Event of Default" has the meaning set forth in Article XII hereof.

"Exchange Act" means the Securities Exchange Act of 1934, as amended.

"Expense Reimbursement Fee" has the meaning set forth in Section 13.4.

"Financing" means a public or private financing consummated (meaning closing and funding) through the issuance of debt or equity securities (or securities convertible into or exchangeable for debt or equity securities) of the Company, other than Permitted Financings.

"Fixed Price" has the meaning set forth in Section 11.1.

"Formula Price" has the meaning set forth in Section 3.4.

"GAAP" has the meaning set forth in Section 1.2.

"Guarantee" by any Person means any obligation, contingent or otherwise, of such Person directly or indirectly guaranteeing (whether by virtue of partnership arrangements, by agreement to purchase assets, goods, securities or services, to take-or-pay, or to maintain a minimum net worth, financial ratio or similar requirements, or otherwise) any Debt of any other Person and, without limiting the generality of the foregoing, any obligation, direct or indirect, contingent or otherwise, of such Person (i) to purchase or pay (or advance or supply funds for the purchase or payment of) such Debt or (ii) entered into for the purpose of assuring in any other

4

manner the holder of such Debt of the payment thereof or to protect such holder against loss in respect thereof (in whole or in part); PROVIDED that the term Guarantee shall not include endorsements for collection or deposit in the ordinary course of business. The term Guarantee used as a verb has a corresponding meaning.

"Hazardous Materials" means any hazardous materials, hazardous wastes,

hazardous constituents, hazardous or toxic substances or petroleum products (including crude oil or any derivative or fraction thereof), defined or regulated as such in or under any Environmental Laws.

"Intellectual Property" has the meaning set forth in Section 4.20.

"Investment" means any investment in any Person, whether by means of share purchase, partnership interest, capital contribution, loan, time deposit or otherwise.

"Lien" means any lien, mechanic's lien, materialmen's lien, lease, easement, charge, encumbrance, mortgage, conditional sale agreement, title retention agreement, agreement to sell or convey, option, claim, title imperfection, encroachment or other survey defect, pledge, restriction, security interest or other adverse claim, whether arising by contract or under law or otherwise (including, without limitation, any financing lease having substantially the same economic effect as any of the foregoing, and the filing of any financing statement under the Uniform Commercial Code or comparable law of any jurisdiction in respect of any of the foregoing).

"Listing Applications" has the meaning set forth in Section 4.4.

"Majority Holders" means (i) as of the Closing Date, Purchaser and (ii) at anytime thereafter, the holders of more than 50% in aggregate principal amount of the 3% Senior Subordinated Convertible Debentures dated August 25, 2000 outstanding at such time.

"Market Price" shall mean the Closing Bid Price of the Common Stock preceding the date of determination.

"Material Adverse Effect" has the meaning set forth in Section 4.1.

"Maturity Date" shall mean the date of maturity of the Convertible Debentures.

"Maximum Number of Shares" shall mean that number of shares of Common Stock equal to the percentage that the Company may issue without shareholder approval under the applicable rules of the National Market or the applicable OTC Bulletin Board or equivalent entity, of the then issued and outstanding shares of Common Stock of the Company as of the applicable date of determination, or such greater number of shares as the shareholders of the Company may have previously approved.

"NASD" has the meaning set forth in Section 7.10.

"Nasdaq Market" means the Nasdaq Stock Market's National Market System.

"National Market" means the Nasdaq Market, the Nasdaq Small Cap Market, the New

York Stock Exchange, Inc. or the American Stock Exchange, Inc..

"Net Cash Proceeds" means, with respect to any transaction, the total amount of cash proceeds received by the Company or any Subsidiary less (i) reasonable underwriters' fees, brokerage commissions, reasonable professional fees and other customary out-of-pocket expenses payable in connection with such transaction, and (ii) in the case of dispositions of assets, (A) actual transfer taxes (but not income taxes) payable with respect to such dispositions, and (B) the amount of Debt, if any, secured by a Lien on the asset or assets disposed of and required to be, and actually repaid by the Company or any Subsidiary in connection therewith, and any trade payables specifically relating to such asset or assets sold by the Company or any Subsidiary that are not assumed by the purchaser of such asset or assets.

"Notice of Conversion" means the form to be delivered by a holder of a Convertible Debenture upon conversion of all or a portion thereof to the Company substantially in the form of EXHIBIT A to the form of Convertible Debenture.

"Notice of Exercise" means the form to be delivered by a holder of a

Warrant upon exercise of all or a portion thereof to the Company substantially in the form of Exhibit A to the Warrant.

"Officer's Certificate" shall mean a certificate executed by the president, chief executive officer or chief financial officer of the Company in the form of EXHIBIT D attached hereto.

"Officer's Certificate as to Financial Matters" shall mean a certificate executed by the president of the Company on the Closing Date as to certain financial matters of the Company, which such Officer's Certificate shall be in the form of Exhibit C attached hereto.

"OTC Bulletin Board" means the over-the-counter bulletin board operated by the NASD.

"Other Taxes" has the meaning set forth in Section 3.6(b).

"PBGC" means the Pension Benefit Guaranty Corporation or any entity succeeding to any or all of its functions under ERISA.

"Permits" means all domestic and foreign licenses, franchises, grants, authorizations, permits, easements, variances, exemptions, consents, certificates, orders and approvals necessary to own, lease and operate the properties of, and to carry on the business of the Company and the Subsidiaries.

"Permitted Financings" has the meaning set forth in Section 8.6.

"Person" means an individual, corporation, partnership, trust, incorporated or unincorporated association, joint venture, joint stock company, government (or any agency or political subdivision thereof) or other entity of any kind.

"Plan" means an employee pension benefit plan which is covered by Title IV of ERISA or subject to the minimum funding standards under the Code and either (i) is maintained, or contributed to, by any member of the EP, ISA Group for employees of any member of the

6

ERISA Group or (ii) has at any time within the preceding five years been maintained, or contributed to, by any Person which was at such time a member of the ERISA Group for employees of the Person which was at such time a member of the ERISA Group.

"Purchase Price" means the purchase price for the Securities set forth in Section 2.2 hereof.

"Purchaser" means the entity listed on the signature page hereto and its successors and assigns, including holders from time to time of the Convertible Debentures.

"Qualified Assignee" has the meaning set forth in Section 3.6(a).

"Recourse Financing" means Debt of the Company or any Subsidiary which, by its terms, does not bar the lender thereof from action against the Company or any Subsidiary, as borrower or guarantor, if the security value of the project or asset pledged in respect thereof falls below the amount required to repay such Debt.

"Redemption Event" has the meaning set forth in Section 3.4.

"Registrable Securities" has the meaning set forth in Section 10.4(a).

"Registration Default" has the meaning set forth in Section 10.4(e).

"Registration Maintenance Period" has the meaning set forth in Section 10.4(c).

"Registration Statement" has the meaning set forth in Section 10.4(b).

"Registration Rights Agreement" means the agreement between the Company and Purchaser dated the date hereof substantially in the form set forth in

EXHIBIT B attached hereto.

"Required Effectiveness Date" has the meaning set forth in Section 10.4(b).

"Reserved Amount" has the meaning set forth in Section 7.10(a).

"Restricted Payment" means, with respect to any Person, (i) any dividend or other distribution on any shares of capital stock of such Person (except dividends payable solely in shares of capital stock of the same or junior class of such Person and dividends from a wholly-owned direct or indirect Subsidiary of the Company to its parent corporation), (ii) any payment on account of the purchase, redemption, retirement or acquisition of (a) any shares of such Person's capital stock or (b) any option, warrant or other right to acquire shares of such Person's capital stock or (iii) any loan, or advance or capital contribution to any Person (a "Shareholder") owning any capital stock of such Person other than relocation, travel or like advances to officers and employees in the ordinary course of business, and other than reasonable compensation as determined by the Board of Directors.

"Rights Offering" has the meaning set forth in Section 11.3.

"Sale Event" has the meaning set forth in Section 3.4.

7

"SEC Reports" has the meaning set forth in Section 7.1(a).

"Securities" means the Convertible Debentures, the Warrants and, the Conversion Shares.

"Securities Act" means the Securities Act of 1933, as amended.

"Share Reorganization" has the meaning set forth in Section 11.2.

"Special Distribution" has the meaning set forth in Section 11.4.

"Subsidiary" means, with respect to any Person, any corporation or other entity of which (x) a majority of the capital stock or other ownership interests having ordinary voting power to elect a majority of the Board of Directors or other persons performing similar functions are at the time directly or indirectly owned by such Person or (y) the results of operations, the assets and the liabilities of which are consolidated with such Person under GAAP.

"Subsidiary Corporate Documents" means the certificates of incorporation and bylaws of each Subsidiary.

"Taxes" has the meaning set forth in Section 3.6.

"Trading Day" shall mean any Business Day in which the OTC Bulletin Board, National Market or other automated quotation system or exchange on which the Common Stock is then traded is open for trading for at least four (4) hours.

"Transaction Agreements" means this Agreement, the Convertible Debentures, the Warrant, the Registration Rights Agreement, and the Escrow Agreement.

"Transfer" means any disposition of Securities whether or not such disposition would constitute a sale thereof under the Securities Act.

"Unfunded Liabilities" means, with respect to any Plan at any time, the amount (if any) by which (i) the present value of all benefits under the Plan exceeds (ii) the fair market value of all Plan assets allocable to such benefits (excluding any accrued but unpaid contributions), all determined as of the then most recent valuation date for such Plan, but only to the extent that such excess represents a potential liability of a member of the ERISA Group to the PBGC or any other Person under Title IV of ERISA.

"Warrant" means the Common Stock Purchase Warrant substantially in the form set forth in EXHIBIT F hereto.

SECTION 1.2 ACCOUNTING TERMS AND DETERMINATIONS. Unless otherwise specified herein, all accounting terms used herein shall be interpreted, all accounting determinations hereunder shall be made, and all financial statements required to be delivered hereunder shall be prepared, in accordance with generally accepted accounting principles as in effect from time to time, applied on a consistent basis with the Company's prior practice (except for interim financial statements and for changes concurred in by the Company's independent public accountants)

8

("GAAP"). All references to "dollars," "Dollars" or "\$" are to United States dollars unless otherwise indicated.

ARTICLE II. PURCHASE AND SALE OF SECURITIES

SECTION 2.1 PURCHASE AND SALE OF CONVERTIBLE DEBENTURES.

(a) Subject to the terms and conditions set forth herein, the Company agrees to issue and sell to Purchaser, and Purchaser agrees to purchase from the Company, Convertible Debentures in the aggregate principal amount of Two Million Two Hundred Fifty Thousand Dollars (\$2,250,000.00).

(b) In connection with the Purchaser's agreement to purchase the Convertible Debentures specified in this Article II, the Company shall issue and deliver to the Purchaser on the Closing Date a Warrant to purchase an aggregate of 80,000 shares of Common Stock.

SECTION 2.2 PURCHASE PRICE. The purchase price for the Convertible Debentures on the Closing Date (as defined herein) shall be 95% of the principal amount thereof. No part of the purchase price of the Convertible Debentures shall be allocated to the Warrant. Therefore, the aggregate consideration payable by Purchaser to the Company for the Convertible Debentures and Warrants on the Closing Date shall be Two Million One Hundred Thirty Seven Thousand Five Hundred Dollars (\$2,137,500.00) (the "Purchase Price").

SECTION 2.3 CLOSING AND MECHANICS OF PAYMENT.

(a) The Purchase Price shall be paid on the Closing Date by wire transfer of immediately available funds.

(b) The Convertible Debentures and Warrants issued on the Closing Date shall be dated the date hereof and interest shall accrue on the Convertible Debentures as of the Closing Date.

ARTICLE III. PAYMENT TERMS OF CONVERTIBLE DEBENTURES

SECTION 3.1 PAYMENT OF PRINCIPAL AND INTEREST; PAYMENT MECHANICS.

The Company will pay all amounts due on each Convertible Debenture by wire transfer and at the address specified for such purpose by Purchaser in writing, without the presentation or surrender of any Convertible Debenture or the making of any notation thereon, except that upon written request of the Company made concurrently with or reasonably promptly after payment or prepayment in full of this Convertible Debenture, the holder shall surrender the Convertible Debenture for cancellation, reasonably promptly after any such request, to the Company at its principal executive office. Prior to any sale or other disposition of any Convertible Debenture, the holder thereof will either submit the Convertible Debenture to the Company for endorsement thereon of the amount of principal paid thereon and the last date to which interest has been paid thereon or surrender the Convertible Debenture to the Company in exchange for a new Convertible Debenture or Convertible Debentures. The Company will afford the benefits of this Section 3.1 to any direct or indirect transferee of the Convertible Debenture purchased in accordance with the terms of this Agreement.

9

SECTION 3.2 RANKING; PAYMENT OF INTEREST. The Convertible Debentures shall be senior to all indebtedness of the Company except (a) the Company's outstanding credit facility with Fleet Bank and any successor thereof, including increases of such credit facility; (b) the Company's mortgage loan with Commerce Bank; and (c) any future sale and lease back transaction in

connection with the Company's headquarters building in West Bridgewater, MA, to which it shall be junior in ranking. Interest shall accrue on the outstanding principal amount of each Convertible Debenture and shall be payable as specified herein.

SECTION 3.3 VOLUNTARY PREPAYMENT. For so long as no Event of Default shall have occurred and is continuing, the Company may, at its option, repay, in whole or in part, the Convertible Debentures, per the redemption price set forth in Section 5.1 of the Convertible Debentures, following at least five (5) Business Days prior written notice to Purchaser (the date of expiration of such five (5) Business Day period being referred to as the "prepayment date"); provided, HOWEVER, -that if such date is not a Business Day, the prepayment date shall be the next Business Day thereafter; and further provided that such repayment is not otherwise prohibited by Section 5.1 of the Convertible Debenture.

SECTION 3.4 MANDATORY PREPAYMENTS.

(a) Upon (i) the occurrence of a Change in Control of the Company, (ii) a transfer of all or substantially all of the assets of the Company to any Person in a single transaction or series of related transactions, (iii) a consolidation or merger of the Company with or into another Person in which the Company is not the surviving entity (other than a merger which is effected solely to change the jurisdiction of incorporation of the Company and results in a reclassification, conversion or exchange of outstanding shares of Common Stock solely into shares of Common Stock) (each of items (i), (ii) and (iii) being referred to as a "Sale Event"), or (iv) the occurrence of a Registration Default which continues uncured for a period of twenty (20) days, then, in each case, the Company shall, upon request of the Majority Holders, redeem the Convertible Debentures and Warrants. The redemption price payable upon any such redemption shall be the redemption price in SECTION 5 of the Convertible Debentures and SECTION 13 of the Warrants, respectively (referred to herein as the "Formula Price").

(b) At the option of Purchaser, upon the consummation of one or more Financings, the Company shall use 25% of the Net Cash Proceeds therefrom (unless such Net Cash Proceeds from each such Financing is less than \$250,000) to redeem the Convertible Debentures.

(c) Upon the issuance of the Maximum Number of Shares, the receipt by the Company of Notice of Conversion requiring the issuance of shares of Common Stock in excess of the Maximum Number of Shares, and the failure within 40 days of such issuance to obtain shareholder approval to issue additional shares of Common Stock required to be issued in connection with such Notices of Conversion (the "Redemption Event"), the Company shall redeem, the outstanding balance of each Convertible Debenture and Warrant for the Formula Price.

(d) In the event that there is an insufficient number of authorized, issuable, shares of Common Stock registered under the Registration Statement filed by the Company to

10

allow Purchaser to fully convert the Convertible Debentures and exercise all Warrants held by Purchaser and sell such shares issued thereon, then the Company shall immediately file an amendment to the then current Registration Statement to register a sufficient number of such shares to convert said Convertible Debentures and Warrants. Upon the failure within twenty (20) Trading Days measured from the date of filing the Registration Statement to register a sufficient number of such shares, the Company shall redeem the outstanding balance of each Convertible Debenture and Warrant for the Formula Price. In addition, failure of the Company to register a sufficient number of such shares to fully convert said Convertible Debentures and exercise such Warrants shall be a Registration Default under Section 10.4(e) from the date of the Notice of Conversion to the date of the earlier of (i) the redemption of the outstanding balance of the Convertible Debentures and exercise of all such Warrants or (ii) full conversion of the Convertible Debentures and exercise of all such Warrants.

SECTION 3.5 PREPAYMENT PROCEDURES.

(a) Any permitted prepayment or redemption of the Convertible

Debentures and Warrants, as applicable pursuant to Sections 3.3 or 3.4 above shall be deemed to be effective and consummated (for purposes of determining the Formula Price and the time at which Purchaser shall thereafter not be entitled to deliver a Notice of Conversion for the Convertible Debentures) as follows:

(i) A prepayment pursuant to Section 3.3, the "prepayment date" specified therein;

(ii) A redemption pursuant to Section 3.4(a), the later to occur of (x) one (1) Business Day following the Company's receipt of notice to redeem from the Majority Holders or (y) the date of occurrence or consummation, as the case may be, of the applicable Sale Event or in the case of a Registration Default the date on which such 20-day period expires;

(iii) A redemption pursuant to Section 3.4(b), three (3) Business Days following the date of consummation of the applicable Financing (meaning closing and funding); and

(iv) A redemption pursuant to Section 3.4(c), the date on which such 40-day period expires.

(b) On or before the Maturity Date and on the effective date of a repayment or redemption of the Convertible Debentures and Warrants as specified in Section 3.5(a) above, the Company shall deliver by wire transfer of funds the repayment/redemption price to Purchaser of the Convertible Debentures and Warrants subject to repayment/redemption. Should Purchaser not receive payment of any amounts due on redemption of its Convertible Debentures and Warrants by reason of the Company's failure to make payment at the times prescribed above for any reason, the Company shall pay to the applicable holder on demand (x) interest on the sums not paid when due at an annual rate equal to the lesser of (i) 18% or (ii) the maximum lawful rate, compounded at the end of each thirty (30) days, until the applicable holder is paid in full and (y) all costs of collection, including, but not limited to, reasonable attorneys' fees and costs, whether or not suit or other formal proceedings are instituted.

11

(c) The Company shall select the Convertible Debentures and Warrants to be redeemed in any redemption in which not all of the Convertible Debentures and Warrants are to be redeemed so that the ratio of the Convertible Debentures and Warrants of each holder selected for redemption to the total Convertible Debentures and Warrants owned by that holder shall be the same as the ratio of all such Convertible Debentures and Warrants selected for redemption bears to the total of all then outstanding Convertible Debentures and Warrants. Should any Convertible Debentures and Warrants required to be redeemed under the terms hereof not be redeemed solely by reason of limitations imposed by law, the applicable Convertible Debentures and Warrants shall be redeemed on the earliest possible dates thereafter to the maximum extent permitted by law.

(d) Any Notice of Conversion delivered by Purchaser (including delivery via telecopy) to the Company prior to the (x) Maturity Date or (y) effective date of a voluntary prepayment pursuant to Section 3.3 or a mandatory prepayment pursuant to Section 3.4 as specified in Section 3.5(a) above), shall be honored by the Company and the conversion of the Convertible Debentures shall be deemed effected on the Conversion Date, subject to the Company's rights pursuant to Sections 5.1 and 5.2 of the Convertible Debentures. In addition, between the effective date of a voluntary prepayment pursuant to Section 3.3 or a mandatory prepayment pursuant to Section 3.4 as specified in Section 3.5(a) above and the date the Company is required to deliver the redemption proceeds in full to Purchaser, Purchaser may deliver a Notice of Conversion to the Company. Such Notice of Conversion will be (x) of no force or effect if the Company timely pays the redemption proceeds to Purchaser when due or (y) honored on or as of the date of the Notice of Conversion if the Company fails to timely pay the redemption proceeds to Purchaser when due.

SECTION 3.6 PAYMENT OF ADDITIONAL AMOUNTS.

(a) Any and all payments by the Company hereunder or under the Convertible Debentures to Purchaser and each "qualified assignee" thereof shall be made free and clear of and without deduction or withholding for any and all present or future taxes, levies, imposts, deductions, charges or withholdings, and all liabilities with respect thereto (all such taxes, levies, imposts,

deductions, charges, withholdings and liabilities being hereinafter referred to as "Taxes") unless such Taxes are required by law or the administration thereof to be deducted or withheld. If the Company shall be required by law or the administration thereof to deduct or withhold any Taxes from or in respect of any sum payable under the Convertible Debentures (i) the holders of the Convertible Debentures subject to such Taxes shall have the right, but not the obligation, for a period of thirty (30) days commencing upon the day it shall have received written notice from the Company that it is required to withhold Taxes, subject to the other provisions of this Agreement and the Convertible Debentures relating to assignment or transfer of the Convertible Debentures, to transfer all or any portion of the Convertible Debentures to a qualified assignee to the extent such transfer can be effected in accordance with the other provisions of this Agreement and applicable law; (ii) the Company shall make such deductions or withholdings; and (iii) the Company shall forthwith pay the full amount deducted or withheld to the relevant taxation or other authority in accordance with applicable. A "qualified assignee" of a Purchaser is a Person that is organized under the laws of (i) the United States or (ii) any jurisdiction other than the United States or any political, subdivision thereof and that (y) represents and warrants to the Company that payments of the Company to such assignee under

12

the laws in existence on the date of this Agreement would not be subject to any Taxes and (z) from time to time, as and when requested by the Company, executes and delivers to the Company and the Internal Revenue Service forms, and provides the Company with any information necessary for the Company to establish such assignee's exemption or continued exemption from Taxes under applicable law.

(b) The Company shall forthwith pay any present or future stamp or documentary taxes or any other similar charges or similar levies which arise from any payment made under any of the Transaction Agreements or from the execution, delivery or registration of, or otherwise with respect to, this Agreement other than Taxes relating to income and Taxes payable solely as a result of the transfer from Purchaser to a Person of any Security (all such taxes, charges and levies hereinafter referred to as "Other Taxes").

(c) The Company shall indemnify Purchaser, or qualified assignee, for the full amount of Taxes or Other Taxes (including, without limitation, any Taxes or Other Taxes imposed by any jurisdiction on amounts payable under this Section 3.6) required to be paid by the Company under this Section 3.6, but not so paid by the Company and actually paid by Purchaser, or qualified assignee. Payment under this indemnification shall be made within 30 days from the date Purchaser or qualified assignee makes written demand therefor.

(d) Within 30 days after the date of any payment of Taxes, required by the Company to be paid under this Section 3.6, the Company will furnish to Purchaser the original or a certified copy of a receipt evidencing payment thereof.

(e) Purchaser and each qualified assignee shall provide to the Company a form W-8, stating that it is a non-U.S., person, together with any additional tax forms which may be required under the Code, as amended after the date hereof, to allow interest payments to be made to it without deduction.

ARTICLE IV. REPRESENTATIONS AND WARRANTIES

The Company represents and warrants to Purchaser, as of the Closing Date, the following:

SECTION 4.1 ORGANIZATION AND QUALIFICATION. The Company and each Subsidiary is A corporation (or other legal entity) duly organized, validly existing and in good standing under the laws of its jurisdiction of incorporation, with full power and authority to own, lease, use and operate its properties and to carry on its business as and where now owned, leased, used, operated and conducted. The Company is qualified to conduct business as a foreign corporation and is in good standing in every jurisdiction in which the nature of the business conducted by it makes such qualification necessary, except where such failure would not have a Material Adverse Effect. A "Material Adverse Effect" means any material adverse effect on the operations, results of operations, properties, assets or condition (financial or otherwise) of the

Company and its Subsidiaries, taken as a whole, or on the transactions contemplated hereby or by the agreements or instruments to be entered into in connection herewith.

SECTION 4.2 AUTHORIZATION AND EXECUTION.

13

(a) The Company has all requisite corporate power and authority to enter into and perform each Transaction Agreement and to consummate the transactions contemplated hereby and thereby and to issue the Securities in accordance with the terms hereof and thereof.

(b) The execution, delivery and performance by the Company of each Transaction Agreement and the issuance by the Company of the Securities have been duly and validly authorized by the Board of Directors of the Company and no further consent or authorization of the Company, its Board of Directors or its shareholders is required.

(c) This Agreement has been duly executed and delivered by the Company.

(d) This Agreement constitutes, and upon execution and delivery thereof by the Company, each of the Transaction Agreements will constitute, a valid and binding agreement of the Company, in each case enforceable against the Company in accordance with its respective terms subject to (i) applicable bankruptcy, insolvency or similar laws affecting the enforceability of creditors rights generally, and (ii) equitable principals of general applicability.

SECTION 4.3 CAPITALIZATION. As of August 25, 2000, the authorized, issued and outstanding capital stock of the Company is as set forth on SCHEDULE 4.3 hereto and except as set forth on SCHEDULE 4.3 and excluding any stock options offered under any Company Benefit Plan (as herein defined) no other shares of capital stock of the Company will be outstanding other than stock options offered under any Company Benefit Plan as of the Closing Date. Except as set forth on Schedule 4.3, all of such outstanding shares of capital stock are, or upon issuance will be, duly authorized, validly issued, fully paid and nonassessable. No shares of capital stock of the Company are subject to preemptive rights or similar rights of the shareholders of the Company or any liens or encumbrances imposed through the actions or failure to act of the Company. Other than as set forth on SCHEDULE 4.3 hereto, as of the date hereof, (i) there are no outstanding options, warrants, scrip, rights to subscribe for, puts, calls, rights of first refusal, agreements, understandings, claims or other commitments or rights of any character whatsoever relating to, or securities or rights convertible into or exchangeable for any shares of capital stock of the Company or any of its Subsidiaries, or arrangements by which the Company or any of its Subsidiaries is or may become bound to issue additional shares of capital stock of the Company or any of its Subsidiaries, and (ii) there are no agreements or arrangements under which the Company or any of its Subsidiaries are obligated to register the sale of any of its or their securities under the Securities Act (except pursuant to the Registration Rights Agreement) and (iii) there are no anti-dilution or price adjustment provisions contained in any security issued by the Company (or in any agreement providing rights to security holders) that will be triggered by the issuance of the Convertible Debentures or Conversion Shares. The Company has furnished to Purchaser true and correct copies of the Company's Corporate Documents, and the terms of all securities convertible into or exercisable for Common Stock.

SECTION 4.4 GOVERNMENTAL AUTHORIZATION. The execution and delivery by the Company of the Transaction Agreements does not and will not, the issuance and sale by the Company of the Securities does not and will not, and the consummation of the transactions contemplated hereby and by the other Transaction Agreements will not, require any action by or in respect of, or filing with, any governmental body, agency or governmental official except (a) such actions or filings that have been undertaken or made prior to the date hereof and that will be

14

in full force and effect (or as to which all applicable waiting periods have

expired) on and as of the date hereof or which are not required to be filed on or prior to the Closing Date, (b) such actions or filings that, if not obtained, would not result in a Material Adverse Effect, (c) listing applications ("Listing Applications") to be filed with the OTC Bulletin Board or the National Market relating to the Conversion Shares, if applicable, and (d) the filing of a "Form D" as described in Section 7.13 below and the filing of any requisite documents under state securities ("blue sky") laws.

SECTION 4.5 ISSUANCE OF SHARES. Upon conversion in accordance with the terms of the Convertible Debentures and exercise of the Warrants, the Conversion Shares shall be duly and validly issued and outstanding, fully paid and nonassessable, free and clear of any Liens and charges and shall not be subject to preemptive rights or similar rights of any other shareholders of the Company. Assuming the representations and warranties of Purchaser herein are true and correct in all material respects, each of the Securities will have been issued in material compliance with all applicable U.S. federal and state securities laws. The Company understands and acknowledges that the issuance of Conversion Shares will dilute the ownership interests of other shareholders of the Company. The Company further acknowledges that its obligation to issue Conversion Shares upon conversion of the Convertible Debentures and exercise of the Warrants is absolute and unconditional regardless of the dilutive effect that such issuance may have on the ownership interests of other shareholders of the Company.

SECTION 4.6 NO CONFLICTS. The execution and delivery by the Company of the Transaction Agreements to which it is a party did not and will not, the issuance and sale by the Company of the Securities did not and will not and the consummation of the transactions contemplated hereby and by the other Transaction Agreements will not, contravene or constitute a default under or violation of (i) any provision of applicable law or regulation known by the Company to be applicable to it, (ii) the Company Corporate Documents, (iii) any material agreement, judgment, injunction, order, decree or other instrument binding upon the Company or any Subsidiary or any of their respective assets, or result in the creation or imposition of any material Lien on any asset of the Company or any Subsidiary, To its knowledge, the Company and each Subsidiary is in compliance with and conforms to all statutes, laws, ordinances, rules, regulations, orders, restrictions and all other legal requirements of any domestic or foreign government or any instrumentality thereof having jurisdiction over the conduct of its businesses or the ownership of its properties, except where such failure would not have a Material Adverse Effect.

SECTION 4.7 FINANCIAL INFORMATION. Since June 30, 2000 (the "Balance Sheet Date"), except as disclosed in Schedule 4.7, there has been (x) no material adverse change in the assets or liabilities, or in the business or condition, financial or otherwise, or in the results of operations or prospects, of the Company and its Subsidiaries taken as a whole, whether as a result of any legislative or regulatory change, revocation of any license or rights to do business, fire, explosion, accident, casualty, labor trouble, flood, drought, riot, storm, condemnation, act of God, public force or otherwise and (y) no material, adverse change in the assets or liabilities, or in the business or condition, financial or otherwise, or in the results of operations or prospects, of the Company and its Subsidiaries except in the ordinary course of business; and to the knowledge of the Company no fact or condition exists which might cause such a change in the future. The audited and unaudited consolidated balance sheets of the Company and its

Subsidiaries for the periods ending December 31, 1999, and June 30, 2000, respectively, and the related consolidated statements of income, changes in shareholders' equity and changes in cash flows for the periods then ended, including the footnotes thereto, except as indicated therein, (i) complied in all material respects with applicable accounting requirements and (ii) have been prepared in accordance with GAAP consistently applied throughout the periods indicated, except that the unaudited financial statements do not contain notes and may be subject to normal audit adjustments and normal annual adjustments. Such financial statements fairly present the financial condition of the Company and its Subsidiaries at the dates indicated and the consolidated results of their operations and cash flows for the periods then ended and, except as indicated therein, reflect all claims against and all Debts and liabilities of the Company and its Subsidiaries, fixed or contingency required to be reflected therein in accordance with GAAP.

SECTION 4.8 LITIGATION. Except as set forth on SCHEDULE 4.8, there is no action, suit or proceeding pending or, to the knowledge of the Company, threatened against the Company or any Subsidiary, before any court or arbitrator or any governmental body, agency or official in which there is a reasonable possibility of an adverse decision which could be reasonably expected to have a Material Adverse Effect or which challenges the validity of any Transaction Agreements.

SECTION 4.9 COMPLIANCE WITH ERISA AND OTHER BENEFIT PLANS.

(a) Each member of the ERISA Group has fulfilled its obligations under the minimum funding standards of ERISA and the Code with respect to each Plan and is in compliance in all material respects with the presently applicable provisions of ERISA and the Code with respect to each Plan. No member of the ERISA Group has (i) sought a waiver of the minimum funding standard under Section 412 of the Code in respect of any Plan, (ii) failed to make any required contribution or payment to any Plan or Multiemployer Plan or in respect of any Benefit Arrangement, or made any amendment to any Plan or Benefit Arrangement, which as resulted or could result in the imposition of a Lien or the posting of a bond or other security under ERISA or the Code or (iii) incurred any liability under Title IV of ERISA other than a liability to the PBGC for premiums under Section 4007 of ERISA.

(b) The benefit plans not covered under clause (a) above (including profit sharing, deferred compensation, stock option, employee stock purchase, bonus, retirement, health or insurance plans, collectively the "Benefit Plans") relating to the employees of the Company are duly registered where required by, and are in good standing in all material respects under, all applicable laws. All required employer and employee contributions and premiums under the Benefit Plans to the date hereof have been made, the respective fund or funds established under the Benefit Plans are funded in accordance with applicable laws, and no past service funding liabilities exist thereunder.

(c) No Benefit Plans have any unfunded liabilities, either on a "going concern" or "winding up" basis and determined in accordance with all applicable laws and actuarial practices and using actuarial assumptions and methods that are reasonable in the circumstances. No event has occurred and no condition exists with respect to any Benefit Plans that has resulted or to the knowledge of the Company could reasonably be expected to result in any Benefit Plan having its registration revoked or wound up (in whole or in part) or refused for

16

the purposes of any applicable laws or being placed under the administration of any relevant pension benefits regulatory authority or being required to pay any taxes or penalties (in any material amounts) under any applicable laws.

SECTION 4.10 ENVIRONMENTAL MATTERS. Each of the Company and the Subsidiaries conducts its businesses in compliance in all material respects with all applicable Environmental Laws.

SECTION 4.11 TAXES. All United States federal, state, county, municipality, local or foreign income tax returns and all other material tax returns (including foreign tax returns) which are required to be filed by or on behalf of the Company and each Subsidiary have been filed and all material taxes due and payable pursuant to such returns or pursuant to any assessment received by the Company and each Subsidiary have been paid except those being disputed in good faith and for which adequate reserves have been established. The charges, accruals and reserves on the books of the Company and each Subsidiary in respect of taxes and other governmental charges have been established in accordance with GAAP.

SECTION 4.12 INVESTMENTS, JOINT VENTURES. Other than as set forth in SCHEDULE 4.12, the Company has no Subsidiaries or other direct or indirect Investment in any Person, and the Company is not a party to any partnership, management, shareholders' or joint venture or similar agreement.

SECTION 4.13 NOT AN INVESTMENT COMPANY. Neither the Company nor any Subsidiary is an "Investment Company" within the meaning of Investment Company Act of 1940, as amended.

SECTION 4.14 FULL DISCLOSURE. The information heretofore furnished by the Company to Purchaser for purposes of or in connection with this Agreement or any transaction contemplated hereby does not contain any untrue statement of a material fact.

SECTION 4.15 NO SOLICITATION; NO INTEGRATION WITH OTHER OFFERINGS. No form of general solicitation or general advertising was used by the Company or, to its knowledge, any other Person acting on behalf of the Company, in connection with the offer and sale of the Securities. Except as set forth in Schedule 4.15, neither the Company, nor, to its knowledge, any Person acting on behalf of the Company, has, either directly or indirectly, sold or offered for sale to any Person (other than Purchaser) any of the Securities or, within the six months prior to the date hereof, any other similar security of the Company except as contemplated by this Agreement, and the Company represents that neither itself nor any Person authorized to act on its behalf (except that the Company makes no representation as to Purchaser and their Affiliates) will sell or offer for sale any such security to, or solicit any offers to buy any such security from, or otherwise approach or negotiate in respect thereof with, any Person or Persons so as thereby to cause the issuance or sale of any of the Securities to be in violation of any of the provisions of Section 5 of the Securities Act. The issuance of the Securities to Purchaser will not be integrated with any other issuance of the Company's securities (past, current or future).

SECTION 4.16 PERMITS. (a) Each of the Company and its Subsidiaries has all material Permits; (b) to the Company's knowledge all such Permits are in full force and effect, and each

17

of the Company and its Subsidiaries has fulfilled and performed all material obligations with respect to such Permits; (c) no event has occurred which allows, or after notice of lapse of time would allow, revocation or termination by the issuer thereof or which results in any other material impairment of the rights of the holder of any such Permit; and (d) the Company has no reason to believe that any governmental body or agency is considering limiting, suspending or revoking any such Permit, except in each case or in the aggregate that could not be reasonably expected to have a Material Adverse Effect.

SECTION 4.17 LEASES. Except as set forth in Schedule 4.17, neither the Company nor any Subsidiary is a party to any capital lease obligation with a value greater than \$250,000 or to any operating lease with an aggregate annual rental greater than \$250,000 during the life of such lease.

SECTION 4.18 ABSENCE OF ANY UNDISCLOSED LIABILITIES OR CAPITAL CALLS. There are no liabilities of the Company or any Subsidiary of any kind whatsoever, whether accrued, contingent, absolute, determined, determinable or otherwise, and there is no existing condition, situation or set of circumstances which would reasonably be expected to result in such a liability, other than (i) those liabilities provided for in the financial statements delivered pursuant to Section 4.7 and (ii) other undisclosed liabilities which, individually or in the aggregate, would not have a Material Adverse Effect.

SECTION 4.19 PUBLIC UTILITY HOLDING COMPANY. Neither the Company nor any Subsidiary is, or will be upon issuance and sale of the Securities and the use of the proceeds described herein, subject to regulation under the Public Utility Holding Company Act of 1935, as amended, the Federal Power Act, the Interstate Commerce Act or to any federal or state statute or regulation limiting its ability to issue and perform its obligations under any Transaction Agreement.

SECTION 4.20 INTELLECTUAL PROPERTY RIGHTS. Each of the Company and its Subsidiaries owns, or is licensed under, and has the rights to use, all material to the knowledge of the Company, patents, trademarks, trade names, copyrights, technology, know-how and processes (collectively, "Intellectual Property") used in, or necessary for the conduct of its business; no claims have been asserted by any Person to the use of any such Intellectual Property or challenging or questioning the validity or effectiveness of any license or agreement related thereto. To the Company's and its Subsidiaries' knowledge, there is no valid basis for any such claim and the use of such Intellectual Property by the Company and its Subsidiaries will not infringe upon the rights

of any Person.

SECTION 4.21 INSURANCE. The Company and its Subsidiaries maintain, with financially sound and reputable insurance companies, insurance in at least such amounts as is customary for businesses similar to the Company. All insurance coverages of the Company and its Subsidiaries are in full force and effect and there are no past due premiums in respect of any such insurance.

SECTION 4.22 TITLE TO PROPERTIES. Except as set forth on Exhibit 4.22, the Company and its Subsidiaries have good and marketable title to all their respective properties reflected on the financial statements referred to in Section 4.7, free and clear of all Liens.

18

SECTION 4.23 INTERNAL ACCOUNTING CONTROLS. The Company and each of its Subsidiaries maintain a system of internal accounting controls sufficient, in the judgment of the Company's Board of Directors, to provide reasonable assurance that (i) transactions are executed in accordance with managements' general or specific authorizations, (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain asset accountability, (iii) access to assets is permitted only in accordance with management's general or specific authorization, and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences.

SECTION 4.24 FOREIGN PRACTICES. Neither the Company nor any of its Subsidiaries nor, to the Company's knowledge, any employee or agent of the Company or any Subsidiary has made any payments of funds of the Company or Subsidiary, or received or retained any funds, in each case in violation of the Foreign Corrupt Practices Act.

ARTICLE V. REPRESENTATIONS AND WARRANTIES OF PURCHASER

SECTION 5.1 PURCHASER. Purchaser hereby represents and warrants to the Company that:

(a) Purchaser is an "accredited investor" within the meaning of Rule 501(a) under the Securities Act and the Securities to be acquired by it pursuant to this Agreement are being acquired for its own account and, as of the date hereof, not with a view toward, or for sale in connection with, any distribution thereof except in compliance with applicable United States federal and state securities law; provided that, subject to such securities laws, the disposition of Purchaser's property shall at all times be and remain within its control;

(b) the execution, delivery and performance of this Agreement and the purchase of the Securities pursuant thereto are within Purchaser's corporate or partnership powers, as applicable, and have been duly and validly authorized by all requisite corporate or partnership action;

(c) this Agreement has been duly executed and delivered by Purchaser;

(d) the execution and delivery by Purchaser of the Transaction Agreements to which it is a party does not, and the consummation of the transactions contemplated hereby and thereby will not, contravene or constitute a default under or violation of (i) any provision of applicable law or regulation, or (ii) any agreement, judgment, injunction, order, decree or other instrument binding upon Purchaser;

(e) Purchaser understands that the Securities have not been registered under the Securities Act and blue sky laws and may not be transferred or sold except as specified in this Agreement or the remaining Transaction Agreements;

(f) this Agreement constitutes a valid and binding agreement of Purchaser enforceable in accordance with its terms, subject to (i) applicable bankruptcy, insolvency or similar laws affecting the enforceability of creditors rights generally and (ii) equitable principles of general applicability;

(g) Purchaser has such knowledge and experience in financial and business matters so as to be capable of evaluating the merits and risks of its investment in the Securities and Purchaser is capable of bearing the economic risks of such investment;

(h) Purchaser is knowledgeable, sophisticated and experienced in business and financial matters; Purchaser has previously invested in securities similar to the Securities and fully understands the limitations on transfer described herein; Purchaser has been afforded access to information about the Company and the financial condition, results of operations, property, management and prospects of the Company sufficient to enable it to evaluate its investment in the Securities; Purchaser has been afforded the opportunity to ask such questions as it has deemed necessary of, and to receive answers from, representatives of the Company concerning the terms and conditions of the offering of the Securities and the merits and the risks of investing in the Securities; and Purchaser has been afforded the opportunity to obtain such additional information which the Company possesses or can acquire that is necessary to verify the accuracy and completeness of the information given to Purchaser concerning the Company. The foregoing does not in any way relieve the Company of its representations and other undertakings hereunder, and shall not limit Purchaser's ability to rely thereon;

(i) no part of the source of funds used by Purchaser to acquire the Securities constitutes assets allocated to any separate account maintained by Purchaser in which any employee benefit plan (or its related trust) has any interest; and

(j) Purchaser is a corporation organized under the laws of Bermuda; its principal office is located at 12 Church Street, Mechanics Building, Hamilton HM II, Bermuda. All contacts and communications between the Purchaser and the Company relating to this Agreement and the transactions contemplated hereby have taken place at the Company's offices in Massachusetts and the Purchaser's investment advisor's offices in Georgia.

ARTICLE VI. CONDITIONS PRECEDENT TO PURCHASE OF SECURITIES

SECTION 6.1 CONDITIONS PRECEDENT TO PURCHASER'S OBLIGATIONS TO PURCHASE. The obligation of Purchaser hereunder to purchase the Convertible Debentures at the Closing is subject to the satisfaction, on or before the Closing Date, of each of the following conditions, provided that these conditions are for Purchaser's sole benefit and may be waived by Purchaser at any time in its sole discretion:

(a) The Company shall have duly executed this Agreement, the Warrant and the Registration Rights Agreement, and delivered the same to Purchaser;

(b) The Company shall have delivered to Purchaser duly executed certificates representing the Convertible Debentures in accordance with Section 2.3 hereof;

(c) The Company shall have delivered the Officer's Certificate as to Financial Matters;

(d) The representations and warranties of the Company contained in each Transaction Agreement shall be true and correct in all material respects as of the date when made and as of the Closing Date as though made at such time (except for representations and

warranties that speak as of a specified date) and the Company shall have performed, satisfied and complied with all covenants, agreements and conditions required by such Transaction Agreements to be performed, satisfied or complied with by it at or prior to the Closing Date. Purchaser shall have received an Officer's Certificate executed by the chief executive officer of the Company, dated as of the Closing Date, to the foregoing effect and as to such other matters as may be reasonably requested by Purchaser, including but not limited to certificates with respect to the Company Corporate Documents, resolutions

relating to the transactions contemplated hereby and the incumbencies of certain officers and Directors of the Company. The form of such certificate is attached hereto as EXHIBIT D;

(e) The Company shall have received all governmental, Board of Directors, shareholders and third party consents and approvals necessary or desirable in connection with the issuance and sale of the Securities and the consummation of the transactions contemplated by the Transaction Agreements;

(f) All applicable waiting periods in respect to the issuance and sale of the Securities shall have expired without any action having been taken by any competent authority that could restrain, prevent or impose any materially adverse conditions thereon or that could seek or threaten any of the foregoing;

(g) No law or regulation shall have been imposed or enacted that, in the judgment of Purchaser, could adversely affect the transactions set forth herein or in the other Transaction Agreements, and no law or regulation shall have been proposed that in the reasonable judgment of Purchaser could reasonably have any such effect;

(h) Purchaser shall have received an opinion, dated the Closing Date, of counsel to the Company, in form and substance satisfactory to Purchaser;

(i) All fees and expenses in connection with the transactions contemplated by the Transaction Agreements due and payable by the Company on or prior to the Closing Date shall have been paid;

(j) The Company Corporate Documents and the Subsidiary Corporate Documents, if any, shall be in full force and effect and no term or condition thereof shall have been amended, waived or otherwise modified without the prior written consent of Purchaser;

(k) There shall have occurred no material adverse change in the business, condition (financial or otherwise), operations, performance, properties or prospects of the Company or any Subsidiary since June 30, 2000;

(l) There shall exist no action, suit, investigation, litigation or proceeding pending or threatened in any court or before any arbitrator or governmental instrumentality that challenges the validity of or purports to affect this Agreement or any other Transaction Agreement, or other transaction contemplated hereby or thereby or that could reasonably be expected to have a Material Adverse Effect, or any material adverse effect on the enforceability of the Transaction Agreements or the Securities or the rights of the holders of the Securities or Purchaser hereunder;

21

(m) Purchaser shall have confirmed the receipt of the Convertible Debentures and the Warrants to be issued, duly executed by the Company and registered in the name of Purchaser;

(n) There shall not have occurred any disruption or adverse change in the financial or capital markets generally, or in the market for the Common Stock (including but not limited to any suspension or delisting), which Purchaser reasonably deems material in connection with the purchase of the Securities;

(o) Immediately before and as of the Closing Date, no Default or Event of Default shall have occurred and be continuing;

(p) An Escrow Agreement, substantially in the form of EXHIBIT E, by and between the Company and Purchaser, and accepted by the Law Offices of Kim T. Stephens as escrow agent (the "Escrow Agent"), shall have been duly executed by the said parties.

SECTION 6.2 CONDITIONS TO THE COMPANY'S OBLIGATIONS. The obligations of the Company to issue and sell the Securities to Purchaser pursuant to this Agreement are subject to the satisfaction, at or prior to the Closing Date, of the following conditions:

(a) The representations and warranties of Purchaser contained herein shall be true and correct in all material respects on the Closing Date and Purchaser shall have performed - and complied in all material respects with all agreements required by this Agreement to be performed or complied with by Purchaser at or prior to the Closing Date;

(b) The issue and sale of the Securities by the Company shall not be prohibited by any applicable law, court order or governmental regulation;

(c) Receipt by the Company of duly executed counterparts of this Agreement and the Registration Rights Agreement signed by Purchaser;

(d) The Company shall have received payment of the Purchase Price, less the Expense Reimbursement Fee;

(e) There shall exist no action, suit, investigation, litigation or proceeding pending or threatened in any court or before any arbitrator or governmental instrumentality that challenges the validity of or purports to effect this Agreement or any other Transaction Agreement, or other transaction contemplated hereby or thereby or that could reasonably be expected to have a Material Adverse Effect, or any material adverse effect on the enforceability of the Transaction Agreements, or the Securities, or the rights of the holders of the Securities or Purchaser hereunder.

ARTICLE VII AFFIRMATIVE COVENANTS

The Company and Purchaser hereby agree that, from and after the date hereof for so long as any Convertible Debentures remain outstanding and for the benefit of each other:

22

SECTION 7.1 INFORMATION. The Company will deliver to each holder of the Convertible Debentures:

(a) promptly upon the filing thereof, copies of (i) all registration statements (other than the exhibits thereto and any registration statements on Form S-8 or its equivalent), and (ii) all reports on Forms 10-K, 10-Q and 8-K (or other equivalents) which the Company or any Subsidiary has filed with the Commission after the Closing Date (collectively, "SEC Reports");

(b) simultaneously with the delivery of each item referred to in clause (a) above, a certificate from the chief financial officer of the Company stating that no Default or Event of Default has occurred and is continuing, or, if as of the date of such delivery a Default shall have occurred and be continuing, a certificate from the Company setting forth the details of such Default or Event of Default and the action which the Company is taking or proposes to take with respect thereto;

(c) within two (2) Business Days after any officer of the Company obtains knowledge of a Default or Event of Default, or that any Person has given any notice or taken any action with respect to a claimed Default hereunder, a certificate of the chief financial officer of the Company setting forth the details thereof and the action which the Company is taking or proposed to take with respect thereto;

(d) promptly upon the mailing thereof to the shareholders of the Company generally, copies of all financial statements, reports and proxy statements so mailed and any other document generally distributed to shareholders;

(e) at least two (2) Business Days prior to the consummation of any Financing or other event requiring a repayment of the Convertible Debentures under Section 3.4, notice thereof together with a summary of all material terms thereof;

(f) notice promptly upon the occurrence of any event by which the Reserved Amount becomes less than the sum of (i) 1.5 times the maximum number of Conversion Shares issuable pursuant to the Transaction Agreements; and

(g) promptly following the commencement thereof, notice and a description in reasonable detail of any litigation or proceeding to which the

Company or any Subsidiary is a party in which the amount involved is \$250,000 or more and not covered by insurance or in which injunctive or similar relief is sought.

SECTION 7.2 PAYMENT OF OBLIGATIONS. The Company will, and will cause each Subsidiary to, pay and discharge, at or before maturity, all their respective material obligations, including, without limitation, tax liabilities, except where the same may be contested in good faith by appropriate proceedings and will maintain, in accordance with GAAP, appropriate reserves for the accrual of any of the same.

SECTION 7.3 MAINTENANCE OF PROPERTY; INSURANCE. The Company will, and will cause each Subsidiary to, keep all property necessary in its business in good working order and condition, ordinary wear and tear excepted. In addition, the Company and each Subsidiary will

23

maintain insurance in at least such amounts and against such risks as it has insured against as of the Closing Date,

SECTION 7.4 MAINTENANCE OF EXISTENCE. The Company will, and will cause each Subsidiary to, continue to engage in business of the same general type as now conducted by the Company and such Subsidiaries, and will preserve, renew and keep in full force and effect its respective corporate existence and their respective material rights, privileges and franchises necessary or desirable in the normal conduct of business.

SECTION 7.5 COMPLIANCE WITH LAWS. The Company will, and will cause each Subsidiary to, comply, in all material respects, with all federal, state, municipal, local or foreign applicable laws, ordinances, rules, regulations, municipal by-laws, codes and requirements of governmental authorities (including, without limitation, Environmental Laws and ERISA and the rules and regulations thereunder) except (i) where compliance therewith is contested in good faith by appropriate proceedings or (it) where non-compliance therewith could not reasonably be expected, in the aggregate, to have a Material Adverse Effect on the business, condition (financial or otherwise), operations, performance, properties or prospects of the Company or such Subsidiary.

SECTION 7.6 INSPECTION OF PROPERTY, BOOKS AND RECORDS. The Company will, and will cause each Subsidiary to, keep proper books of record and account in which full, true and correct entries shall be made of all dealings and transactions in relation to their respective businesses and activities; and will permit, during normal business hours, Purchaser's representative or an affiliate thereof, as representatives of Purchaser, to visit and inspect any of their respective properties, upon reasonable prior notice, to examine and make abstracts from any of their respective books and records and to discuss their respective affairs, finances and accounts with their respective executive officers and independent public accountants (and by this provision the Company authorizes its independent public accountants to disclose and discuss with Purchaser the affairs, finances and accounts of the Company and its Subsidiaries in the presence of a representative of the Company; provided, however, that such discussions will not result in any unreasonable expense to the Company, without Company consent), all at such reasonable times.

SECTION 7.7 INVESTMENT COMPANY ACT. The Company will not be or become an open-end investment trust, unit investment trust or face-amount certificate company that is or is required to be registered under Section 8 of the Investment Company Act of 1940, as amended.

SECTION 7.8 USE OF PROCEEDS. The proceeds from the issuance and sale of the Convertible Debentures by the Company shall be used in accordance with SCHEDULE 7.8 attached hereto. None of the proceeds from the issuance and sale of the Convertible Debentures by the Company pursuant to this Agreement will be used directly or indirectly for the purpose, whether immediate, incidental or ultimate, of purchasing or carrying any "margin stock" within the meaning of Regulation G of the Board of Governors of the Federal Reserve System.

SECTION 7.9 COMPLIANCE WITH TERMS AND CONDITIONS OF MATERIAL CONTRACTS. The Company will, and will cause each Subsidiary to, comply, in all material respects, with all terms

and conditions of all material contracts to which it is subject except in particular circumstances in which the Company determines it to be in the best interests of the Company not to comply.

SECTION 7.10 RESERVED SHARES AND LISTINGS.

(a) The Company shall at all times have authorized, and reserved for the purpose of issuance, a sufficient number of shares of Common Stock to provide for the full conversion of the outstanding Convertible Debentures and exercise of the Warrants and issuance of the Conversion Shares (based on the conversion price of the Convertible Debentures in effect from time to time and the exercise price of the Warrants, respectively) (the "Reserved Amount"). The Company shall not reduce the Reserved Amount without the prior written consent of Purchaser. With respect to all Securities which contain an indeterminate number of shares of Common Stock issuable in connection therewith (such as the Convertible Debentures), the Company shall include in the Reserve Amount, no less than two (2) times the number of shares that is then actually issuable upon conversion or exercise of such Securities. If at any time the number of shares of Common Stock authorized and reserved for issuance is below the number of Conversion Shares issued or issuable upon conversion of the Convertible Debentures and exercise of the Warrants, the Company will promptly take all corporate action necessary to authorize and reserve a sufficient number of shares, including, without limitation, either (x) calling a special meeting of shareholders to authorize additional shares, in the case of an insufficient number of authorized shares or (y) in lieu thereof, consummating the immediate repurchase of the Convertible Debentures and the Warrants contemplated in Sections 3.4(c) and 10.3 hereof, respectively.

(b) If required, the Company shall promptly file the Listing Applications and secure the listing of the Conversion Shares upon each national securities exchange or automated quotation system, if any, upon which shares of Common Stock are then listed (subject to official notice of issuance) and shall maintain, so long as any other shares of Common Stock shall be so listed, such listing of all Conversion Shares from time to time issuable upon conversion or exercise of the Convertible Debentures and Warrants, respectively. The Company will maintain the listing and trading of its Common Stock on the Nasdaq Market. The Company will comply in all respects with the Company's reporting, filing and other obligations under the bylaws or rules of the National Association of Securities Dealers, Inc. (the "NASD") and such exchanges, as applicable. The Company shall promptly provide to Purchaser copies of any notices it receives regarding the continued eligibility of the Common Stock for listing on the Nasdaq Market.

SECTION 7.11 TRANSFER AGENT INSTRUCTIONS. Upon receipt of a Notice of Conversion or Notice of Exercise, as applicable, the Company shall immediately direct the Company's transfer agent to issue certificates, registered in the name of Purchaser or its nominee, for the Conversion Shares, in such amounts as specified from time to time by Purchaser to the Company upon proper conversion of the Convertible Debentures or exercise of the Warrants. Upon conversion of any Convertible Debentures in accordance with their terms and/or exercise of any Warrants in accordance with their terms, the Company will, and will use its best lawful efforts to cause its transfer agent to, issue one or more certificates representing shares of Common Stock in such name or names and in such denominations specified by a Purchaser in a Notice of Conversion or Notice of Exercise, as the case may be. As long as the Registration Statement contemplated by

the Registration Rights Agreement shall remain effective, the shares of Common Stock issuable upon conversion of any Convertible Debentures or exercise of the Warrants shall be issued to any transferee of such shares from Purchaser without any restrictive legend upon appropriate evidence of transfer in compliance with the Securities Act and the rules and regulations of the Commission; provided that for so long as the Registration Statement is effective, no opinion of counsel will be required to effect any such transfer. The Company further warrants and agrees that no instructions other than these instructions have been or will be given to its transfer agent. Nothing in this Section 7.11 shall

affect in any way a Purchaser's obligation to comply with all securities laws applicable to Purchaser upon resale of such shares of Common Stock, including any prospectus delivery requirements.

SECTION 7.12 MAINTENANCE OF REPORTING STATUS; SUPPLEMENTAL INFORMATION.

So long as any of the Securities are outstanding, the Company shall timely file all reports required to be filed with the Commission pursuant to the Exchange Act. The Company shall not terminate its status as an issuer required to file reports under the Exchange Act, even if the Exchange Act or the rules and regulations thereunder would permit such termination. If at anytime the Company is not subject to the requirements of Section 13 or 15(d) of the Exchange Act, the Company will promptly furnish at its expense, upon request, for the benefit of the holders from time to time of Securities, and prospective purchasers of Securities, information satisfying the information requirements of Rule 144 under the Securities Act.

SECTION 7.13 FORM D; BLUE SKY LAWS. The Company agrees to file a "Form D" with respect to the Securities as required under Regulation D of the Securities Act and to provide a copy thereof to Purchaser promptly after such filing. The Company shall, on or before the Closing Date, take such action as the Company shall reasonably determine is necessary to qualify the Securities for sale to Purchaser at the Closing pursuant to this Agreement under applicable securities or "blue sky" laws of the states of the United States (or to obtain an exemption from such qualification), and shall provide evidence of any such action so taken to Purchaser on or prior to the Closing Date.

SECTION 7.14 SALES BY PURCHASER. Purchaser agrees that it will not effect or cause any of its affiliates to effect a short sale of Common Stock for so long as any of the Convertible Debentures remain outstanding or the Purchaser or its affiliates hold any Securities.

ARTICLE VIII. NEGATIVE COVENANTS

The Company hereby agrees that after the date hereof for so long as any Convertible Debentures remain outstanding and for the benefit of Purchaser:

SECTION 8.1 LIMITATIONS ON DEBT OR OTHER LIABILITIES. Neither the Company nor any Subsidiary will create, incur, assume or suffer to exist (at any time after the Closing Date, after giving effect to the application, of the proceeds of the issuance of the Securities), except as set forth in Schedule 8.1, (i) any Debt except (x) Debt incurred in a Permitted Financing, (y) Debt incurred in connection with equipment leases to which the Company or its Subsidiaries are a party incurred in the ordinary course of business; or (z) Debt incurred in connection with trade accounts payable, imbalances and refunds arising in the ordinary course of business and (ii) any equity securities (including Derivative Securities) (other than those securities that are issuable (x)

under or pursuant to stock option plans, warrants or other rights programs that exist as of the date hereof, or (y) in connection with the acquisition (including by merger) of a business or of assets otherwise permitted under this Agreement), unless the Company complies with the mandatory prepayment terms of Section 3.4(b) hereof.

SECTION 8.2 TRANSACTIONS WITH AFFILIATES. The Company and each Subsidiary will not, directly or indirectly, pay any funds to or for the account of, make any investment (whether by acquisition or stock or indebtedness, by loan, advance, transfer of property, guarantee or other agreement to pay, purchase or service, directly or indirectly, and Debt, or otherwise) in, lease, sell, transfer or otherwise dispose of any assets, tangible or intangible, to, or participate in, or effect any transaction in connection with any joint enterprise or other joint arrangement with, any Affiliate, except, (1) pursuant to those agreements specifically identified on SCHEDULE 8.2 attached hereto (with a copy of such agreements annexed to such. SCHEDULE 8.2.) or (2) on terms to the Company or such Subsidiary no less favorable than terms that could be obtained by the Company or such Subsidiary from a Person that is not an Affiliate of the Company upon negotiation at arms' length, as determined in good faith by the Board of Directors of the Company; PROVIDED that no determination of the Board of Directors shall be required with respect to any such

transactions entered into in the ordinary course of business.

SECTION 8.3 MERGER OR CONSOLIDATION. The Company will not, in a single transaction or a series of related transactions (i) consolidate with or merge with or into any other Person, or (ii) permit any other Person to consolidate with or merge into it, unless the Company shall be the survivor of such merger or consolidation and (x) immediately before and immediately after given effect to such transaction (including any indebtedness incurred or anticipated to be incurred in connection with the transaction), no Default or Event of Default shall have occurred and be continuing; and (y) the Company has delivered to Purchaser an Officer's Certificate stating that such consolidation, merger or transfer complies with this Agreement, and that all conditions precedent in this Agreement relating to such transaction have been satisfied.

SECTION 8.4 LIMITATION ON ASSET SALES. Except as set forth on SCHEDULE 8.4, neither the Company nor any Subsidiary will consummate an Asset Sale of material assets of the Company or any Subsidiary without the prior written consent of Purchaser, which consent shall not be unreasonably withheld. As used herein, "Asset Sale" means any sale, lease, transfer or other disposition (or series of related sales, leases, transfers or dispositions) or sales of capital stock of a Subsidiary (other than directors' qualifying shares), property or other assets (each referred to for the purpose of this definition as a "disposition"), including any disposition by means of a merger, consolidation or similar transaction other than a disposition of property or assets in arm's length transactions in the ordinary course of business.

SECTION 8.5 RESTRICTIONS ON CERTAIN AMENDMENTS. Neither the Company nor any Subsidiary will waive any provision of, amend, or suffer to be amended, any provision of such entity's existing Debt, any material contract or agreement previously or hereafter filed by the Company with the Commission as part of its SEC Reports, any Company Corporate Document or Subsidiary Corporate Document if such amendment, in the Company's reasonable judgment, would materially adversely affect Purchaser or the holders of the Securities without the prior written consent of Purchaser.

27

SECTION 8.6 RESTRICTIONS ON ISSUANCES OF SECURITIES.

(a) In addition to and not in lieu of the covenant specified in Section 8.1 above:

(1) From the Closing Date and continuing until 180 days following the date on which the Registration Statement becomes effective, the Company agrees that it will not issue any of its equity securities (or securities convertible into or exchangeable or exercisable for equity securities (the "Derivative Securities")) on terms that allow a holder thereof to acquire such equity securities (or Derivative Securities) at a discount to the Market Price of the Common Stock at the time of issuance or, in the case of Derivative Securities, at a conversion price based on any formula (other than standard anti-dilution provisions) based on the Market Price on a date later than the date of issuance which is below the Market Price on the date of issuance (each such event, a "Discounted Equity Offering") other than (i) borrowings under conventional credit facilities existing as of the date hereof, (ii) stock issued or credit facilities to be established in connection with acquisitions, (iii) equity securities or Derivative Securities in connection with employee and director stock option and stock purchase plans, (iv) securities issued under the Convertible Debentures or Warrants and (v) any security issued to the Shoreline Fund or its Affiliates on substantially similar terms to those contemplated by this Agreement and the Transaction Agreements; provided that, any such security and any shares of Common Stock into which such security is convertible shall not be transferable for the lesser of (x) one year from the date of issuance of such security or (y) the date on which Purchaser no longer holds any Convertible Debentures. In addition, the Company shall not issue any equity securities in connection with a strategic alliance entered into by the Company unless such securities

are the subject of a one year statutory or contractual hold period or, if not subject to such a hold period, unless the Purchaser has fully converted all outstanding Convertible Debentures and exercised all Warrants. As used herein, "discount" shall include, but not be limited to, (i) any warrant, right or other security granted or offered in connection with such issuance which, on the applicable date of grant, is offered with an exercise or conversion price, as the case may be, at less than the then current Market Price of the Common Stock or, if such security has an exercise or conversion price based on any formula (other than standard anti-dilution provisions) based on the Market Price on a date later than the date of issuance, then at a price below the Market Price on such date of exercise or conversion, as the case may be, or (ii) any commissions, fees or other allowances paid in connection with such issuances (other than customary underwriter or placement agent commissions, fees or allowances). For the purposes of determining the Market Price at which Common Stock is acquired under this Section, normal underwriting commissions and placement fees (including underwriters' warrants) shall be excluded. Notwithstanding the foregoing, the Company may enter into the following types of transactions (collectively referred to as "Permitted Financings"): (1) "permanent financing" transactions, which would include any form of debt or equity financing (other than an underwritten offering), which is followed by a reduction of the said

28

financing commitment to zero and payment of all related fees and expenses; (2) "project financing" which provide for the issuance of recourse debt instruments in connection with the operation of the Company's business as presently conducted or as proposed to be conducted; (3) an underwritten offering of Common Stock, provided that such offering provides for the registration of the Conversion Shares if the Registration Statement has not been declared effective; and (4) other financing transactions specifically consented to in writing by the Purchaser.

(2) The restrictions set forth in paragraph (1) of this Section 8.6(a) shall terminate in the event the average Closing Bid Price for the Common Stock is equal to or greater than \$10.00 for ten Trading Days of any twelve consecutive Trading Day period and the Registration Statement is continuously effective during such period. The 180-day restrictive period set forth in paragraph (1) of this Section 8.6(a) shall be increased by one day for each day a Registration Default has occurred and not been cured by the Company.

(b) Until such time as all of the Convertible Debentures have been either redeemed or converted into Conversion Shares in full, the Company agrees it will not issue any of its equity securities (or Derivative Securities), unless any shares of Common Stock issued or issuable in connection therewith are "restricted securities." As used herein "restricted securities" shall mean securities which may not be sold prior to twelve (12) months following the date of issuance of such securities by virtue of contractual restrictions imposed by the Company or otherwise.

(c) Notwithstanding the foregoing, the restrictions contained in this Section 8.6 shall not apply to the issuance by the Company of (or the agreement to issue) Common Stock or securities convertible into Common Stock in connection with (i) the acquisition (including by merger) of a business or of assets otherwise permitted under this Agreement, or (ii) Company or Subsidiary stock option or other compensatory or employee benefit plans.

SECTION 8.7 LIMITATION ON STOCK REPURCHASES. Except as otherwise set forth in the Convertible Debentures and the Warrants, the Company shall not, without the written consent of the Majority Holders, redeem, repurchase or otherwise acquire (whether for cash or in exchange for property or other

securities or otherwise) any shares of capital stock of the Company or any warrants, rights or options to purchase or acquire any such shares.

SECTION 8.8 LIMITATION ON SALES BY OFFICERS AND EMPLOYEE DIRECTORS. For a period of 180 days following the date the Registration Statement is declared effective by the Commission, no executive officer or a employee director of the Company shall, individually, sell or otherwise dispose of (other than by reason of death or disability) to any Person an amount of Common stock greater than that allowed by Rule 144, promulgated under the Securities Act.

ARTICLE IX. RESTRICTIVE LEGENDS

SECTION 9.1 RESTRICTIONS ON TRANSFER. From and after their respective dates of issuance, none of the Securities shall be transferable except upon the conditions specified in this Article IX, which conditions are intended to ensure compliance with the provisions of the

29

Securities Act in respect of the Transfer of any of such Securities or any interest therein. Purchaser will cause any proposed transferee of any Securities held by it to agree to take and hold such Securities subject to the provisions and upon the conditions specified in this Article IX.

SECTION 9.2 NOTICE OF PROPOSED TRANSFERS. Prior to any proposed Transfer of the Securities the holder thereof shall give written notice to the Company of such holder's intention to effect such Transfer, setting forth the manner and circumstances of the proposed Transfer, which shall be accompanied by (A) an opinion of counsel reasonably acceptable to the Company, confirming that such transfer does not give rise to a violation of the Securities Act, (B) representation letters in form and substance reasonably satisfactory to the Company to ensure compliance with the provisions of the Securities Act and (C) letters in form and substance reasonably satisfactory to the Company from each such transferee stating such transferee's agreement to be bound by the terms of this Agreement and the Registration Rights Agreement. Such proposed Transfer may be effected only if the Company shall have received such notice of transfer, opinion of counsel, representation letters and other letters referred to in the immediately preceding sentence, whereupon the holder of such Securities shall be entitled to Transfer such Securities in accordance with the terms of the notice delivered by the holder to the Company.

ARTICLE X. ADDITIONAL AGREEMENTS AMONG THE PARTIES

SECTION 10.1 LIQUIDATED DAMAGES.

(a) The Company shall cause its transfer agent to, issue and deliver shares of Common Stock consistent with Section 7.11 hereof within three (3) New York Stock Exchange Trading Days of delivery of a Notice of Conversion or Notice of Exercise, as applicable (the "Deadline") to Purchaser (or any party receiving Securities by transfer from Purchaser) at the address of Purchaser set forth in the Notice of Conversion or Notice of Exercise, as the case may be. The Company understands that a delay in the issuance of such certificates after the Deadline could result in economic loss to Purchaser.

(b) Without in any way limiting Purchaser's right to pursue other remedies, including actual damages and/or equitable relief, the Company agrees that if delivery of the Conversion Shares is more than one (1) Business Day after the Deadline (other than a failure due to the circumstances described in Section 4.3 of the Convertible Debentures, which failure shall be governed by such Section) the Company shall pay to Purchaser, as liquidated damages and not as a penalty, \$500 in cash for each \$100,000 principal of Convertible Debentures then outstanding for each of the first ten days that the Company fails to deliver such Conversion Shares and \$1,000 in cash for each \$100,000 amount of Convertible Debentures then outstanding per each day thereafter. Such cash amount shall be paid in cash to Purchaser upon demand or, at the option of the Company (by written notice to the Purchaser by the first day of the week following the week in which it has accrued), shall be added to the principal amount of the Convertible Debenture (if then outstanding) payable to Purchaser, in which event interest shall accrue thereon in accordance with the terms of the Convertible Debentures and such additional principal amount shall be convertible into Conversion Shares in accordance with the terms of the Convertible Debentures.

SECTION 10.2 CONVERSION NOTICE. The Company agrees that, in addition to any other remedies which may be available to Purchaser, including, but not limited to, the remedies available under Section 10.1, in the event the Company fails for any reason (other than as a result of actions taken by Purchaser in breach of this Agreement) to effect delivery to Purchaser of certificates with or without restrictive legends as contemplated by Article IX representing the shares of Common Stock on or prior to the Deadline after conversion of any Convertible Debentures or exercise of the Warrants, Purchaser will be entitled, if prior to the delivery of such certificates, to revoke the Notice of Conversion or Notice of Exercise, as applicable, by delivering a notice to such effect to the Company whereupon the Company and Purchaser shall each be restored to their respective positions immediately prior to delivery of such Notice of Conversion or Notice of Exercise, as the case may be.

SECTION 10.3 CONVERSION LIMIT. Notwithstanding the conversion rights under the Convertible Debentures, unless Purchaser delivers a waiver in accordance with the immediately following sentence, in no event shall Purchaser be entitled to convert any portion of the Convertible Debentures, in excess of that portion of the Convertible Debentures, as applicable, of which the sum of (i) the number of shares of Common Stock beneficially owned by Purchaser and its Affiliates (other than shares of Common Stock which may be deemed beneficially owned through the ownership of the unconverted portion of the Convertible Debenture or other Derivative Securities convertible into or exchangeable for shares of Common Stock which contain a limitation similar to that set forth in this Section 10.3), and (ii) the number of shares of Common Stock issuable upon the conversion of the portion of the Convertible Debenture with respect to which this determination is being made, would result in beneficial ownership by Purchaser and its Affiliates of more than 4.99% of the outstanding shares of Common Stock. For purposes of Section 10.3(i) beneficial ownership shall be determined in accordance with Rule 13d-3 of the Exchange Act and Regulations 13 D-G thereunder, except as otherwise provided in this Section 10.3. The foregoing limitation shall not apply and shall be of no further force or effect (i) immediately preceding and upon the occurrence of any voluntary or mandatory redemption or repayment transaction described herein or in the Convertible Debentures, (ii) immediately preceding and upon any Sale Event, (iii) on the Maturity Date or (iv) following the occurrence of any Event of Default which is not cured for a period often (10) calendar days.

SECTION 10.4 REGISTRATION RIGHTS.

(a) The Company shall grant Purchaser registration rights covering the Conversion Shares (the: "Registrable Securities") on the terms set forth in the Registration Rights Agreement and herein.

(b) The Company shall prepare and file on or before the 30th day following the Closing Date (the "Filing Date"), a registration statement or amendment thereto (the "Registration Statement") covering the resale of the Registrable Securities with the Commission. In the event the Company fails to file the Registration Statement by the Filing Date for any reason other than Purchaser's failure to provide information requested by the Company for the completion and filing of the Registration Statement, the Company shall pay to Purchaser as liquidated damages (and not as a penalty) one percent (1%) of the then outstanding principal amount of Convertible Debentures per day until the Registration Statement is filed with the Commission. The Company shall use its best efforts to cause the Registration Statement to be

declared effective by the Commission or the earlier of (i) 90 days following the Closing Date, (ii) ten days following the receipt of a "No Review" Letter from the Commission or (iii) the first Business Day following the day the Commission determines the Registration Statement eligible to be declared effective (the "Required Effectiveness Date"). The Company shall pay all expenses of registration (other than underwriting fees and discounts, if any, in respect of Registrable Securities offered and sold under the registration statement by Purchaser). The Company agrees to file an initial written response to the Commission within ten calendar days of receipt of any comments by the Commission relating to the Registration Statement.

(c) If the Registration Statement is not declared effective by the Commission by the Required Effectiveness Date, the Company shall pay to Purchaser, as liquidated damages (and not as a penalty), an amount equal to 2% of the outstanding principal amount of the Convertible Debentures, prorated, for each 30 day period the Registration Statement is not declared effective by the Commission, which amount will be increased to 3% of the outstanding principal amount of the Convertible Debentures in the event that the Registration Statement is not declared effective by the Commission within 120 days of the Closing Date. In the event the Company fails to obtain a valid registration statement by the 180th day following the Closing Date, the Company will redeem the Convertible Debentures and the Warrants as set forth in Section 5 of the Convertible Debentures and Section 13 of the Warrants, respectively. Additionally, the Company will grant to Purchaser certain piggyback registration rights in the event the Company proposes to effect a registered offering of Common Stock or warrants or both prior to the filing of the Registration Statement referenced above.

(d) Any such liquidated damages shall be paid in cash by the Company to Purchaser by wire transfer in immediately available funds on the last day of each calendar week following the event requiring its payment.

(e) If, following the declaration of effectiveness of the Registration Statement, such registration statement (or any prospectus or supplemental prospectus contained therein) shall cease to be effective for any reason (including but not limited to the occurrence of any event that results in any prospectus or supplemental prospectus containing an untrue statement of a material fact or omitting a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading), the Company fails to file required amendments to the Registration Statement in order to allow the Purchaser to resell the Conversion Shares pursuant to the Registration Statement as unrestricted, unlegended, freely tradeable shares of Common Stock, or if for any reason there are insufficient shares of such shares of Common Stock registered under the then current Registration Statement to effect full conversion of the Convertible Debentures or exercise of the Warrants (a "Registration Default"), the Company shall immediately take all necessary steps to cause the Registration Statement to be amended or supplemented so as to cure such Registration Default. Failure to cure a Registration Default within ten (10) Business Days shall result in the Company paying to Purchaser liquidated damages at the rate of \$1,000 per day from the date of such Registration Default until the Registration Default is cured.

ARTICLE XI. ADJUSTMENT OF FIXED PRICE

SECTION 11.1 REORGANIZATION. The Conversion Price and the exercise price of the Warrants (collectively, the "Fixed Price") shall be adjusted, as applicable, as hereafter provided.

SECTION 11.2 SHARE REORGANIZATION. If and whenever the Company shall:

(i) subdivide the outstanding shares of Common Stock into a greater number of shares;

(ii) consolidate the outstanding shares of Common Stock into a smaller number of shares;

(iii) issue Common Stock or securities convertible into or exchangeable for shares of Common Stock as it stock dividend to all or substantially all the holders of Common Stock; or

(iv) make a distribution on the outstanding Common Stock to all or substantially all the holders of Common Stock payable in Common Stock or securities convertible into or exchangeable for Common Stock; any of such events being herein called a "Share Reorganization," then in each such case the applicable Fixed Price shall be adjusted, effective immediately after the record date at which the holders of Common Stock are, determined for the purposes of the Share Reorganization or, if no record date is fixed, the effective date of the Share Reorganization, by multiplying the applicable Fixed Price in effect on such record or effective date, as the case may be, by a fraction of which:

(I) the numerator shall be the number of shares of Common Stock outstanding on such record or effective date (without giving effect to the Share Reorganization); and

(II) the denominator shall be the number of shares of Common Stock outstanding after giving effect to such Share Reorganization, including, in the case of a distribution of securities convertible into or exchangeable for shares of Common Stock, the number of shares of Common Stock that would have been outstanding if such securities had been converted into or exchanged for Common Stock on such record or effective date.

SECTION 11.3 RIGHTS OFFERING. If and whenever the Company shall issue to all or substantially all the holders of Common Stock, rights, options or warrants under which such holders are entitled, during a period expiring not more than 45 days after the record date of such issue, to subscribe for or purchase Common Stock (or Derivative Securities), at a price per share (or, in the case of securities convertible into or exchangeable for Common Stock, at an exchange or conversion price per share at the date of issue of such securities) of less than 95% of the Market Price of the Common Stock on such record date (any such event being herein called a "Rights Offering"), then in each such case the applicable Fixed Price shall be adjusted, effective immediately after the record date at which holders of Common Stock are determined for the purposes of the Rights Offering, by multiplying the applicable Fixed Price in effect on such record date by a fraction of which:

33

(i) the numerator Shall be the sum of:

(I) the number of shares of Common Stock outstanding on such record date; and

(II) a number obtained by dividing:

(A) either,

(x) the product of the total number of shares of Common Stock so offered for subscription or purchase and the price at which such shares are so offered, or

(y) the product of the maximum number of shares of Common Stock into or for which the convertible or exchangeable securities so offered for subscription or purchase may be converted or exchanged and the conversion or exchange price of such securities, or, as the case may be, by

(B) the Market Price of the Common Stock on such record date; and

(ii) the denominator shall be the sum of:

(I) the number of shares of Common Stock outstanding on such record date; and

(II) the number of shares of Common Stock so offered for subscription or purchase (or, in the case of Derivative Securities, the maximum number of shares of Common Stock for or into which the securities so offered for subscription or purchase may be converted or exchanged).

To the extent that such rights, options or warrants are not exercised prior to the expiry time thereof, the applicable Fixed Price shall be readjusted effective immediately after such expiry time to the applicable Fixed Price which would then have been in effect upon the number of shares of Common Stock (or Derivative Securities) actually delivered upon the exercise of such rights,, options or warrants.

SECTION 11.4 SPECIAL DISTRIBUTION. If and whenever the Company shall issue or distribute to all or substantially all the holders of Common Stock:

- Stock;
- (i) shares of the Company of any class, other than Common
 - (ii) rights, options or warrants; or
 - (iii) any other assets (excluding cash dividends and equivalent dividends in shares paid in lieu of cash dividends in the ordinary course);

34

and if such issuance or distribution does not constitute a Share Reorganization or a Rights Offering (any such event being herein called a "Special Distribution"), then in each such case the applicable Fixed Price shall be adjusted, effective immediately after the record date at which the holders of Common Stock are determined for purposes of the Special Distribution, by multiplying the applicable Fixed Price in effect on such record date by a fraction of which:

(i) the numerator shall be the difference between:

(A) the product of the number of shares of Common Stock outstanding on such record date and the Market Price of the Common Stock on such date; and

(B) the fair market value, as determined by the Directors (whose determination shall be conclusive), to the holders of Common Stock of the shares, rights, options, warrants, evidences of indebtedness or other assets issued or distributed in the Special Distribution (net of any consideration paid therefor by the holders of Common Stock), and

(ii) the denominator shall be the product of the number of shares of Common Stock outstanding on such record date and the Market Price of the Common Stock on such date.

SECTION 11.5 CAPITAL REORGANIZATION: If and whenever there shall occur:

(i) a reclassification or redesignation of the shares of Common Stock or any change of the shares of Common Stock into other shares, other than in a Share Reorganization;

(ii) a consolidation, merger or amalgamation of the Company with, or into another body corporate; or

(iii) the transfer of all or substantially all of the assets of the Company to another body corporate;

(any such event being herein called a "Capital Reorganization"), then in each such case the holder who exercises the right to convert Convertible Debentures after the effective date of such Capital Reorganization shall be entitled to receive and shall accept, upon the exercise of such right, in lieu of the number of shares of Common Stock to which such holder was theretofore entitled upon the exercise of the conversion privilege, the aggregate number of shares or other securities or property of the Company or of the body corporate resulting from such Capital Reorganization that such holder would have been entitled to receive as a result of such Capital Reorganization if, on the effective date thereof, such holders had been the holder of the number of shares of Common Stock to which such holder was theretofore entitled upon conversion; provided, however, that no such Capital Reorganization shall be consummated in effect unless all necessary steps shall have been taken so that such holders shall thereafter be entitled to receive such number of shares or other securities of the Company or of the body corporate resulting from such Capital Reorganization, subject to adjustment thereafter in accordance with

35

provisions the same, as nearly as maybe possible, as those contained above.

SECTION 11.6 ADJUSTMENT RULES. The following rules and procedures shall be applicable to adjustments made in this Article XI:

(a) no adjustment in the applicable Fixed Price shall be required unless such adjustment would result in a change of at least 1% in the applicable Fixed Price then in effect, provided, however, that any adjustments which, but for the provisions of this clause would otherwise have been required to be made, shall be carded forward and taken into account in any subsequent adjustment;

(b) if any event occurs of the type contemplated by the adjustment provisions of this Article XI but not expressly provided for by such provisions, the Company will give notice of such event as provided herein, and the Directors will make an appropriate adjustment in the Fixed Price so that the rights of the holders of the applicable Security shall not be diminished by such event; and

(c) if a dispute shall at any time arise with respect to any adjustment of the applicable Fixed Price, such dispute shall be conclusively determined by the auditors of the Company or, if they are unable or unwilling to act, by a firm of independent chartered accountants selected by the Directors and any such determination shall be binding upon the Company and Purchaser.

SECTION 11.7 CERTIFICATE AS TO ADJUSTMENT. The Company shall from time to time promptly after the occurrence of any event which requires an adjustment in the applicable Fixed Price deliver to Purchaser a certificate specifying the nature of the event requiring the adjustment, the amount of the adjustment necessitated thereby, the applicable Fixed Price after giving effect to such adjustment and setting forth, in reasonable detail, the method of calculation and the facts upon which such calculation is based.

SECTION 11.8 NOTICE TO HOLDERS. If the Company shall fix a record date for:

(a) any Share Reorganization (other than the subdivision of outstanding Common Stock into a greater number of shares or the consolidation of outstanding Common Stock into a smaller number of shares),

(b) any Rights Offering,

(c) any Special Distribution,

(d) any Capital Reorganization (other than a reclassification or redesignation of the Common Stock into other shares),

(e) Sale Event; or

(f) any cash dividend,

the Company shall, not less than 10 days prior to such record date or, if no record date is fixed,

36

prior to the effective date of such event, give to Purchaser notice of the particulars of the proposed event or the extent that such particulars have been determined at the time of giving the notice.

ARTICLE XII. EVENTS OF DEFAULT

SECTION 12.1 EVENTS OF DEFAULT. If one or more of the following events (each an "Event of Default") shall have occurred and be continuing:

(a) failure by the Company to pay or repay when due, all or any part of the principal on any of the Convertible Debentures (whether by virtue of the agreements specified in this Agreement or the Convertible Debentures);

(b) failure by the Company to pay (i) within five (5) Business Days of the due date thereof any interest on any Convertible Debentures or (ii) within five (5) Business Days following the delivery of notice to the Company of any fees or any other amount payable (not otherwise referred to in (a) above or this clause (b)) by the Company under this Agreement or any other Transaction Agreement;

(c) failure by the Company to timely comply with the requirements of Section 7.11 or 10.1 hereof, which failure is not cured within five (5) Business Days of such failure;

(d) failure on the part of the Company to observe or perform any covenant contained in Section 7.10 or Article VIII of this Agreement;

(e) failure on the part of the Company to observe or perform any covenant or agreement contained in any Transaction Agreement (other than those covered by clauses (a), (b), (c), or (d) above) for 30 days from the date of such occurrence;

(f) the trading in the Common Stock shall have been suspended by the Commission or any National Market (except for any suspension of trading of limited duration solely to permit dissemination of material information regarding the Company and except if, at the time there is any suspension on any National Market, the Common Stock is then listed and approved for trading on another National Market within ten (10) Trading Days thereof);

(g) failure of the Company to file the Listing Applications when the Company is eligible within twenty (20) Business Days of the Closing Date, which failure is not cured within five (5) Business Days of such failure;

(h) the Company shall have its Common Stock delisted from a National Market for at least ten (10) consecutive Trading Days and is unable to obtain a listing on a National Market within such ten (10) Trading Days;

(i) the Registration Statement shall not have been declared effective by the Commission by the Required Effectiveness Date, or such effectiveness shall not be maintained for the Registration Maintenance Period, in each case which results in the Company incurring the Registration Default fee for a period in excess of 10 days;

37

(j) the Company or any Subsidiary has commenced a voluntary case or other proceeding seeking liquidation, winding-up, reorganization or other relief with respect to itself or its debts under any bankruptcy, insolvency, moratorium or other similar law now or hereafter in effect or seeking the appointment of a trustee, receiver, liquidator, custodian or other similar official of it or any substantial part of its property, or has consented to any such relief or to the appointment of or taking possession by any such official in an involuntary case or other proceeding commenced against it, or has made a general assignment for the benefit of creditors, or has failed generally to pay its debts as they become due, or has taken any corporate action to authorize any of the foregoing;

(k) an involuntary case or other proceeding has been commenced against the Company or any Subsidiary seeking liquidation, winding-up, reorganization or other relief with respect to it or its debts under any bankruptcy, insolvency, moratorium or other similar law now or hereafter in effect or seeking the appointment of a trustee, receiver, liquidator, custodian or other similar official of it or any substantial part of its property, and such involuntary case or other proceeding shall remain undismissed and unstayed for a period of 60 days, or an order for relief has been entered against the Company or any Subsidiary under the federal bankruptcy laws as now or hereafter in effect;

(l) except for the Company's current default in its credit facility as disclosed in footnote 8 to its financial statements for the quarter ended June 30, 2000, default in any provision (including payment) or any agreement governing the terms of any Debt of the Company or any Subsidiary in excess of \$500,000, which has not been cured within any applicable period of grace associated therewith;

(m) judgments or orders for the payment of money which in the aggregate at any one time exceed \$1,000,000 and are not covered by insurance have been rendered against the Company or any Subsidiary by a court of competent jurisdiction and such judgments or orders shall continue unsatisfied and unstayed for a period of 60 days; or

(n) any representation, warranty, certification or statement made by the Company in any Transaction Agreement or which is contained in any certificate, document or financial or other statement furnished at any time under or in connection with any Transaction Agreement shall prove to have been untrue in any material respect when made.

then, and in every such occurrence, Purchaser may, with respect to an Event of Default specified in paragraphs (a) or (b), and the Majority Holders may, with respect to any other Event of Default, by notice to the Company, declare the Convertible Debentures to be, and the Convertible Debentures shall thereon become immediately due and payable; provided that in the case of any of the Events of Default specified in paragraph (j) or (k) above with respect to the Company or any Subsidiary, then, without any notice to the Company or any other act by Purchaser, the entire amount of the Convertible Debentures shall become immediately due and payable, PROVIDED, FURTHER, if any Event of Default has occurred and is continuing, and irrespective of whether any Convertible Debenture has been declared immediately due and payable hereunder, any Purchaser of Convertible Debentures may proceed to protect and enforce the rights of Purchaser by an action at law, suit in equity or other appropriate proceeding, whether for the specific performance of any agreement contained herein or in any Convertible

38

Debenture, or for an injunction against a violation of any of the terms hereof or thereof, or in aid of the exercise of any power granted hereby or thereby or by law or otherwise, and PROVIDED FURTHER, in the case of any Event of Default, the amount declared due and payable on the Convertible Debentures shall be the redemption price set forth therein.

SECTION 12.2 POWERS AND REMEDIES CUMULATIVE. No right or remedy herein conferred upon or reserved to Purchaser is intended to be exclusive of any other right or remedy, and every right and remedy shall, to the extent permitted by law, be cumulative and in addition to every other right and remedy given hereunder or now hereafter existing at law or in equity or otherwise. The assertion or employment of any right or remedy hereunder, or otherwise, shall not prevent the concurrent assertion or employment of any other appropriate right or remedy. Every power and remedy given by the Convertible Debentures or by law may be exercised from time to time, and as often as shall be deemed expedient, by Purchaser.

ARTICLE XIII. MISCELLANEOUS

SECTION 13.1 NOTICES. All notices, demands and other communications to any party hereunder shall be in writing (including telecopier or similar writing) and shall be given to such party at its address set forth on the signature pages hereof, or such other address as such party may hereafter specify for the purpose to the other parties. Each such notice, demand or other communication shall be effective (i) if given by telecopy, when such telecopy is transmitted to the telecopy number specified on the signature page hereof, the sender has received electronic confirmation of the transmission thereof and the sender has provided contemporaneous telephonic notice to the recipient of such transmission, (ii) if given by mail, four days after such communication is deposited in the United States mail with first class postage prepaid, addressed as aforesaid or (iii) if given by any other means, when delivered at the address specified in or pursuant to this Section. For purposes of telephonic notice to the company in clause (i) above, such telephonic notice shall be to Richard T. Schumacher, Kevin Quinlan or Kathi Benjamin unless the Company notifies the Purchaser of other individuals to whom telephone notice may be directed.

SECTION 13.2 NO WAIVERS; AMENDMENTS.

(a) No failure or delay on the part of any party in exercising any right, power or remedy hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any such right, power or remedy preclude any other or further exercise thereof or the exercise of any other right, power or remedy.

(b) Any provision of this Agreement may be amended, supplemented or waived if, but only if, such amendment, supplement or waiver is in writing and is signed by the Company and the Majority Holders; provided, that without the consent of each holder of any Convertible Debenture affected

thereby, an amendment or waiver may not (a) reduce the aggregate principal amount of Convertible Debentures whose holders must consent to an amendment or waiver, (b) reduce the rate or extend the time for payment of interest on any Convertible Debenture, (c) reduce the principal amount of or extend the stated maturity of any Convertible Debenture or (d) make any Convertible Debenture payable in money or property other than as stated in such Convertible Debenture. In determining whether the holders of the

39

requisite principal amount of Convertible Debentures have concurred in any direction, consent, or waiver as provided in any Transaction Agreement, Convertible Debentures which are owned by the Company or any other obligor on or guarantor of the convertible Debentures, or by any Person Controlling, Controlled by, or under common Control with any of the foregoing, shall be disregarded and deemed not to be outstanding for the purpose of any such determination; and PROVIDED FURTHER that no such amendment, supplement or waiver which affects the rights of Purchaser and their affiliates otherwise than solely in their capacities as holders of Convertible Debentures shall be effective with respect to them without their prior written consent.

SECTION 13.3 INDEMNIFICATION.

(a) The Company agrees to indemnify and hold harmless Purchaser, its Affiliates, and each Person, if any, who controls Purchaser, or any of its Affiliates, within the meaning of the Securities Act or the Exchange Act (each, a "Controlling Person"), and the respective partners, agents, employees, officers and Directors of Purchaser, their Affiliates and any such Controlling Person (each a "Purchaser Indemnified Party") and collectively, the "Purchaser Indemnified Parties"), from and against any and all losses, claims, damages, liabilities and expenses (including, without limitation and as incurred, reasonable costs of investigating, preparing or defending any such claim or action, whether or not such Purchaser Indemnified Party is a party thereto, provided that the Company shall not be obligated to advance such costs to any Purchaser Indemnified Party other than Purchaser unless it has received from such Purchaser Indemnified Party an undertaking to repay to the Company the costs so advanced if it should be determined by final judgment of a court of competent jurisdiction that such Purchaser Indemnified Party was not entitled to indemnification hereunder with respect to such costs) which may be incurred by such Purchaser Indemnified Party in connection with any investigative, administrative or judicial proceeding brought or threatened that relates to or arises out of, or is in connection with any activities contemplated by any Transaction Agreement or any other services rendered in connection herewith; provided that the Company will not be responsible for any claims, liabilities, losses, damages or expenses that are determined by final judgment of a court of competent jurisdiction to result from such Purchaser Indemnified Party's gross negligence, willful misconduct or bad faith.

(b) The Purchaser agrees to indemnify and hold harmless the Company, its Affiliates, and each Person, if any, who controls the Company, or any of its Affiliates, within the meaning of the Securities Act or the Exchange Act (each, a "Controlling Person"), and the respective employees, officers and Directors of the Company (each a "Company Indemnified Party") and collectively, the "Company Indemnified Parties"), from and against any and all losses, claims, damages, liabilities and expenses (including, without limitation and as incurred, reasonable costs of investigating, preparing or defending any such claim or action, whether or not such Company Indemnified Party is a party thereto, provided that the Purchaser shall not be obligated to advance such costs to any Company Indemnified Party other than the Company unless it has received from such Company Indemnified Party an undertaking to repay to the Purchaser the costs so advanced if it should be determined by final judgment of a court of competent jurisdiction that such Company Indemnified Party was not entitled to indemnification hereunder with respect to such costs) which may be incurred by such Company Indemnified Party in connection with any investigative, administrative or judicial proceeding brought or threatened that relates to or arises out of, or is in connection with any activities contemplated by

40

any Transaction Agreement or any other services rendered in connection herewith; provided that the Purchaser will not be responsible for any claims, liabilities,

losses, damages or expenses that are determined by final judgment of a court of competent jurisdiction to result from such Company Indemnified Party's gross negligence, willful misconduct or bad faith.

(c) If any action shall be brought against a Purchaser Indemnified Party or a Company Indemnified Party (each an "Indemnified Party") with respect to which indemnity may be sought against a party under this Agreement, such Indemnified Party shall promptly notify the party or parties from whom indemnification is being claimed (the "Indemnifying Party") in writing and the Indemnifying Party, at its option, may, assume the defense thereof, including the employment of counsel reasonably satisfactory to such Indemnified Party and payment of all reasonable fees and expenses. The failure to so notify the Indemnifying Party shall not affect any obligations the Indemnifying Party may have to such Indemnified Party under this Agreement or otherwise unless the Indemnifying Party is materially adversely affected by such failure.. Such Indemnified Party shall have the right to employ separate counsel in such action and participate in the defense thereof, but the fees and expenses of such counsel shall be at the expense of such Indemnified Party, unless (i) the Indemnifying Party has failed to assume the defense and employ counsel or (ii) the named parties to any such action (including any impleaded parties) include such Indemnified Party and the Indemnifying Party, and such Indemnified Party shall have been advised by counsel that there may be one or more legal defenses available to it which conflict with those available to the Indemnifying Party, in which case, if such Indemnified Party notifies the Indemnifying Party in writing that it elects to employ separate counsel at the expense of the Indemnifying Party, the Indemnifying Party shall not have the right to assume the defense of such action or proceeding on behalf of such Indemnified Party, PROVIDED, HOWEVER, that the Indemnifying Party shall not, in connection with any one such action or proceeding or separate but substantially similar or related actions or proceedings in the same jurisdiction arising out of the same general allegations or circumstances, be responsible hereunder for the reasonable fees and expenses of more than one such firm of separate counsel, in addition to any local counsel, which counsel shall be designated by the Indemnified Party. The Indemnifying Party shall not be liable for any settlement of any such action effected without the written consent of the Indemnifying Party (which shall not be unreasonably withheld) and the Indemnifying Party agrees to indemnify and hold harmless each Indemnified Party from and against any loss or liability by reason of settlement of any action effected with the consent of the Indemnifying Party. In addition, the Indemnifying Party will not, without the prior written consent of the Indemnified Party, settle or compromise or consent to the entry of any judgment in or otherwise seek to terminate any pending or threatened action, claim, suit or proceeding in respect to which indemnification may be sought hereunder (whether or not any Indemnified Party is a party thereto) unless such settlement, compromise, consent or termination includes an express unconditional release of the Indemnified Party and the other Indemnified Parties, satisfactory in form and substance to the Indemnified Party, from all liability arising out of such action, claim, suit or proceeding.

(d) The indemnification and expense reimbursement obligations set forth in this Section 13.3 shall be in addition to any liability any Indemnifying Party may have to any Indemnified Party at common law or otherwise; (ii) shall survive the termination of this Agreement and the other Transaction Agreements and the payment in full of the Convertible

41

Debentures and (iii) shall remain operative and in full force and effect regardless of any investigation made by or on behalf of Purchaser or the Company or any other Indemnified Party.

SECTION 13.4 EXPENSES: DOCUMENTARY TAXES. The Company agrees to pay to Purchaser a fee of \$25,000.00 (the "Expense Reimbursement Fee") in full satisfaction of all obligations of the Company to Purchaser and its agents in connection with the negotiation and preparation of the Transaction Agreements, relevant due diligence, and fees and disbursements of legal counsel. In addition, the Company agrees to pay any and all stamp, transfer and other similar taxes, assessments or charges payable in connection with the execution and delivery of any Transaction Agreement or the issuance of the Securities to Purchaser, excluding their assigns.

SECTION 13.5 PAYMENT. The Company agrees that, so long as Purchaser shall own any Convertible Debentures purchased by it from the Company hereunder,

the Company will make payments to Purchaser of all amounts due thereon by wire transfer by 4:00 P.M. (E.S.T.).

SECTION 13.6 SUCCESSORS AND ASSIGNS. This Agreement shall be binding upon the Company and upon Purchaser and its respective successors and assigns. So long as the Convertible Debentures remain outstanding, the Company shall not assign or otherwise transfer its rights or obligations under this Agreement to any other Person without the prior written consent of the Majority Holders. All provisions hereunder purporting to give rights to Purchaser and its affiliates or to holders of Securities are for the express benefit of such Persons and their successors and assigns.

SECTION 13.7 BROKERS. Except for a fee payable to Wharton Capital Markets, LLC, and DP Securities, Inc., each a registered broker-dealer, in the form of (i) a cash fee of 6% of the principal amount of the Convertible Debentures issued on the Closing Date; and (ii) warrants to purchase 20,000 shares of Company Common Stock, the Company represents and warrants that it has not employed any broker, finder, financial advisor or investment banker who would be entitled to any brokerage, finder's or other fee or commission payable by the Company or Purchaser in connection with the sale of the Securities. Purchaser represents and warrants that it has not employed any other broker, finder, financial advisor or investment banker who would be entitled to any brokerage, finder's or other fee or commission payable by the Company in connection with the sale of the Securities.

SECTION 13.8 MASSACHUSETTS LAW; SUBMISSION TO JURISDICTION; WAIVER OF JURY TRIAL; APPOINTMENT OF AGENT. THIS AGREEMENT SHALL BE CONSTRUED IN ACCORDANCE WITH AND GOVERNED BY THE LAWS OF THE STATE OF MASSACHUSETTS. EACH PARTY HERETO HEREBY SUBMITS TO THE EXCLUSIVE JURISDICTION OF THE UNITED STATES DISTRICT COURT FOR THE STATE OF MASSACHUSETTS AND OF ANY FEDERAL DISTRICT COURT SITTING IN BOSTON, MASSACHUSETTS FOR PURPOSES OF ALL LEGAL PROCEEDINGS ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY. EACH PARTY HERETO IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY LAW, ANY OBJECTION WHICH IT MAY NOW OR HEREAFTER HAVE TO THE LAYING OF THE VENUE OF ANY SUCH PROCEEDING

42

BROUGHT IN SUCH A COURT AND ANY CLAIM THAT ANY SUCH PROCEEDING BROUGHT IN SUCH A COURT HAS BEEN BROUGHT IN AN INCONVENIENT FORUM. EACH PARTY TO THIS AGREEMENT IRREVOCABLY CONSENTS TO THE SERVICE OF PROCESS IN ANY SUCH PROCEEDING BY THE MAILING OF COPIES THEREOF BY REGISTERED OR CERTIFIED MAIL, POSTAGE PREPAID, TO SUCH PARTY AT ITS ADDRESS SET FORTH HEREIN. NOTHING HEREIN SHALL AFFECT THE RIGHT OF ANY PARTY TO SERVE PROCESS IN ANY OTHER MANNER PERMITTED BY LAW, EACH PARTY WAIVES ITS RIGHT TO A TRIAL BY JURY.

SECTION 13.9 ENTIRE AGREEMENT. This Agreement, the Exhibits or Schedules hereto, which include, but are not limited to the Convertible Debenture, the Warrant and the Registration Rights Agreement, set forth the entire agreement and understanding of the parties relating to the subject matter hereof and supercedes all prior and contemporaneous agreements, negotiations and understandings between the parties, both oral and written relating to the subject matter hereof. The terms and conditions of all Exhibits and Schedules to this Agreement are incorporated herein by this reference and shall constitute part of this Agreement as is fully set forth herein.

SECTION 13.10 SURVIVAL; SEVERABILITY. The representations, warranties, covenants and agreements of the parties hereto shall survive the Closing hereunder. In the event that any provision of this Agreement becomes or is declared by a court of competent jurisdiction to be illegal, unenforceable or void, this Agreement shall continue in full force and effect without said provision; provided that such severability shall be ineffective if it materially changes the economic benefit of this Agreement to any party.

SECTION 13.11 TITLE AND SUBTITLES. The titles and subtitles used in this Agreement are used for convenience only and are not to be considered in construing or interpreting this Agreement.

SECTION 13.12 REPORTING ENTITY FOR THE COMMON STOCK. The reporting entity relied upon for the determination of the trading price or trading volume of the Common Stock on any given Trading Day for the purposes of this Agreement

and all Exhibits shall be Bloomberg, L.P. or any successor thereto. The written mutual consent of the Purchaser and the Company shall be required to employ any other reporting entity.

SECTION 13.13 PUBLICITY. The Company and the Purchaser shall consult with each other in issuing any press releases or otherwise making public statements with respect to the transactions contemplated hereby and no party shall issue any such press release or otherwise make any such public statement without the prior written consent of the other parties, which consent shall not be unreasonably withheld or delayed, except that no prior consent shall be required if such disclosure is required by law, in which such case the disclosing party shall provide the other parties with prior notice of such public statement. Notwithstanding the foregoing, the Company shall not publicly disclose the name of Purchaser without the prior written consent of Purchaser, except to the extent required by law, in which case the Company shall provide Purchaser with prior written notice of such public disclosure.

[SIGNATURE PAGE FOLLOWS]

43

SIGNATURE PAGE FOR SECURITIES PURCHASE AGREEMENT

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed by their respective authorized officers, as of the date first above written.

BOSTON BIOMEDICA, INC.

By: /s/ Kevin W. Quinlan

Name: Kevin W. Quinlan
Title: President

Address: Boston Biomedica, Inc.
375 West Street
West Bridgewater, MA 02379

Fax: (508) 580-1110
Tel.: (508) 580-1900

GCA STRATEGIC INVESTMENT FUND LIMITED

By: /s/ Lewis N. Lester

Name: Lewis N. Lester
Title: Director

Address: c/o Prime Management Limited
Mechanics Building
12 Church Street
Hamilton HM II, Bermuda

Fax: 441-295-3926
Tel.: 441-295-0329

44

EXHIBIT 10.2

SECURITIES PURCHASE AGREEMENT

DATED AS OF

AUGUST 25, 2000

BY AND BETWEEN

BOSTON BIOMEDICA, INC.

AS THE ISSUER,

AND

RICHARD P. KIPHART AND

SHORELINE FUND, LTD.

TABLE OF CONTENTS

<TABLE>

<S>	<C>		
DEFINITIONS	1		
DEFINITIONS	1		
ACCOUNTING TERMS AND DETERMINATIONS		9	
PURCHASE AND SALE OF SECURITIES		9	
PURCHASE AND SALE OF CONVERTIBLE DEBENTURES			9
PURCHASE PRICE	10		
CLOSING AND MECHANICS OF PAYMENT		10	
PAYMENT TERMS OF CONVERTIBLE DEBENTURES			10
PAYMENT OF PRINCIPAL AND INTEREST; PAYMENT MECHANICS			10
RANKING; PAYMENT OF INTEREST		11	
VOLUNTARY PREPAYMENT		11	
MANDATORY PREPAYMENTS		11	
PREPAYMENT PROCEDURES		12	
PAYMENT OF ADDITIONAL AMOUNTS			13
REPRESENTATIONS AND WARRANTIES			15
ORGANIZATION AND QUALIFICATION			15
AUTHORIZATION AND EXECUTION			15
CAPITALIZATION	16		
GOVERNMENTAL AUTHORIZATION			16
ISSUANCE OF SHARES		17	
NO CONFLICTS	17		
FINANCIAL INFORMATION		17	
LITIGATION	18		
COMPLIANCE WITH ERISA AND OTHER BENEFIT PLANS			18
ENVIRONMENTAL MATTERS		19	
TAXES	19		
INVESTMENTS, JOINT VENTURES		19	
NOT AN INVESTMENT COMPANY		19	
FULL DISCLOSURE	19		
NO SOLICITATION; NO INTEGRATION WITH OTHER OFFERINGS			19
PERMITS	20		
LEASES	20		
ABSENCE OF ANY UNDISCLOSED LIABILITIES OR CAPITAL CALLS			20
PUBLIC UTILITY HOLDING COMPANY			20
INTELLECTUAL PROPERTY RIGHTS			20
INSURANCE	21		
TITLE TO PROPERTIES		21	
INTERNAL ACCOUNTING CONTROLS			21
FOREIGN PRACTICES	21		
REPRESENTATIONS AND WARRANTIES OF PURCHASER			21
PURCHASER	21		
CONDITIONS PRECEDENT TO PURCHASE OF SECURITIES			23
CONDITIONS PRECEDENT TO PURCHASER'S OBLIGATIONS TO PURCHASE			23
CONDITIONS TO THE COMPANY'S OBLIGATIONS		25	
AFFIRMATIVE COVENANTS	25		

INFORMATION	25		
PAYMENT OF OBLIGATIONS		26	
MAINTENANCE OF PROPERTY; INSURANCE			27
MAINTENANCE OF EXISTENCE		27	
</TABLE>			
<TABLE>			
<S>			
	<C>		
COMPLIANCE WITH LAWS		27	
INSPECTION OF PROPERTY, BOOKS AND RECORDS			27
INVESTMENT COMPANY ACT		27	
USE OF PROCEEDS	27		
COMPLIANCE WITH TERMS AND CONDITIONS OF MATERIAL CONTRACTS			28
RESERVED SHARES AND LISTINGS		28	
TRANSFER AGENT INSTRUCTIONS		29	
MAINTENANCE OF REPORTING STATUS; SUPPLEMENTAL INFORMATION			29
FORM D; BLUE SKY LAWS	29		
SALES BY PURCHASER	30		
NEGATIVE COVENANTS	30		
LIMITATIONS ON DEBT OR OTHER LIABILITIES			30
TRANSACTIONS WITH AFFILIATES		30	
MERGER OR CONSOLIDATION		30	
LIMITATION ON ASSET SALES		31	
RESTRICTIONS ON CERTAIN AMENDMENTS			31
RESTRICTIONS ON ISSUANCES OF SECURITIES.			31
LIMITATION ON STOCK REPURCHASES		33	
LIMITATION ON SALES BY OFFICERS AND EMPLOYEE DIRECTORS			33
RESTRICTIVE LEGENDS	33		
RESTRICTIONS ON TRANSFER		33	
NOTICE OF PROPOSED TRANSFERS		33	
ADDITIONAL AGREEMENTS AMONG THE PARTIES			34
LIQUIDATED DAMAGES		34	
CONVERSION NOTICE		34	
CONVERSION LIMIT		35	
REGISTRATION RIGHTS		35	
ADJUSTMENT OF FIXED PRICE		37	
REORGANIZATION		37	
SHARE REORGANIZATION		37	
RIGHTS OFFERING		37	
SPECIAL DISTRIBUTION		39	
CAPITAL REORGANIZATION		39	
ADJUSTMENT RULES		40	
CERTIFICATE AS TO ADJUSTMENT			40
NOTICE TO HOLDERS		41	
EVENTS OF DEFAULT		41	
EVENTS OF DEFAULT.		41	
POWERS AND REMEDIES CUMULATIVE			44
MISCELLANEOUS		44	
NOTICES	44		
NO WAIVERS; AMENDMENTS			44
INDEMNIFICATION		45	
EXPENSES: DOCUMENTARY TAXES			47
PAYMENT	47		
SUCCESSORS AND ASSIGNS		47	
BROKERS	48		
MASSACHUSETTS LAW; SUBMISSION TO JURISDICTION; WAIVER OF JURY TRIAL; APPOINTMENT OF AGENT			48
ENTIRE AGREEMENT		48	
SURVIVAL; SEVERABILITY.		48	
TITLE AND SUBTITLES		49	
REPORTING ENTITY FOR THE COMMON STOCK.			49
PUBLICITY.	49		
</TABLE>			

<S>	<C>
Schedule 4.3	Capitalization
Schedule 4.7	Financial Information
Schedule 4.8	Litigation
Schedule 4.12	Investments, Joint Ventures
Schedule 4.15	Other Offerings
Schedule 4.22	Title to Property
Schedule 7.8	Use of Proceeds
Schedule 8.1	Debt and Other Liability
Schedule 8.2	Transactions with Affiliates
Schedule 8.4	Asset Sales

</TABLE>

iii

LIST OF EXHIBITS

<TABLE>

<S>	<C>
Exhibit A	Form of Convertible Debentures
Exhibit B	Form of Registration Rights Agreement
Exhibit C	Form of Common Stock Purchase Warrant
Exhibit D	Form of Officer's Certificate

</TABLE>

iv

SECURITIES PURCHASE AGREEMENT

AGREEMENT, dated as of August 25, 2000, between Boston Biomedica, Inc. (the "Company") a Massachusetts Corporation, Richard P. Kiphart, an individual residing in the state of Illinois ("Kiphart") and Shoreline Micro-Cap Fund, L.P., an Illinois limited partnership ("Shoreline"). Collectively, Shoreline and Kiphart are referred to herein as the "Purchaser."

R E C I T A L S:

WHEREAS, the Company desires to sell , and Kiphart and Shoreline desires to purchase from the Company the following: (i) \$780,000.00, aggregate principal amount of the Company's 3% Senior Subordinated Convertible Debentures due August 25, 2003 to Kiphart and (ii) \$220,000.00 aggregate principal amount of the Company's 3% Senior Subordinated Convertible Debentures due August 25, 2003 to Shoreline (collectively, the "Convertible Debentures"), with terms and conditions as set forth in the form of Senior Subordinated Convertible Debenture attached hereto as EXHIBIT A;

WHEREAS, the Convertible Debentures will be convertible into shares of the Company's common stock, \$0.01 par value per share (the "Common Stock");

WHEREAS, in order to induce the Purchaser to enter into the transactions described in this Agreement, the Company desires to issue to the Purchaser in the amounts specified in the Recitals, warrants to purchase 35,556 shares of Common Stock upon the Closing (as defined herein) on the terms and conditions described in the form of the common stock purchase warrant attached hereto as EXHIBIT C (the "Warrants"); and

WHEREAS, Purchaser will have certain registration rights with respect to such shares of Common Stock issuable as interest under, and upon conversion of, the Convertible Debentures (the "Debenture Shares") and upon exercise of the Warrants (the "Warrant Shares," the Debenture Shares and the Warrant Shares being collectively referred to herein as the "Conversion Shares") as set forth in the Registration Rights Agreement in the form attached hereto as Exhibit B;

NOW, THEREFORE, in consideration of the foregoing premises and the

covenants contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

ARTICLE 1. DEFINITIONS

ARTICLE 1.1 DEFINITIONS . The following terms, as used herein, have the following meanings:

"Additional Shares of Common Stock" has the meaning set forth in Section 11.6.

"Affiliate" means, with respect to any Person (the " Subject Person"), (i) any other Person (a " Controlling Person") that directly, or indirectly through one or more intermediaries, Controls the Subject Person or (ii) any other Person (other than the Subject Person or a Consolidated Subsidiary of the Subject Person) which is Controlled by or is under common Control with a Controlling Person.

"Agreement" means this Securities Purchase Agreement, as amended, supplemented or otherwise modified from time to time in accordance with its terms.

"Asset Sale" has the meaning set forth in Section 8.4.

"Balance Sheet Date" has the meaning set forth in Section 4.7.

"Benefit Arrangement" means at any time an employee benefit plan within the meaning of Section 3(3) of ERISA which is not a Plan or a Multiemployer Plan and which is maintained or otherwise contributed to by the Company.

"Benefit Plans" has the meaning set forth in Section 4.9(b).

"Business Day" means any day except a Saturday, Sunday or other day on which commercial banks in the City of New York are authorized or required by law to close.

"Capital Reorganization" has the meaning set forth in Section 11.5.

"Change in Control" means (i) after the date of this Agreement, any person or group of persons (within the meaning of Sections 13 and 14 of the Exchange Act and the rules and regulations of the Commission relating to such sections) other than Purchaser shall have acquired beneficial ownership (within the meaning of Rules 13d-3 and 13d-5 promulgated by the Commission pursuant to the Exchange Act) of 33 1/3% or more of the outstanding shares of Common Stock of the Company; (ii) individuals constituting the Board of Directors of the Company on the date hereof (together with any new Directors whose election by such Board of Directors or whose nomination for election by the shareholders of the Company was approved by a vote of at least 50.1% of the Directors still in office who are either Directors as of the date hereof or whose election or nomination for election was previously so approved), cease for any reason to constitute at least two-thirds of the Board of Directors of the Company then in office.

"Closing Bid Price" shall mean for any security as of any date, the lowest closing bid price as reported by Bloomberg, L.P. (" Bloomberg") on the principal securities exchange or

trading market where such security is listed or traded or, if the foregoing does not apply, the lowest closing bid price of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg, or, if no lowest trading price is reported for such security by Bloomberg, then the average of the bid prices of any market makers for such securities as reported in the "Pink Sheets" by the National Quotation Bureau, Inc. If the lowest closing bid price cannot be calculated for such security on such date on any of the foregoing bases, the lowest closing bid price of such security on such date shall be the fair market value as mutually determined by

Purchaser and the Company for which the calculation of the closing bid price requires, and in the absence of such mutual determination, as determined by the Board of Directors of the Company in good faith.

"Closing Date" means the date hereof.

"Code" means the Internal Revenue Code of 1986, as amended.

"Commission" means the Securities and Exchange Commission or any entity succeeding to all of its material functions.

"Common Stock" means the common stock, \$0.01 par value per share, of the Company.

"Company" means Boston Biomedica, Inc., a Massachusetts corporation, and its successors.

"Company Corporate Documents" means the articles of organization and bylaws of the Company.

"Consolidated Net Worth" means at any date the total shareholders' equity which would appear on a consolidated balance sheet of the Company prepared as of such date.

"Consolidated Subsidiary" means at any date with respect to any Person or Subsidiary, any Person the accounts of which would be consolidated with those of such Person or Subsidiary in its consolidated financial statements if such statements were prepared as of such date.

"Control" (including, with correlative meanings, the terms "Controlling," "Controlled by" and under "common Control with"), as used with respect to any Person, means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of that Person, whether through the ownership of voting securities, by contract or otherwise.

"Conversion Date" shall mean the date of delivery of a Notice of Conversion for all or a portion of a Convertible Debenture by the holder thereof to the Company as specified in each Convertible Debenture.

3

"Conversion Price" has the meaning set forth in the Convertible Debentures.

"Conversion Shares" has the meaning set forth in the Recitals.

"Convertible Debentures" means the Company's Senior Subordinated Convertible Debentures substantially in the form set forth as EXHIBIT A hereto.

"Deadline" has the meaning set forth in Section 10.1.

"Debt" of any Person means at any date, without duplication, (i) all obligations of such Person for borrowed money, (ii) all obligations of such Person evidenced by bonds, debentures, notes, or other similar instruments issued by such Person, (iii) all obligations of such Person as lessee which (y) are capitalized in accordance with GAAP or (z) arise pursuant to sale-leaseback transactions, (iv) all reimbursement obligations of such Person in respect of letters of credit or other similar instruments, (v) all Debt of others secured by a Lien on any asset of such Person, whether or not such Debt is otherwise an obligation of such Person and (vi) all Debt of others Guaranteed by such Person.

"Default" means any event or condition which constitutes an Event of Default or which with the giving of notice or lapse of time or both would, unless cured or waived, become an Event of Default.

"Derivative Securities" has the meaning set forth in Section 8.6.

"Discounted Equity Offerings" has the meaning set forth in Section 8.6.

"Directors" means the individuals then serving on the Board of

Directors or similar such management council of the Company.

"Environmental Laws" means any and all federal, state, local and foreign statutes, laws, regulations, ordinances, rules, judgments, orders, decrees, permits, concessions, grants, franchises, licenses, agreements or other governmental restrictions relating to the environment or to emissions, discharges or releases of pollutants, contaminants, petroleum or petroleum products, chemicals or industrial, toxic or hazardous substances or wastes into the environment, including, without limitation, ambient air, surface water, ground water, or land, or otherwise relating to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of pollutants, contaminants, petroleum or petroleum products, chemicals or industrial, toxic or hazardous substances or wastes or the cleanup or other remediation thereof.

"ERISA" means the Employee Retirement Income Security Act of 1974, as amended, or any successor statute.

4

"ERISA Group" means the Company and each Subsidiary and all members of a Controlled group of corporation and all trades or businesses (whether or not incorporated) under common Control which, together with the Company or any Subsidiary, are treated as a single employer under the Code.

"Event of Default" has the meaning set forth in Article 12 hereof.

"Exchange Act" means the Securities Exchange Act of 1934, as amended.

"Fixed Price" has the meaning set forth in Section 11.1.

"Formula Price" has the meaning set forth in Section 3.4.

"GAAP" has the meaning set forth in Section 1.2.

"Guarantee" by any Person means any obligation, contingent or otherwise, of such Person directly or indirectly guaranteeing (whether by virtue of partnership arrangements, by agreement to purchase assets, goods, securities or services, to take-or-pay, or to maintain a minimum net worth, financial ratio or similar requirements, or otherwise) any Debt of any other Person and, without limiting the generality of the foregoing, any obligation, direct or indirect, contingent or otherwise, of such Person (i) to purchase or pay (or advance or supply funds for the purchase or payment of) such Debt or (ii) entered into for the purpose of assuring in any other manner the holder of such Debt of the payment thereof or to protect such holder against loss in respect thereof (in whole or in part); PROVIDED that the term Guarantee shall not include endorsements for collection or deposit in the ordinary course of business. The term Guarantee used as a verb has a corresponding meaning.

"Hazardous Materials" means any hazardous materials, hazardous wastes, hazardous constituents, hazardous or toxic substances or petroleum products (including crude oil or any derivative or fraction thereof), defined or regulated as such in or under any Environmental Laws.

"Intellectual Property" has the meaning set forth in Section 4.20.

"Investment" means any investment in any Person, whether by means of share purchase, partnership interest, capital contribution, loan, time deposit or otherwise.

"Lien" means any lien, mechanic's lien, materialmen's lien, lease, easement, charge, encumbrance, mortgage, conditional sale agreement, title retention agreement, agreement to sell or convey, option, claim, title imperfection, encroachment or other survey defect, pledge, restriction, security interest or other adverse claim, whether arising by contract or under law or otherwise (including, without limitation, any financing lease having substantially the same

5

economic effect as any of the foregoing, and the filing of any financing statement under the Uniform Commercial Code or comparable law of any jurisdiction in respect of any of the foregoing).

"Listing Applications" has the meaning set forth in Section 4.4.

"Majority Holders" means (Purchaser and its assignee or transferee thereof who hold more than 50% in aggregate principal amount of the Convertible Debentures.

"Market Price" shall mean the Closing Bid Price of the Common Stock preceding the date of determination.

"Material Adverse Effect" has the meaning set forth in Section 4.1.

"Maturity Date" shall mean the date of maturity of the Convertible Debentures.

"Maximum Number of Shares" shall mean that number of shares of Common Stock equal to the percentage that the Company may issue without shareholder approval under the applicable rules of the National Market or the applicable OTC Bulletin Board or equivalent entity, of the then issued and outstanding shares of Common Stock of the Company as of the applicable date of determination, or such greater number of shares as the shareholders of the Company may have previously approved.

"NASD" has the meaning set forth in Section 7.10.

"Nasdaq Market" means the Nasdaq Stock Market's National Market System.

"National Market" means the Nasdaq Market, the Nasdaq Small Cap Market, the New York Stock Exchange, Inc. or the American Stock Exchange, Inc.

"Notice of Conversion" means the form to be delivered by a holder of a Convertible Debenture upon conversion of all or a portion thereof to the Company substantially in the form of EXHIBIT A to the form of Convertible Debenture.

"Notice of Exercise" means the form to be delivered by a holder of a Warrant upon exercise of all or a portion thereof to the Company substantially in the form of EXHIBIT A to the Warrant.

"Officer's Certificate" shall mean a certificate executed by the president, chief executive officer or chief financial officer of the Company in the form of EXHIBIT D attached hereto.

6

"OTC Bulletin Board" means the over-the-counter bulletin board operated by the NASD.

"Other Taxes" has the meaning set forth in Section 3.6(b).

"PBGC" means the Pension Benefit Guaranty Corporation or any entity succeeding to any or all of its functions under ERISA.

"Permits" means all domestic and foreign licenses, franchises, grants, authorizations, permits, easements, variances, exemptions, consents, certificates, orders and approvals necessary to own, lease and operate the properties of, and to carry on the business of the Company and the Subsidiaries.

"Permitted Financings" has the meaning set forth in Section 8.6.

"Person" means an individual, corporation, partnership, trust, incorporated or unincorporated association, joint venture, joint stock company, government (or any agency or political subdivision thereof) or other entity of any kind.

"Plan" means an employee pension benefit plan which is covered by Title IV of ERISA or subject to the minimum funding standards under the Code and either (i) is maintained, or contributed to, by any member of the ERISA Group

for employees of any member of the ERISA Group or (ii) has at any time within the preceding five years been maintained, or contributed to, by any Person which was at such time a member of the ERISA Group for employees of the Person which was at such time a member of the ERISA Group.

"Purchase Price" means the purchase price for the Securities set forth in Section 2.2 hereof.

"Purchaser" means the entity listed on the signature page hereto and its successors and assigns, including holders from time to time of the Convertible Debentures.

"Qualified Assignee" has the meaning set forth in Section 3.6(a).

"Recourse Financing" means Debt of the Company or any Subsidiary which, by its terms, does not bar the lender thereof from action against the Company or any Subsidiary, as borrower or guarantor, if the security value of the project or asset pledged in respect thereof falls below the amount required to repay such Debt.

"Redemption Event" has the meaning set forth in Section 3.4.

"Registrable Securities" has the meaning set forth in Section 10.4(a).

7

"Registration Default" has the meaning set forth in Section 10.4(e).

"Registration Maintenance Period" has the meaning set forth in Section 10.4(c).

"Registration Statement" has the meaning set forth in Section 10.4(b).

"Registration Rights Agreement" means the agreement between the Company and Purchaser dated the date hereof substantially in the form set forth in EXHIBIT B attached hereto.

"Required Effectiveness Date" has the meaning set forth in Section 10.4(b).

"Reserved Amount" has the meaning set forth in Section 7.10(a).

"Restricted Payment" means, with respect to any Person, (i) any dividend or other distribution on any shares of capital stock of such Person (except dividends payable solely in shares of capital stock of the same or junior class of such Person and dividends from a wholly-owned direct or indirect Subsidiary of the Company to its parent corporation), (ii) any payment on account of the purchase, redemption, retirement or acquisition of (a) any shares of such Person's capital stock or (b) any option, warrant or other right to acquire shares of such Person's capital stock or (iii) any loan, or advance or capital contribution to any Person (a "Shareholder") owning any capital stock of such Person other than relocation, travel or like advances to officers and employees in the ordinary course of business, and other than reasonable compensation as determined by the Board of Directors.

"Rights Offering" has the meaning set forth in Section 11.3.

"Sale Event" has the meaning set forth in Section 3.4.

"SEC Reports" has the meaning set forth in Section 7.1(a).

"Securities" means the Convertible Debentures, the Warrants and, the Conversion Shares.

"Securities Act" means the Securities Act of 1933, as amended.

"Share Reorganization" has the meaning set forth in Section 11.2.

"Special Distribution" has the meaning set forth in Section 11.4.

"Subsidiary" means, with respect to any Person, any corporation or

other entity of which (x) a majority of the capital stock or other ownership interests having ordinary voting power to elect a majority of the Board of Directors or other persons performing similar functions are at the

8

time directly or indirectly owned by such Person or (y) the results of operations, the assets and the liabilities of which are consolidated with such Person under GAAP.

"Subsidiary Corporate Documents" means the certificates of incorporation and bylaws of each Subsidiary.

"Taxes" has the meaning set forth in Section 3.6.

"Trading Day" shall mean any Business Day in which the OTC Bulletin Board, National Market or other automated quotation system or exchange on which the Common Stock is then traded is open for trading for at least four (4) hours.

"Transaction Agreements" means this Agreement, the Convertible Debentures, the Warrants, and the Registration Rights Agreement.

"Transfer" means any disposition of Securities whether or not such disposition would constitute a sale thereof under the Securities Act.

"Unfunded Liabilities" means, with respect to any Plan at any time, the amount (if any) by which (i) the present value of all benefits under the Plan exceeds (ii) the fair market value of all Plan assets allocable to such benefits (excluding any accrued but unpaid contributions), all determined as of the then most recent valuation date for such Plan, but only to the extent that such excess represents a potential liability of a member of the ERISA Group to the PBGC or any other Person under Title IV of ERISA.

"Warrants" means the Common Stock Purchase Warrant substantially in the form set forth in EXHIBIT C hereto.

ARTICLE 1.2 ACCOUNTING TERMS AND DETERMINATIONS . Unless otherwise specified herein, all accounting terms used herein shall be interpreted, all accounting determinations hereunder shall be made, and all financial statements required to be delivered hereunder shall be prepared, in accordance with generally accepted accounting principles as in effect from time to time, applied on a consistent basis with the Company's prior practice (except for interim financial statements and for changes concurred in by the Company's independent public accountants) ("GAAP"). All references to "dollars," "Dollars" or "\$" are to United States dollars unless otherwise indicated.

9

ARTICLE 2. PURCHASE AND SALE OF SECURITIES

ARTICLE 2.1 PURCHASE AND SALE OF CONVERTIBLE DEBENTURES .

(a) Subject to the terms and conditions set forth herein and as set forth in the Recitals herein, the Company agrees to issue and sell to Purchaser, and Purchaser agrees to purchase from the Company, Convertible Debentures in the aggregate principal amount of One Million Dollars (\$1,000,000.00).

(b) In connection with the Purchaser's agreement to purchase the Convertible Debentures specified in this Article 2, the Company shall issue and deliver to: (i) Kiphart on the Closing Date a Warrant to purchase an aggregate of up to 27,734 shares of Common Stock and (ii) Shoreline on the Closing Date a Warrant to purchase an aggregate of up to 7,822 shares of Common Stock

ARTICLE 2.2 PURCHASE PRICE . The purchase price for the Convertible Debentures on the Closing Date (as defined herein) shall be 95% of the principal amount thereof. No part of the purchase price of the Convertible Debentures shall be allocated to the Warrant. Therefore, the consideration payable by Shoreline to the Company for the Convertible Debentures and Warrants on the Closing Date

shall be \$209,000.00, and the consideration payable by Kiphart shall be \$741,000.00. Collectively, the Purchasers shall pay an aggregate consideration of \$950,000.00 (the "Purchase Price").

ARTICLE 2.3 CLOSING AND MECHANICS OF PAYMENT .

(a) The Purchase Price shall be paid on the Closing Date by wire transfer of immediately available funds.

(b) The Convertible Debentures and Warrants issued on the Closing Date shall be dated the date hereof and interest shall accrue on the Convertible Debentures as of the Closing Date.

ARTICLE 3. PAYMENT TERMS OF CONVERTIBLE DEBENTURES

ARTICLE 3.1 PAYMENT OF PRINCIPAL AND INTEREST; PAYMENT MECHANICS . The Company will pay all amounts due on each Convertible Debenture by wire transfer and at the address specified for such purpose by Purchaser in writing, without the presentation or surrender of any Convertible Debenture or the making of any notation thereon, except that upon written request of the Company made concurrently with or reasonably promptly after payment or prepayment in full of this Convertible Debenture, the holder shall surrender the Convertible Debenture for cancellation, reasonably promptly after any such request, to the Company at its principal executive office. Prior to any sale or other disposition of any Convertible Debenture, the holder

10

thereof will either submit the Convertible Debenture to the Company for endorsement thereon of the amount of principal paid thereon and the last date to which interest has been paid thereon or surrender the Convertible Debenture to the Company in exchange for a new Convertible Debenture or Convertible Debentures. The Company will afford the benefits of this Section 3.1 to any direct or indirect transferee of the Convertible Debenture purchased in accordance with the terms of this Agreement.

ARTICLE 3.2 RANKING; PAYMENT OF INTEREST . The Convertible Debentures shall be senior to all indebtedness of the Company except (a) the Company's outstanding credit facility with Fleet Bank and any successor thereof, including increases of such credit facility; (b) the Company's mortgage loan with Commerce Bank; and (c) any future sale and lease back transaction in connection with the Company's headquarters building in West Bridgewater, MA, to which it shall be junior in ranking. The Convertible Debenture shall rank on a pari passu basis with the Company's 3% \$2,250,000.00 convertible debenture issued to GCA Strategic Investment Fund Limited. Interest shall accrue on the outstanding principal amount of each Convertible Debenture and shall be payable as specified therein.

ARTICLE 3.3 VOLUNTARY PREPAYMENT . For so long as no Event of Default shall have occurred and is continuing, the Company may, at its option, repay, in whole or in part, the Convertible Debentures, per the redemption price set forth in Section 5.1 of the Convertible Debentures, following at least five (5) Business Days prior written notice to Purchaser (the date of expiration of such five (5) Business Day period being referred to as the "prepayment date"); PROVIDED, HOWEVER, that if such date is not a Business Day, the prepayment date shall be the next Business Day thereafter; and further provided that such repayment is not otherwise prohibited by Section 5.1 of the Convertible Debenture.

ARTICLE 3.4 MANDATORY PREPAYMENTS .

(a) Upon (i) the occurrence of a Change in Control of the Company, (ii) a transfer of all or substantially all of the assets of the Company to any Person in a single transaction or series of related transactions, (iii) a consolidation or merger of the Company with or into another Person in which the Company is not the surviving entity (other than a merger which is effected solely to change the jurisdiction of incorporation of the Company and results in a reclassification, conversion or exchange of outstanding shares of Common Stock solely into shares of Common Stock) (each of items (i), (ii) and (iii) being referred to as a "Sale Event"), or (iv) the occurrence of a Registration Default which continues uncured for a period of twenty (20) days, then, in each case, the Company shall, upon request of the Majority Holders, redeem the Convertible Debentures and Warrants. The redemption price payable upon any such

redemption shall be the redemption price in SECTION 5 of the Convertible Debentures and SECTION 13 of the Warrants, respectively (referred to herein as the "Formula Price").

11

(b) Upon the issuance of the Maximum Number of Shares, the receipt by the Company of Notice of Conversion requiring the issuance of shares of Common Stock in excess of the Maximum Number of Shares, and the failure within 40 days of such issuance to obtain shareholder approval to issue additional shares of Common Stock required to be issued in connection with such Notices of Conversion (the "Redemption Event"), the Company shall redeem the outstanding balance of each Convertible Debenture and Warrant for the Formula Price.

(c) In the event that there is an insufficient number of authorized, issuable, shares of Common Stock registered under the Registration Statement filed by the Company to allow Purchaser to fully convert the Convertible Debentures and exercise all Warrants held by Purchaser and sell such shares issued thereon, then the Company shall immediately file an amendment to the then current Registration Statement to register a sufficient number of such shares to convert said Convertible Debentures and Warrants. Upon the failure within twenty (20) Trading Days measured from the date of filing the Registration Statement to register a sufficient number of such shares, the Company shall redeem the outstanding balance of each Convertible Debenture and Warrant for the Formula Price. In addition, failure of the Company to register a sufficient number of such shares to fully convert said Convertible Debentures and exercise such Warrants shall be a Registration Default under SECTION 10.4(E) from the date of the Notice of Conversion to the date of the earlier of (i) the redemption of the outstanding balance of the Convertible Debentures and exercise of all such Warrants or (ii) full conversion of the Convertible Debentures and exercise of all such Warrants.

ARTICLE 3.5 PREPAYMENT PROCEDURES .

(a) Any permitted prepayment or redemption of the Convertible Debentures and Warrants, as applicable pursuant to Sections 3.3 or 3.4 above shall be deemed to be effective and consummated (for purposes of determining the Formula Price and the time at which Purchaser shall thereafter not be entitled to deliver a Notice of Conversion for the Convertible Debentures) as follows:

(i) A prepayment pursuant to Section 3.3, the "prepayment date" specified therein;

(ii) A redemption pursuant to Section 3.4(a), the later to occur of (x) one (1) Business Day following the Company's receipt of notice to redeem from the Majority Holders or (y) the date of occurrence or consummation, as the case may be, of the applicable Sale Event or in the case of a Registration Default the date on which such 20-day period expires; and

12

(iii) A redemption pursuant to Section 3.4(c), the date on which such 40-day period expires.

(b) On or before the Maturity Date and on the effective date of a repayment or redemption of the Convertible Debentures and Warrants as specified in Section 3.5(a) above, the Company shall deliver by wire transfer of funds the repayment/redemption price to Purchaser of the Convertible Debentures and Warrants subject to repayment/redemption. Should Purchaser not receive payment of any amounts due on redemption of its Convertible Debentures and Warrants by reason of the Company's failure to make payment at the times prescribed above for any reason, the Company shall pay to the applicable holder on demand (x) interest on the sums not paid when due at an annual rate equal to the lesser of (i) 18% or (ii) the maximum lawful rate, compounded at the end of each thirty (30) days, until the applicable holder is paid in full and (y) all costs of collection, including, but not limited to, reasonable attorneys' fees and costs, whether or not suit or other formal proceedings are instituted.

(c) The Company shall select the Convertible Debentures and Warrants to be redeemed in any redemption in which not all of the Convertible Debentures and Warrants are to be redeemed so that the ratio of the Convertible Debentures and Warrants of each holder selected for redemption to the total Convertible Debentures and Warrants owned by that holder shall be the same as the ratio of all such Convertible Debentures and Warrants selected for redemption bears to the total of all then outstanding Convertible Debentures and Warrants. Should any Convertible Debentures and Warrants required to be redeemed under the terms hereof not be redeemed solely by reason of limitations imposed by law, the applicable Convertible Debentures and Warrants shall be redeemed on the earliest possible dates thereafter to the maximum extent permitted by law.

(d) Any Notice of Conversion delivered by Purchaser (including delivery via teletype) to the Company prior to the (x) Maturity Date or (y) effective date of a voluntary prepayment pursuant to Section 3.3 or a mandatory prepayment pursuant to Section 3.4 as specified in Section 3.5(a) above), shall be honored by the Company and the conversion of the Convertible Debentures shall be deemed effected on the Conversion Date, subject to the Company's rights pursuant to Sections 5.1 and 5.2 of the Convertible Debentures. In addition, between the effective date of a voluntary prepayment pursuant to Section 3.3 or a mandatory prepayment pursuant to Section 3.4 as specified in Section 3.5(a) above and the date the Company is required to deliver the redemption proceeds in full to Purchaser, Purchaser may deliver a Notice of Conversion to the Company. Such Notice of Conversion will be (x) of no force or effect if the Company timely pays the redemption proceeds to Purchaser when due or (y) honored on or as of the date of the Notice of Conversion if the Company fails to timely pay the redemption proceeds to Purchaser when due.

ARTICLE 3.6 PAYMENT OF ADDITIONAL AMOUNTS .

(a) Any and all payments by the Company hereunder or under the Convertible Debentures to Purchaser and each "qualified assignee" thereof shall be made free and clear of and without deduction or withholding for any and all present or future taxes, levies, imposts, deductions, charges or withholdings, and all liabilities with respect thereto (all such taxes, levies, imposts, deductions, charges, withholdings and liabilities being hereinafter referred to as " Taxes") unless such Taxes are required by law or the administration thereof to be deducted or withheld. If the Company shall be required by law or the administration thereof to deduct or withhold any Taxes from or in respect of any sum payable under the Convertible Debentures (i) the holders of the Convertible Debentures subject to such Taxes shall have the right, but not the obligation, for a period of thirty (30) days commencing upon the day it shall have received written notice from the Company that it is required to withhold Taxes, subject to the other provisions of this Agreement and the Convertible Debentures relating to assignment or transfer of the Convertible Debentures, to transfer all or any portion of the Convertible Debentures to a qualified assignee to the extent such transfer can be effected in accordance with the other provisions of this Agreement and applicable law; (ii) the Company shall make such deductions or withholdings; and (iii) the Company shall forthwith pay the full amount deducted or withheld to the relevant taxation or other authority in accordance with applicable. A "qualified assignee" of a Purchaser is a Person that is organized under the laws of (i) the United States or (ii) any jurisdiction other than the United States or any political subdivision thereof and that (y) represents and warrants to the Company that payments of the Company to such assignee under the laws in existence on the date of this Agreement would not be subject to any Taxes and (z) from time to time, as and when requested by the Company, executes and delivers to the Company and the Internal Revenue Service forms, and provides the Company with any information necessary for the Company to establish such assignee's exemption or continued exemption from Taxes under applicable law.

(b) The Company shall forthwith pay any present or future stamp or documentary taxes or any other similar charges or similar levies which arise from any payment made under any of the Transaction Agreements or from the execution, delivery or registration of, or otherwise with respect to, this Agreement other than Taxes relating to income and Taxes payable solely as a result of the transfer from Purchaser to a Person of any Security (all such taxes, charges and levies hereinafter referred to as " Other Taxes").

(c) The Company shall indemnify Purchaser, or qualified assignee, for the full amount of Taxes or Other Taxes (including, without limitation, any Taxes or Other Taxes imposed by any jurisdiction on amounts payable under this Section 3.6) required to be

14

paid by the Company under this Section 3.6, but not so paid by the Company and actually paid by Purchaser, or qualified assignee. Payment under this indemnification shall be made within 30 days from the date Purchaser or qualified assignee makes written demand therefor.

(d) Within 30 days after the date of any payment of Taxes, required by the Company to be paid under this Section 3.6, the Company will furnish to Purchaser the original or a certified copy of a receipt evidencing payment thereof.

(e) Purchaser and each qualified assignee shall provide to the Company a form W-8, stating that it is a non-U.S. person, together with any additional tax forms which may be required under the Code, as amended after the date hereof, to allow interest payments to be made to it without deduction.

ARTICLE 4. REPRESENTATIONS AND WARRANTIES

The Company represents and warrants to Purchaser, as of the Closing Date, the following:

ARTICLE 4.1 ORGANIZATION AND QUALIFICATION . The Company and each Subsidiary is a corporation (or other legal entity) duly organized, validly existing and in good standing under the laws of its jurisdiction of incorporation, with full power and authority to own, lease, use and operate its properties and to carry on its business as and where now owned, leased, used, operated and conducted. The Company is qualified to conduct business as a foreign corporation and is in good standing in every jurisdiction in which the nature of the business conducted by it makes such qualification necessary, except where such failure would not have a Material Adverse Effect. A " Material Adverse Effect" means any material adverse effect on the operations, results of operations, properties, assets or condition (financial or otherwise) of the Company and its Subsidiaries, taken as a whole, or on the transactions contemplated hereby or by the agreements or instruments to be entered into in connection herewith.

ARTICLE 4.2 AUTHORIZATION AND EXECUTION .

(a) The Company has all requisite corporate power and authority to enter into and perform each Transaction Agreement and to consummate the transactions contemplated hereby and thereby and to issue the Securities in accordance with the terms hereof and thereof.

(b) The execution, delivery and performance by the Company of each Transaction Agreement and the issuance by the Company of the Securities have been duly and validly authorized by the Board of Directors of the Company and no further

15

consent or authorization of the Company, its Board of Directors or its shareholders is required.

(c) This Agreement has been duly executed and delivered by the Company.

(d) This Agreement constitutes, and upon execution and delivery thereof by the Company, each of the Transaction Agreements will constitute, a valid and binding agreement of the Company, in each case enforceable against the Company in accordance with its respective terms subject to (i) applicable bankruptcy, insolvency or similar laws affecting the enforceability of creditors rights generally, and (ii) equitable principals of general applicability.

ARTICLE 4.3 CAPITALIZATION . As of August 25, 2000, the authorized, issued and

outstanding capital stock of the Company is as set forth on SCHEDULE 4.3 hereto and except as set forth on SCHEDULE 4.3 and excluding any stock options offered under any Company Benefit Plan (as herein defined) no other shares of capital stock of the Company will be outstanding other than stock options offered under any Company Benefit Plan as of the Closing Date. Except as set forth on Schedule 4.3, all of such outstanding shares of capital stock are, or upon issuance will be, duly authorized, validly issued, fully paid and nonassessable. No shares of capital stock of the Company are subject to preemptive rights or similar rights of the shareholders of the Company or any liens or encumbrances imposed through the actions or failure to act of the Company. Other than as set forth on SCHEDULE 4.3 hereto, as of the date hereof, (i) there are no outstanding options, warrants, scrip, rights to subscribe for, puts, calls, rights of first refusal, agreements, understandings, claims or other commitments or rights of any character whatsoever relating to, or securities or rights convertible into or exchangeable for any shares of capital stock of the Company or any of its Subsidiaries, or arrangements by which the Company or any of its Subsidiaries is or may become bound to issue additional shares of capital stock of the Company or any of its Subsidiaries, and (ii) there are no agreements or arrangements under which the Company or any of its Subsidiaries are obligated to register the sale of any of its or their securities under the Securities Act (except pursuant to the Registration Rights Agreement) and (iii) there are no anti-dilution or price adjustment provisions contained in any security issued by the Company (or in any agreement providing rights to security holders) that will be triggered by the issuance of the Convertible Debentures or Conversion Shares. The Company has furnished to Purchaser true and correct copies of the Company's Corporate Documents, and the terms of all securities convertible into or exercisable for Common Stock.

ARTICLE 4.4 GOVERNMENTAL AUTHORIZATION . The execution and delivery by the Company of the Transaction Agreements does not and will not, the issuance and sale by the Company of the Securities does not and will not, and the consummation of the transactions contemplated hereby and by the other Transaction Agreements will not, require any action by or in respect of, or filing with, any governmental body, agency or governmental official except (a) such actions or filings that have been undertaken or made prior to the date hereof and that will be in full force and effect

16

(or as to which all applicable waiting periods have expired) on and as of the date hereof or which are not required to be filed on or prior to the Closing Date, (b) such actions or filings that, if not obtained, would not result in a Material Adverse Effect, (c) listing applications (" Listing Applications") to be filed with the OTC Bulletin Board or the National Market relating to the Conversion Shares, if applicable, and (d) the filing of a "Form D" as described in Section 7.13 below and the filing of any requisite documents under state securities ("blue sky") laws.

ARTICLE 4.5 ISSUANCE OF SHARES . Upon conversion in accordance with the terms of the Convertible Debentures and exercise of the Warrants, the Conversion Shares shall be duly and validly issued and outstanding, fully paid and nonassessable, free and clear of any Liens and charges and shall not be subject to preemptive rights or similar rights of any other shareholders of the Company. Assuming the representations and warranties of Purchaser herein are true and correct in all material respects, each of the Securities will have been issued in material compliance with all applicable U.S. federal and state securities laws. The Company understands and acknowledges that the issuance of Conversion Shares will dilute the ownership interests of other shareholders of the Company. The Company further acknowledges that its obligation to issue Conversion Shares upon conversion of the Convertible Debentures and exercise of the Warrants is absolute and unconditional regardless of the dilutive effect that such issuance may have on the ownership interests of other shareholders of the Company.

ARTICLE 4.6 NO CONFLICTS . The execution and delivery by the Company of the Transaction Agreements to which it is a party did not and will not, the issuance and sale by the Company of the Securities did not and will not and the consummation of the transactions contemplated hereby and by the other Transaction Agreements will not, contravene or constitute a default under or violation of (i) any provision of applicable law or regulation known by the Company to be applicable to it, (ii) the Company Corporate Documents, (iii) any material agreement, judgment, injunction, order, decree or other instrument

binding upon the Company or any Subsidiary or any of their respective assets, or result in the creation or imposition of any material Lien on any asset of the Company or any Subsidiary. To its knowledge, the Company and each Subsidiary is in compliance with and conforms to all statutes, laws, ordinances, rules, regulations, orders, restrictions and all other legal requirements of any domestic or foreign government or any instrumentality thereof having jurisdiction over the conduct of its businesses or the ownership of its properties, except where such failure would not have a Material Adverse Effect.

ARTICLE 4.7 FINANCIAL INFORMATION . Since June 30, 2000 (the " Balance Sheet Date"), except as disclosed in SCHEDULE 4.7, there has been (x) no material adverse change in the assets or liabilities, or in the business or condition, financial or otherwise, or in the results of operations or prospects, of

17

the Company and its Subsidiaries taken as a whole, whether as a result of any legislative or regulatory change, revocation of any license or rights to do business, fire, explosion, accident, casualty, labor trouble, flood, drought, riot, storm, condemnation, act of God, public force or otherwise and (y) no material adverse change in the assets or liabilities, or in the business or condition, financial or otherwise, or in the results of operations or prospects, of the Company and its Subsidiaries except in the ordinary course of business; and to the knowledge of the Company no fact or condition exists which might cause such a change in the future. The audited and unaudited consolidated balance sheets of the Company and its Subsidiaries for the periods ending December 31, 1999, and June 30, 2000, respectively, and the related consolidated statements of income, changes in shareholders' equity and changes in cash flows for the periods then ended, including the footnotes thereto, except as indicated therein, (i) complied in all material respects with applicable accounting requirements and (ii) have been prepared in accordance with GAAP consistently applied throughout the periods indicated, except that the unaudited financial statements do not contain notes and may be subject to normal audit adjustments and normal annual adjustments. Such financial statements fairly present the financial condition of the Company and its Subsidiaries at the dates indicated and the consolidated results of their operations and cash flows for the periods then ended and, except as indicated therein, reflect all claims against and all Debts and liabilities of the Company and its Subsidiaries, fixed or contingency required to be reflected therein in accordance with GAAP.

ARTICLE 4.8 LITIGATION . Except as set forth on SCHEDULE 4.8, there is no action, suit or proceeding pending or, to the knowledge of the Company, threatened against the Company or any Subsidiary, before any court or arbitrator or any governmental body, agency or official in which there is a reasonable possibility of an adverse decision which could be reasonably expected to have a Material Adverse Effect or which challenges the validity of any Transaction Agreements.

ARTICLE 4.9 COMPLIANCE WITH ERISA AND OTHER BENEFIT PLANS .

(a) Each member of the ERISA Group has fulfilled its obligations under the minimum funding standards of ERISA and the Code with respect to each Plan and is in compliance in all material respects with the presently applicable provisions of ERISA and the Code with respect to each Plan. No member of the ERISA Group has (i) sought a waiver of the minimum funding standard under Section 412 of the Code in respect of any Plan, (ii) failed to make any required contribution or payment to any Plan or Multiemployer Plan or in respect of any Benefit Arrangement, or made any amendment to any Plan or Benefit Arrangement, which as resulted or could result in the imposition of a Lien or the posting of a bond or other security under ERISA or the Code or (iii) incurred any liability under Title IV of ERISA other than a liability to the PBGC for premiums under Section 4007 of ERISA.

(b) The benefit plans not covered under clause (a) above (including profit sharing, deferred compensation, stock option, employee stock purchase, bonus, retirement, health or insurance plans, collectively the " Benefit Plans") relating to the employees of the Company are duly registered where required by, and are in good standing in all material respects under, all applicable laws. All required employer and employee contributions and premiums under the Benefit Plans to the date hereof have been made, the respective fund or funds established under

the Benefit Plans are funded in accordance with applicable laws, and no past service funding liabilities exist thereunder.

(c) No Benefit Plans have any unfunded liabilities, either on a "going concern" or "winding up" basis and determined in accordance with all applicable laws and actuarial practices and using actuarial assumptions and methods that are reasonable in the circumstances. No event has occurred and no condition exists with respect to any Benefit Plans that has resulted or to the knowledge of the Company could reasonably be expected to result in any Benefit Plan having its registration revoked or wound up (in whole or in part) or refused for the purposes of any applicable laws or being placed under the administration of any relevant pension benefits regulatory authority or being required to pay any taxes or penalties (in any material amounts) under any applicable laws.

ARTICLE 4.10 ENVIRONMENTAL MATTERS . Each of the Company and the Subsidiaries conducts its businesses in compliance in all material respects with all applicable Environmental Laws.

ARTICLE 4.11 TAXES . All United States federal, state, county, municipality, local or foreign income tax returns and all other material tax returns (including foreign tax returns) which are required to be filed by or on behalf of the Company and each Subsidiary have been filed and all material taxes due and payable pursuant to such returns or pursuant to any assessment received by the Company and each Subsidiary have been paid except those being disputed in good faith and for which adequate reserves have been established. The charges, accruals and reserves on the books of the Company and each Subsidiary in respect of taxes and other governmental charges have been established in accordance with GAAP.

ARTICLE 4.12 INVESTMENTS, JOINT VENTURES . Other than as set forth in SCHEDULE 4.12, the Company has no Subsidiaries or other direct or indirect Investment in any Person, and the Company is not a party to any partnership, management, shareholders' or joint venture or similar agreement.

ARTICLE 4.13 NOT AN INVESTMENT COMPANY . Neither the Company nor any Subsidiary is an "Investment Company" within the meaning of Investment Company Act of 1940, as amended.

ARTICLE 4.14 FULL DISCLOSURE . The information heretofore furnished by the Company to Purchaser for purposes of or in connection with this Agreement or any transaction contemplated hereby does not contain any untrue statement of a material fact.

ARTICLE 4.15 NO SOLICITATION; NO INTEGRATION WITH OTHER OFFERINGS . No form of general solicitation or general advertising was used by the Company or, to its knowledge, any other Person acting on behalf of the Company, in connection with the offer and sale of the

Securities. Except as set forth in Schedule 4.15, neither the Company, nor, to its knowledge, any Person acting on behalf of the Company, has, either directly or indirectly, sold or offered for sale to any Person (other than Purchaser) any of the Securities or, within the six months prior to the date hereof, any other similar security of the Company except as contemplated by this Agreement, and the Company represents that neither itself nor any Person authorized to act on its behalf (except that the Company makes no representation as to Purchaser and their Affiliates) will sell or offer for sale any such security to, or solicit any offers to buy any such security from, or otherwise approach or negotiate in respect thereof with, any Person or Persons so as thereby to cause the issuance or sale of any of the Securities to be in violation of any of the provisions of Section 5 of the Securities Act. The issuance of the Securities to Purchaser will not be integrated with any other issuance of the Company's securities (past, current or future).

ARTICLE 4.16 PERMITS . (a) Each of the Company and its Subsidiaries has all

material Permits; (b) to the Company's knowledge all such Permits are in full force and effect, and each of the Company and its Subsidiaries has fulfilled and performed all material obligations with respect to such Permits; (c) no event has occurred which allows, or after notice of lapse of time would allow, revocation or termination by the issuer thereof or which results in any other material impairment of the rights of the holder of any such Permit; and (d) the Company has no reason to believe that any governmental body or agency is considering limiting, suspending or revoking any such Permit, except in each case or in the aggregate that could not be reasonably expected to have a Material Adverse Effect.

ARTICLE 4.17 LEASES . Except as set forth in Schedule 4.17, neither the Company nor any Subsidiary is a party to any capital lease obligation with a value greater than \$250,000 or to any operating lease with an aggregate annual rental greater than \$250,000 during the life of such lease.

ARTICLE 4.18 ABSENCE OF ANY UNDISCLOSED LIABILITIES OR CAPITAL CALLS . There are no liabilities of the Company or any Subsidiary of any kind whatsoever, whether accrued, contingent, absolute, determined, determinable or otherwise, and there is no existing condition, situation or set of circumstances which would reasonably be expected to result in such a liability, other than (i) those liabilities provided for in the financial statements delivered pursuant to Section 4.7 and (ii) other undisclosed liabilities which, individually or in the aggregate, would not have a Material Adverse Effect.

ARTICLE 4.19 PUBLIC UTILITY HOLDING COMPANY . Neither the Company nor any Subsidiary is, or will be upon issuance and sale of the Securities and the use of the proceeds described herein, subject to regulation under the Public Utility Holding Company Act of 1935, as amended, the Federal Power Act, the Interstate Commerce Act or to any federal or state statute or regulation limiting its ability to issue and perform its obligations under any Transaction Agreement.

20

ARTICLE 4.20 INTELLECTUAL PROPERTY RIGHTS . Each of the Company and its Subsidiaries owns, or is licensed under, and has the rights to use, all material to the knowledge of the Company, patents, trademarks, trade names, copyrights, technology, know-how and processes (collectively, " Intellectual Property") used in, or necessary for the conduct of its business; no claims have been asserted by any Person to the use of any such Intellectual Property or challenging or questioning the validity or effectiveness of any license or agreement related thereto. To the Company's and its Subsidiaries' knowledge, there is no valid basis for any such claim and the use of such Intellectual Property by the Company and its Subsidiaries will not infringe upon the rights of any Person.

ARTICLE 4.21 INSURANCE . The Company and its Subsidiaries maintain, with financially sound and reputable insurance companies, insurance in at least such amounts as is customary for businesses similar to the Company. All insurance coverages of the Company and its Subsidiaries are in full force and effect and there are no past due premiums in respect of any such insurance.

ARTICLE 4.22 TITLE TO PROPERTIES . Except as set forth on Schedule 4.22, the Company and its Subsidiaries have good and marketable title to all their respective properties reflected on the financial statements referred to in Section 4.7, free and clear of all Liens.

ARTICLE 4.23 INTERNAL ACCOUNTING CONTROLS . The Company and each of its Subsidiaries maintain a system of internal accounting controls sufficient, in the judgment of the Company's Board of Directors, to provide reasonable assurance that (i) transactions are executed in accordance with managements' general or specific authorizations, (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain asset accountability, (iii) access to assets is permitted only in accordance with management's general or specific authorization, and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences.

ARTICLE 4.24 FOREIGN PRACTICES . Neither the Company nor any of its Subsidiaries nor, to the Company's knowledge, any employee or agent of the Company or any Subsidiary has made any payments of funds of the Company or Subsidiary, or

received or retained any funds, in each case in violation of the Foreign Corrupt Practices Act.

ARTICLE 5. REPRESENTATIONS AND WARRANTIES OF PURCHASER

ARTICLE 5.1 PURCHASER . Purchaser hereby represents and warrants to the Company that:

(a) Purchaser is an "accredited investor" within the meaning of Rule 501(a) under the Securities Act and the Securities to be acquired by it pursuant to this

21

Agreement are being acquired for its own account and, as of the date hereof, not with a view toward, or for sale in connection with, any distribution thereof except in compliance with applicable United States federal and state securities law; provided that, subject to such securities laws, the disposition of Purchaser's property shall at all times be and remain within its control;

(b) the execution, delivery and performance of this Agreement and the purchase of the Securities pursuant thereto are within Purchaser's corporate or partnership powers, as applicable, and have been duly and validly authorized by all requisite corporate or partnership action;

(c) this Agreement has been duly executed and delivered by Purchaser;

(d) the execution and delivery by Purchaser of the Transaction Agreements to which it is a party does not, and the consummation of the transactions contemplated hereby and thereby will not, contravene or constitute a default under or violation of (i) any provision of applicable law or regulation, or (ii) any agreement, judgment, injunction, order, decree or other instrument binding upon Purchaser;

(e) Purchaser understands that the Securities have not been registered under the Securities Act and blue sky laws and may not be transferred or sold except as specified in this Agreement or the remaining Transaction Agreements;

(f) this Agreement constitutes a valid and binding agreement of Purchaser enforceable in accordance with its terms, subject to (i) applicable bankruptcy, insolvency or similar laws affecting the enforceability of creditors rights generally and (ii) equitable principles of general applicability;

(g) Purchaser has such knowledge and experience in financial and business matters so as to be capable of evaluating the merits and risks of its investment in the Securities and Purchaser is capable of bearing the economic risks of such investment;

(h) Purchaser is knowledgeable, sophisticated and experienced in business and financial matters; Purchaser has previously invested in securities similar to the Securities and fully understands the limitations on transfer described herein; Purchaser has been afforded access to information about the Company and the financial condition, results of operations, property, management and prospects of the Company sufficient to enable it to evaluate its investment in the Securities; Purchaser has been afforded the opportunity to ask such questions as it has deemed necessary of, and to receive answers from, representatives of the Company concerning the terms and conditions of the offering of the Securities and the merits and the risks of investing in the Securities; and Purchaser has been afforded the opportunity to obtain such additional information which the Company

22

possesses or can acquire that is necessary to verify the accuracy and completeness of the information given to Purchaser concerning the Company. The foregoing does not in any way relieve the Company of its representations and other undertakings hereunder, and shall not limit Purchaser's ability to rely

thereon;

(i) no part of the source of funds used by Purchaser to acquire the Securities constitutes assets allocated to any separate account maintained by Purchaser in which any employee benefit plan (or its related trust) has any interest;

(j) Shoreline is organized under the laws of Illinois and its principal office is located in Illinois. All contacts and communications between the Purchaser and the Company relating to this Agreement and the transactions contemplated hereby have taken place at the Company's offices in Massachusetts and Shoreline's investment advisor's offices in Illinois; and

(i) Kiphart is an individual residing in the state of Illinois.

ARTICLE 6. CONDITIONS PRECEDENT TO PURCHASE OF SECURITIES

ARTICLE 6.1 CONDITIONS PRECEDENT TO PURCHASER'S OBLIGATIONS TO PURCHASE . The obligation of Purchaser hereunder to purchase the Convertible Debentures at the Closing is subject to the satisfaction, on or before the Closing Date, of each of the following conditions, provided that these conditions are for Purchaser's sole benefit and may be waived by Purchaser at any time in its sole discretion:

(a) The Company shall have duly executed this Agreement, the Warrant and the Registration Rights Agreement, and delivered the same to Purchaser;

(b) The Company shall have delivered to Purchaser duly executed certificates representing the Convertible Debentures in accordance with Section 2.3 hereof;

(c) The representations and warranties of the Company contained in each Transaction Agreement shall be true and correct in all material respects as of the date when made and as of the Closing Date as though made at such time (except for representations and warranties that speak as of a specified date) and the Company shall have performed, satisfied and complied with all covenants, agreements and conditions required by such Transaction Agreements to be performed, satisfied or complied with by it at or prior to the Closing Date. Purchaser shall have received an Officer's Certificate executed by the chief executive officer of the Company, dated as of the Closing Date, to the foregoing effect and as to such other matters as may be reasonably requested by Purchaser, including but not limited to certificates with respect to the Company Corporate

23

Documents, resolutions relating to the transactions contemplated hereby and the incumbencies of certain officers and Directors of the Company. The form of such certificate is attached hereto as EXHIBIT D;

(d) The Company shall have received all governmental, Board of Directors, shareholders and third party consents and approvals necessary or desirable in connection with the issuance and sale of the Securities and the consummation of the transactions contemplated by the Transaction Agreements;

(e) All applicable waiting periods in respect to the issuance and sale of the Securities shall have expired without any action having been taken by any competent authority that could restrain, prevent or impose any materially adverse conditions thereon or that could seek or threaten any of the foregoing;

(f) No law or regulation shall have been imposed or enacted that, in the judgment of Purchaser, could adversely affect the transactions set forth herein or in the other Transaction Agreements, and no law or regulation shall have been proposed that in the reasonable judgment of Purchaser could reasonably have any such effect;

(g) All fees and expenses in connection with the transactions contemplated by the Transaction Agreements due and payable by the Company on or prior to the Closing Date shall have been paid;

(h) The Company Corporate Documents and the Subsidiary Corporate Documents, if any, shall be in full force and effect and no term or condition

thereof shall have been amended, waived or otherwise modified without the prior written consent of Purchaser;

(i) There shall have occurred no material adverse change in the business, condition (financial or otherwise), operations, performance, properties or prospects of the Company or any Subsidiary since June 30, 2000;

(j) There shall exist no action, suit, investigation, litigation or proceeding pending or threatened in any court or before any arbitrator or governmental instrumentality that challenges the validity of or purports to affect this Agreement or any other Transaction Agreement, or other transaction contemplated hereby or thereby or that could reasonably be expected to have a Material Adverse Effect, or any material adverse effect on the enforceability of the Transaction Agreements or the Securities or the rights of the holders of the Securities or Purchaser hereunder;

24

(k) Purchaser shall have confirmed the receipt of the Convertible Debentures and the Warrants to be issued, duly executed by the Company and registered in the name of Purchaser;

(l) There shall not have occurred any disruption or adverse change in the financial or capital markets generally, or in the market for the Common Stock (including but not limited to any suspension or delisting), which Purchaser reasonably deems material in connection with the purchase of the Securities;

(m) Immediately before and as of the Closing Date, no Default or Event of Default shall have occurred and be continuing;

ARTICLE 6.2 CONDITIONS TO THE COMPANY'S OBLIGATIONS . The obligations of the Company to issue and sell the Securities to Purchaser pursuant to this Agreement are subject to the satisfaction, at or prior to the Closing Date, of the following conditions:

(a) The representations and warranties of Purchaser contained herein shall be true and correct in all material respects on the Closing Date and Purchaser shall have performed and complied in all material respects with all agreements required by this Agreement to be performed or complied with by Purchaser at or prior to the Closing Date;

(b) The issue and sale of the Securities by the Company shall not be prohibited by any applicable law, court order or governmental regulation;

(c) Receipt by the Company of duly executed counterparts of this Agreement and the Registration Rights Agreement signed by Purchaser;

(d) The Company shall have received payment of the Purchase Price;

(e) There shall exist no action, suit, investigation, litigation or proceeding pending or threatened in any court or before any arbitrator or governmental instrumentality that challenges the validity of or purports to effect this Agreement or any other Transaction Agreement, or other transaction contemplated hereby or thereby or that could reasonably be expected to have a Material Adverse Effect, or any material adverse effect on the enforceability of the Transaction Agreements, or the Securities, or the rights of the holders of the Securities or Purchaser hereunder.

25

ARTICLE 7. AFFIRMATIVE COVENANTS

The Company and Purchaser hereby agree that, from and after the date hereof for so long as any Convertible Debentures remain outstanding and for the benefit of each other:

ARTICLE 7.1 INFORMATION . The Company will deliver to each holder of the Convertible Debentures:

(a) promptly upon the filing thereof, copies of (i) all registration statements (other than the exhibits thereto and any registration statements on Form S-8 or its equivalent), and (ii) all reports on Forms 10-K, 10-Q and 8-K (or other equivalents) which the Company or any Subsidiary has filed with the Commission after the Closing Date (collectively, "SEC Reports");

(b) simultaneously with the delivery of each item referred to in clause (a) above, a certificate from the chief financial officer of the Company stating that no Default or Event of Default has occurred and is continuing, or, if as of the date of such delivery a Default shall have occurred and be continuing, a certificate from the Company setting forth the details of such Default or Event of Default and the action which the Company is taking or proposes to take with respect thereto;

(c) within two (2) Business Days after any officer of the Company obtains knowledge of a Default or Event of Default, or that any Person has given any notice or taken any action with respect to a claimed Default hereunder, a certificate of the chief financial officer of the Company setting forth the details thereof and the action which the Company is taking or proposed to take with respect thereto;

(d) promptly upon the mailing thereof to the shareholders of the Company generally, copies of all financial statements, reports and proxy statements so mailed and any other document generally distributed to shareholders;

(e) at least two (2) Business Days prior to any event requiring a repayment of the Convertible Debentures under Section 3.4, notice thereof together with a summary of all material terms thereof;

(f) notice promptly upon the occurrence of any event by which the Reserved Amount becomes less than the sum of (i) 1.5 times the maximum number of Conversion Shares issuable pursuant to the Transaction Agreements; and

(g) promptly following the commencement thereof, notice and a description in reasonable detail of any litigation or proceeding to which the Company or any Subsidiary

26

is a party in which the amount involved is \$250,000 or more and not covered by insurance or in which injunctive or similar relief is sought.

ARTICLE 7.2 PAYMENT OF OBLIGATIONS . The Company will, and will cause each Subsidiary to, pay and discharge, at or before maturity, all their respective material obligations, including, without limitation, tax liabilities, except where the same may be contested in good faith by appropriate proceedings and will maintain, in accordance with GAAP, appropriate reserves for the accrual of any of the same.

ARTICLE 7.3 MAINTENANCE OF PROPERTY; INSURANCE . The Company will, and will cause each Subsidiary to, keep all property necessary in its business in good working order and condition, ordinary wear and tear excepted. In addition, the Company and each Subsidiary will maintain insurance in at least such amounts and against such risks as it has insured against as of the Closing Date.

ARTICLE 7.4 MAINTENANCE OF EXISTENCE . The Company will, and will cause each Subsidiary to, continue to engage in business of the same general type as now conducted by the Company and such Subsidiaries, and will preserve, renew and keep in full force and effect its respective corporate existence and their respective material rights, privileges and franchises necessary or desirable in the normal conduct of business.

ARTICLE 7.5 COMPLIANCE WITH LAWS . The Company will, and will cause each Subsidiary to, comply, in all material respects, with all federal, state, municipal, local or foreign applicable laws, ordinances, rules, regulations, municipal by-laws, codes and requirements of governmental authorities (including, without limitation, Environmental Laws and ERISA and the rules and regulations thereunder) except (i) where compliance therewith is contested in good faith by appropriate proceedings or (ii) where non-compliance therewith

could not reasonably be expected, in the aggregate, to have a Material Adverse Effect on the business, condition (financial or otherwise), operations, performance, properties or prospects of the Company or such Subsidiary.

ARTICLE 7.6 INSPECTION OF PROPERTY, BOOKS AND RECORDS . The Company will, and will cause each Subsidiary to, keep proper books of record and account in which full, true and correct entries shall be made of all dealings and transactions in relation to their respective businesses and activities; and will permit, during normal business hours, Purchaser's representative or an affiliate thereof, as representatives of Purchaser, to visit and inspect any of their respective properties, upon reasonable prior notice, to examine and make abstracts from any of their respective books and records and to discuss their respective affairs, finances and accounts with their respective executive officers and independent public accountants (and by this provision the Company authorizes its independent public accountants to disclose and discuss with Purchaser the affairs, finances and accounts of the Company and its Subsidiaries in the presence of a

27

representative of the Company; provided, however, that such discussions will not result in any unreasonable expense to the Company, without Company consent), all at such reasonable times.

ARTICLE 7.7 INVESTMENT COMPANY ACT . The Company will not be or become an open-end investment trust, unit investment trust or face-amount certificate company that is or is required to be registered under Section 8 of the Investment Company Act of 1940, as amended.

ARTICLE 7.8 USE OF PROCEEDS . The proceeds from the issuance and sale of the Convertible Debentures by the Company shall be used in accordance with SCHEDULE 7.8 attached hereto. None of the proceeds from the issuance and sale of the Convertible Debentures by the Company pursuant to this Agreement will be used directly or indirectly for the purpose, whether immediate, incidental or ultimate, of purchasing or carrying any "margin stock" within the meaning of Regulation G of the Board of Governors of the Federal Reserve System.

ARTICLE 7.9 COMPLIANCE WITH TERMS AND CONDITIONS OF MATERIAL CONTRACTS . The Company will, and will cause each Subsidiary to, comply, in all material respects, with all terms and conditions of all material contracts to which it is subject except in particular circumstances in which the Company determines it to be in the best interests of the Company not to comply.

ARTICLE 7.10 RESERVED SHARES AND LISTINGS .

(a) The Company shall at all times have authorized, and reserved for the purpose of issuance, a sufficient number of shares of Common Stock to provide for the full conversion of the outstanding Convertible Debentures and exercise of the Warrants and issuance of the Conversion Shares (based on the conversion price of the Convertible Debentures in effect from time to time and the exercise price of the Warrants, respectively) (the "Reserved Amount"). The Company shall not reduce the Reserved Amount without the prior written consent of Purchaser. With respect to all Securities which contain an indeterminate number of shares of Common Stock issuable in connection therewith (such as the Convertible Debentures), the Company shall include in the Reserve Amount, no less than two (2) times the number of shares that is then actually issuable upon conversion or exercise of such Securities. If at any time the number of shares of Common Stock authorized and reserved for issuance is below the number of Conversion Shares issued or issuable upon conversion of the Convertible Debentures and exercise of the Warrants, the Company will promptly take all corporate action necessary to authorize and reserve a sufficient number of shares, including, without limitation, either (x) calling a special meeting of shareholders to authorize additional shares, in the case of an insufficient number of authorized shares or (y) in lieu thereof, consummating the immediate repurchase of the Convertible Debentures and the Warrants contemplated in Sections 3.4(c) and 10.3 hereof, respectively.

(b) If required, the Company shall promptly file the Listing Applications and secure the listing of the Conversion Shares upon each national securities exchange or automated

quotation system, if any, upon which shares of Common Stock are then listed (subject to official notice of issuance) and shall maintain, so long as any other shares of Common Stock shall be so listed, such listing of all Conversion Shares from time to time issuable upon conversion or exercise of the Convertible Debentures and Warrants, respectively. The Company will maintain the listing and trading of its Common Stock on the Nasdaq Market. The Company will comply in all respects with the Company's reporting, filing and other obligations under the bylaws or rules of the National Association of Securities Dealers, Inc. (the "NASD") and such exchanges, as applicable. The Company shall promptly provide to Purchaser copies of any notices it receives regarding the continued eligibility of the Common Stock for listing on the Nasdaq Market.

ARTICLE 7.11 TRANSFER AGENT INSTRUCTIONS . Upon receipt of a Notice of Conversion or Notice of Exercise, as applicable, the Company shall immediately direct the Company's transfer agent to issue certificates, registered in the name of Purchaser or its nominee, for the Conversion Shares, in such amounts as specified from time to time by Purchaser to the Company upon proper conversion of the Convertible Debentures or exercise of the Warrants. Upon conversion of any Convertible Debentures in accordance with their terms and/or exercise of any Warrants in accordance with their terms, the Company will, and will use its best lawful efforts to cause its transfer agent to, issue one or more certificates representing shares of Common Stock in such name or names and in such denominations specified by a Purchaser in a Notice of Conversion or Notice of Exercise, as the case may be. As long as the Registration Statement contemplated by the Registration Rights Agreement shall remain effective, the shares of Common Stock issuable upon conversion of any Convertible Debentures or exercise of the Warrants shall be issued to any transferee of such shares from Purchaser without any restrictive legend upon appropriate evidence of transfer in compliance with the Securities Act and the rules and regulations of the Commission; provided that for so long as the Registration Statement is effective, no opinion of counsel will be required to effect any such transfer. The Company further warrants and agrees that no instructions other than these instructions have been or will be given to its transfer agent. Nothing in this Section 7.11 shall affect in any way a Purchaser's obligation to comply with all securities laws applicable to Purchaser upon resale of such shares of Common Stock, including any prospectus delivery requirements.

ARTICLE 7.12 MAINTENANCE OF REPORTING STATUS; SUPPLEMENTAL INFORMATION . So long as any of the Securities are outstanding, the Company shall timely file all reports required to be filed with the Commission pursuant to the Exchange Act. The Company shall not terminate its status as an issuer required to file reports under the Exchange Act, even if the Exchange Act or the rules and regulations thereunder would permit such termination. If at anytime the Company is not subject to the requirements of Section 13 or 15(d) of the Exchange Act, the Company will promptly furnish at its expense, upon request, for the benefit of the holders from time to time of Securities, and prospective purchasers of Securities, information satisfying the information requirements of Rule 144 under the Securities Act.

ARTICLE 7.13 FORM D; BLUE SKY LAWS . The Company agrees to file a "Form D" with respect to the Securities as required under Regulation D of the Securities Act and to provide a copy thereof to Purchaser promptly after such filing. The Company shall, on or before the Closing Date, take such action as the Company shall reasonably determine is necessary to qualify the Securities for sale to Purchaser at the Closing pursuant to this Agreement under applicable securities or "blue sky" laws of the states of the United States (or to obtain an exemption from such qualification), and shall provide evidence of any such action so taken to Purchaser on or prior to the Closing Date.

ARTICLE 7.14 SALES BY PURCHASER . Purchaser agrees that it will not effect or cause any of its affiliates to effect a short sale of Common Stock for so long as any of the Convertible Debentures remain outstanding or the Purchaser or its affiliates hold any Securities.

The Company hereby agrees that after the date hereof for so long as any Convertible Debentures remain outstanding and for the benefit of Purchaser:

ARTICLE 8.1 LIMITATIONS ON DEBT OR OTHER LIABILITIES . Neither the Company nor any Subsidiary will create, incur, assume or suffer to exist (at any time after the Closing Date, after giving effect to the application of the proceeds of the issuance of the Securities), except as set forth in Schedule 8.1, (i) any Debt except (x) Debt incurred in a Permitted Financing, (y) Debt incurred in connection with equipment leases to which the Company or its Subsidiaries are a party incurred in the ordinary course of business; or (z) Debt incurred in connection with trade accounts payable, imbalances and refunds arising in the ordinary course of business and (ii) any equity securities (including Derivative Securities) (other than those securities that are issuable (x) under or pursuant to stock option plans, warrants or other rights programs that exist as of the date hereof, or (y) in connection with the acquisition (including by merger) of a business or of assets otherwise permitted under this Agreement).

ARTICLE 8.2 TRANSACTIONS WITH AFFILIATES . The Company and each Subsidiary will not, directly or indirectly, pay any funds to or for the account of, make any investment (whether by acquisition or stock or indebtedness, by loan, advance, transfer of property, guarantee or other agreement to pay, purchase or service, directly or indirectly, and Debt, or otherwise) in, lease, sell, transfer or otherwise dispose of any assets, tangible or intangible, to, or participate in, or effect any transaction in connection with any joint enterprise or other joint arrangement with, any Affiliate, except, (1) pursuant to those agreements specifically identified on SCHEDULE 8.2 attached hereto (with a copy of such agreements annexed to such SCHEDULE 8.2) or (2) on terms to the Company or such Subsidiary no less favorable than terms that could be obtained by the Company or such Subsidiary from a Person that is not an Affiliate of the Company upon negotiation at arms' length, as determined in good faith by the Board of Directors of the

30

Company; PROVIDED that no determination of the Board of Directors shall be required with respect to any such transactions entered into in the ordinary course of business.

ARTICLE 8.3 MERGER OR CONSOLIDATION . The Company will not, in a single transaction or a series of related transactions (i) consolidate with or merge with or into any other Person, or (ii) permit any other Person to consolidate with or merge into it, unless the Company shall be the survivor of such merger or consolidation and (x) immediately before and immediately after given effect to such transaction (including any indebtedness incurred or anticipated to be incurred in connection with the transaction), no Default or Event of Default shall have occurred and be continuing; and (y) the Company has delivered to Purchaser an Officer's Certificate stating that such consolidation, merger or transfer complies with this Agreement, and that all conditions precedent in this Agreement relating to such transaction have been satisfied.

ARTICLE 8.4 LIMITATION ON ASSET SALES . Except as set forth on SCHEDULE 8.4, neither the Company nor any Subsidiary will consummate an Asset Sale of material assets of the Company or any Subsidiary without the prior written consent of Purchaser, which consent shall not be unreasonably withheld. As used herein, "Asset Sale" means any sale, lease, transfer or other disposition (or series of related sales, leases, transfers or dispositions) or sales of capital stock of a Subsidiary (other than directors' qualifying shares), property or other assets (each referred to for the purpose of this definition as a "disposition"), including any disposition by means of a merger, consolidation or similar transaction other than a disposition of property or assets in arm's length transactions in the ordinary course of business.

ARTICLE 8.5 RESTRICTIONS ON CERTAIN AMENDMENTS . Neither the Company nor any Subsidiary will waive any provision of, amend, or suffer to be amended, any provision of such entity's existing Debt, any material contract or agreement previously or hereafter filed by the Company with the Commission as part of its SEC Reports, any Company Corporate Document or Subsidiary Corporate Document if such amendment, in the Company's reasonable judgment, would materially adversely affect Purchaser or the holders of the Securities without the prior written consent of Purchaser.

ARTICLE 8.6 RESTRICTIONS ON ISSUANCES OF SECURITIES.

(a) In addition to and not in lieu of the covenant specified in Section 8.1 above:

- (1) From the Closing Date and continuing until 180 days following the date on which the Registration Statement becomes effective, the Company agrees that it will not issue any of its equity securities (or securities convertible into or exchangeable or exercisable for equity securities (the "Derivative Securities")) on terms that allow a holder thereof to acquire such equity securities (or Derivative Securities) at a discount to the Market Price of the Common Stock at the time of issuance or, in

31

the case of Derivative Securities, at a conversion price based on any formula (other than standard anti-dilution provisions) based on the Market Price on a date later than the date of issuance which is below the Market Price on the date of issuance (each such event, a "Discounted Equity Offering") other than (i) borrowings under conventional credit facilities existing as of the date hereof, (ii) stock issued or credit facilities to be established in connection with acquisitions, (iii) equity securities or Derivative Securities in connection with employee and director stock option and stock purchase plans, and (iv) securities issued under the Convertible Debentures or Warrants. In addition, the Company shall not issue any equity securities in connection with a strategic alliance entered into by the Company unless such securities are the subject of a one year statutory or contractual hold period or, if not subject to such a hold period, unless the Purchaser has fully converted all outstanding Convertible Debentures and exercised all Warrants. As used herein, "discount" shall include, but not be limited to, (i) any warrant, right or other security granted or offered in connection with such issuance which, on the applicable date of grant, is offered with an exercise or conversion price, as the case may be, at less than the then current Market Price of the Common Stock or, if such security has an exercise or conversion price based on any formula (other than standard anti-dilution provisions) based on the Market Price on a date later than the date of issuance, then at a price below the Market Price on such date of exercise or conversion, as the case may be, or (ii) any commissions, fees or other allowances paid in connection with such issuances (other than customary underwriter or placement agent commissions, fees or allowances). For the purposes of determining the Market Price at which Common Stock is acquired under this Section, normal underwriting commissions and placement fees (including underwriters' warrants) shall be excluded. Notwithstanding the foregoing, the Company may enter into the following types of transactions (collectively referred to as "Permitted Financings"):

(1) "permanent financing" transactions, which would include any form of debt or equity financing (other than an underwritten offering), which is followed by a reduction of the said financing commitment to zero and payment of all related fees and expenses; (2) "project financing" which provide for the issuance of recourse debt instruments in connection with the operation of the Company's business as presently conducted or as proposed to be conducted; (3) an underwritten offering of Common Stock, provided that such offering provides for the registration of the Conversion Shares if the Registration Statement has not been declared effective; and (4) other financing transactions specifically consented to in writing by the Purchaser.

- (2) The restrictions set forth in paragraph (1) of this Section 8.6(a) shall terminate in the event the average Closing Bid Price for the Common Stock is equal to or greater than \$10.00 for ten Trading Days of any twelve consecutive Trading Day

32

period and the Registration Statement is continuously effective during such period. The 180-day restrictive period set forth in paragraph (1) of this Section 8.6(a) shall be increased by one day for each day a Registration Default has occurred and not been cured by the Company.

(b) Until such time as all of the Convertible Debentures have been either redeemed or converted into Conversion Shares in full, the Company agrees it will not issue any of its equity securities (or Derivative Securities), unless any shares of Common Stock issued or issuable in connection therewith are "restricted securities." As used herein "restricted securities" shall mean securities which may not be sold prior to twelve (12) months following the date of issuance of such securities by virtue of contractual restrictions imposed by the Company or otherwise.

(c) Notwithstanding the foregoing, the restrictions contained in this Section 8.6 shall not apply to the issuance by the Company of (or the agreement to issue) Common Stock or securities convertible into Common Stock in connection with (i) the acquisition (including by merger) of a business or of assets otherwise permitted under this Agreement, or (ii) Company or Subsidiary stock option or other compensatory or employee benefit plans.

ARTICLE 8.7 LIMITATION ON STOCK REPURCHASES . Except as otherwise set forth in the Convertible Debentures and the Warrants, the Company shall not, without the written consent of the Majority Holders, redeem, repurchase or otherwise acquire (whether for cash or in exchange for property or other securities or otherwise) any shares of capital stock of the Company or any warrants, rights or options to purchase or acquire any such shares.

ARTICLE 8.8 LIMITATION ON SALES BY OFFICERS AND EMPLOYEE DIRECTORS . For a period of 180 days following the date the Registration Statement is declared effective by the Commission, no executive officer or a employee director of the Company shall, individually, sell or otherwise dispose of (other than by reason of death or disability) to any Person an amount of Common stock greater than that allowed by Rule 144, promulgated under the Securities Act.

ARTICLE 9. RESTRICTIVE LEGENDS

ARTICLE 9.1 RESTRICTIONS ON TRANSFER . From and after their respective dates of issuance, none of the Securities shall be transferable except upon the conditions specified in this Article 9, which conditions are intended to ensure compliance with the provisions of the Securities Act in respect of the Transfer of any of such Securities or any interest therein. Purchaser will cause any proposed transferee of any Securities held by it to agree to take and hold such Securities subject to the provisions and upon the conditions specified in this Article 9.

33

ARTICLE 9.2 NOTICE OF PROPOSED TRANSFERS . Prior to any proposed Transfer of the Securities the holder thereof shall give written notice to the Company of such holder's intention to effect such Transfer, setting forth the manner and circumstances of the proposed Transfer, which shall be accompanied by (A) an opinion of counsel reasonably acceptable to the Company, confirming that such transfer does not give rise to a violation of the Securities Act, (B) representation letters in form and substance reasonably satisfactory to the Company to ensure compliance with the provisions of the Securities Act and (C) letters in form and substance reasonably satisfactory to the Company from each such transferee stating such transferee's agreement to be bound by the terms of this Agreement and the Registration Rights Agreement. Such proposed Transfer may be effected only if the Company shall have received such notice of transfer, opinion of counsel, representation letters and other letters referred to in the immediately preceding sentence, whereupon the holder of such Securities shall be entitled to Transfer such Securities in accordance with the terms of the notice delivered by the holder to the Company.

ARTICLE 10. ADDITIONAL AGREEMENTS AMONG THE PARTIES

ARTICLE 10.1 LIQUIDATED DAMAGES .

(a) The Company shall cause its transfer agent to, issue and deliver shares of Common Stock consistent with Section 7.11 hereof within three (3) New York Stock Exchange Trading Days of delivery of a Notice of Conversion or Notice of Exercise, as applicable (the "Deadline") to Purchaser (or any party receiving Securities by transfer from Purchaser) at the address of Purchaser set forth in the Notice of Conversion or Notice of Exercise, as the case may be. The Company understands that a delay in the issuance of such certificates after the Deadline could result in economic loss to Purchaser.

(b) Without in any way limiting Purchaser's right to pursue other remedies, including actual damages and/or equitable relief, the Company agrees that if delivery of the Conversion Shares is more than one (1) Business Day after the Deadline (other than a failure due to the circumstances described in Section 4.3 of the Convertible Debentures, which failure shall be governed by such Section) the Company shall pay to Purchaser, as liquidated damages and not as a penalty, \$500 in cash for each \$100,000 principal of Convertible Debentures then outstanding for each of the first ten days that the Company fails to deliver such Conversion Shares and \$1,000 in cash for each \$100,000 amount of Convertible Debentures then outstanding per each day thereafter. Such cash amount shall be paid in cash to Purchaser upon demand or, at the option of the Company (by written notice to the Purchaser by the first day of the week following the week in which it has accrued), shall be added to the principal amount of the Convertible Debenture (if then outstanding) payable to Purchaser, in which event interest shall accrue thereon in accordance with the terms of the Convertible Debentures and such additional principal

34

amount shall be convertible into Conversion Shares in accordance with the terms of the Convertible Debentures.

ARTICLE 10.2 CONVERSION NOTICE . The Company agrees that, in addition to any other remedies which may be available to Purchaser, including, but not limited to, the remedies available under Section 10.1, in the event the Company fails for any reason (other than as a result of actions taken by Purchaser in breach of this Agreement) to effect delivery to Purchaser of certificates with or without restrictive legends as contemplated by Article 9 representing the shares of Common Stock on or prior to the Deadline after conversion of any Convertible Debentures or exercise of the Warrants, Purchaser will be entitled, if prior to the delivery of such certificates, to revoke the Notice of Conversion or Notice of Exercise, as applicable, by delivering a notice to such effect to the Company whereupon the Company and Purchaser shall each be restored to their respective positions immediately prior to delivery of such Notice of Conversion or Notice of Exercise, as the case may be.

ARTICLE 10.3 CONVERSION LIMIT . Notwithstanding the conversion rights under the Convertible Debentures, unless Purchaser delivers a waiver in accordance with the immediately following sentence, in no event shall Purchaser be entitled to convert any portion of the Convertible Debentures, in excess of that portion of the Convertible Debentures, as applicable, of which the sum of (i) the number of shares of Common Stock beneficially owned by Purchaser and its Affiliates (other than shares of Common Stock which may be deemed beneficially owned through the ownership of the unconverted portion of the Convertible Debenture or other Derivative Securities convertible into or exchangeable for shares of Common Stock which contain a limitation similar to that set forth in this Section 10.3), and (ii) the number of shares of Common Stock issuable upon the conversion of the portion of the Convertible Debenture with respect to which this determination is being made, would result in beneficial ownership by Purchaser and its Affiliates of more than 4.99% of the outstanding shares of Common Stock. For purposes of Section 10.3(i) beneficial ownership shall be determined in accordance with Rule 13d-3 of the Exchange Act and Regulations 13 D-G thereunder, except as otherwise provided in this Section 10.3. The foregoing limitation shall not apply and shall be of no further force or effect (i) immediately preceding and upon the occurrence of any voluntary or mandatory redemption or repayment transaction described herein or in the Convertible Debentures, (ii) immediately preceding and upon any Sale Event, (iii) on the Maturity Date or (iv) following the occurrence of any Event of Default which is

not cured for a period of ten (10) calendar days.

ARTICLE 10.4 REGISTRATION RIGHTS .

(a) The Company shall grant Purchaser registration rights covering the Conversion Shares (the "Registrable Securities") on the terms set forth in the Registration Rights Agreement and herein.

35

(b) The Company shall prepare and file on or before the 30th day following the Closing Date (the "Filing Date"), a registration statement or amendment thereto (the "Registration Statement") covering the resale of the Registrable Securities with the Commission. In the event the Company fails to file the Registration Statement by the Filing Date for any reason other than Purchaser's failure to provide information requested by the Company for the completion and filing of the Registration Statement, the Company shall pay to Purchaser as liquidated damages (and not as a penalty) one percent (1%) of the then outstanding principal amount of Convertible Debentures per day until the Registration Statement is filed with the Commission. The Company shall use its best efforts to cause the Registration Statement to be declared effective by the Commission or the earlier of (i) 90 days following the Closing Date, (ii) ten days following the receipt of a "No Review" Letter from the Commission or (iii) the first Business Day following the day the Commission determines the Registration Statement eligible to be declared effective (the "Required Effectiveness Date"). The Company shall pay all expenses of registration (other than underwriting fees and discounts, if any, in respect of Registrable Securities offered and sold under the registration statement by Purchaser). The Company agrees to file an initial written response to the Commission within ten calendar days of receipt of any comments by the Commission relating to the Registration Statement.

(c) If the Registration Statement is not declared effective by the Commission by the Required Effectiveness Date, the Company shall pay to Purchaser, as liquidated damages (and not as a penalty), an amount equal to 2% of the outstanding principal amount of the Convertible Debentures, prorated, for each 30 day period the Registration Statement is not declared effective by the Commission, which amount will be increased to 3% of the outstanding principal amount of the Convertible Debentures in the event that the Registration Statement is not declared effective by the Commission within 120 days of the Closing Date. In the event the Company fails to obtain a valid registration statement by the 180th day following the Closing Date, the Company will redeem the Convertible Debentures and the Warrants as set forth in Section 5 of the Convertible Debentures and Section 13 of the Warrants, respectively. Additionally, the Company will grant to Purchaser certain piggyback registration rights in the event the Company proposes to effect a registered offering of Common Stock or warrants or both prior to the filing of the Registration Statement referenced above.

(d) Any such liquidated damages shall be paid in cash by the Company to Purchaser by wire transfer in immediately available funds on the last day of each calendar week following the event requiring its payment.

(e) If, following the declaration of effectiveness of the Registration Statement, such registration statement (or any prospectus or supplemental prospectus contained therein) shall cease to be effective for any reason (including but not limited to the occurrence of any event that results in any prospectus or supplemental prospectus

36

containing an untrue statement of a material fact or omitting a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading), the Company fails to file required amendments to the Registration Statement in order to allow the Purchaser to resell the Conversion Shares pursuant to the Registration Statement as

unrestricted, unlegended, freely tradeable shares of Common Stock, or if for any reason there are insufficient shares of such shares of Common Stock registered under the then current Registration Statement to effect full conversion of the Convertible Debentures or exercise of the Warrants (a "Registration Default"), the Company shall immediately take all necessary steps to cause the Registration Statement to be amended or supplemented so as to cure such Registration Default. Failure to cure a Registration Default within ten (10) Business Days shall result in the Company paying to Purchaser liquidated damages at the rate of \$1,000 per day from the date of such Registration Default until the Registration Default is cured.

ARTICLE 11. ADJUSTMENT OF FIXED PRICE

ARTICLE 11.1 REORGANIZATION . The Conversion Price and the exercise price of the Warrants (collectively, the "Fixed Prices") shall be adjusted, as applicable, as hereafter provided.

ARTICLE 11.2 SHARE REORGANIZATION . If and whenever the Company shall:

- (i) subdivide the outstanding shares of Common Stock into a greater number of shares;
- (ii) consolidate the outstanding shares of Common Stock into a smaller number of shares;
- (iii) issue Common Stock or securities convertible into or exchangeable for shares of Common Stock as a stock dividend to all or substantially all the holders of Common Stock; or
- (iv) make a distribution on the outstanding Common Stock to all or substantially all the holders of Common Stock payable in Common Stock or securities convertible into or exchangeable for Common Stock;

any of such events being herein called a "Share Reorganization," then in each such case the applicable Fixed Price shall be adjusted, effective immediately after the record date at which the holders of Common Stock are determined for the purposes of the Share Reorganization or, if no record date is fixed, the effective date of the Share Reorganization, by multiplying the applicable Fixed Price in effect on such record or effective date, as the case may be, by a fraction of which:

37

(I) the numerator shall be the number of shares of Common Stock outstanding on such record or effective date (without giving effect to the Share Reorganization); and

(II) the denominator shall be the number of shares of Common Stock outstanding after giving effect to such Share Reorganization, including, in the case of a distribution of securities convertible into or exchangeable for shares of Common Stock, the number of shares of Common Stock that would have been outstanding if such securities had been converted into or exchanged for Common Stock on such record or effective date.

ARTICLE 11.3 RIGHTS OFFERING . If and whenever the Company shall issue to all or substantially all the holders of Common Stock, rights, options or warrants under which such holders are entitled, during a period expiring not more than 45 days after the record date of such issue, to subscribe for or purchase Common Stock (or Derivative Securities), at a price per share (or, in the case of securities convertible into or exchangeable for Common Stock, at an exchange or conversion price per share at the date of issue of such securities) of less than 95% of the Market Price of the Common Stock on such record date (any such event being herein called a "Rights Offering"), then in each such case the applicable Fixed Price shall be adjusted, effective immediately after the record date at which holders of Common Stock are determined for the purposes of the Rights Offering, by multiplying the applicable Fixed Price in effect on such record date by a fraction of which:

(i) the numerator shall be the sum of:

(I) the number of shares of Common Stock outstanding on such record date; and

(II) a number obtained by dividing:

(A) either,

(x) the product of the total number of shares of Common Stock so offered for subscription or purchase and the price at which such shares are so offered, or

(y) the product of the maximum number of shares of Common Stock into or for which the convertible or exchangeable securities so offered for subscription or purchase may be converted or exchanged and the conversion or exchange price of such securities, or, as the case may be, by

(B) the Market Price of the Common Stock on such record date; and

(ii) the denominator shall be the sum of:

38

(I) the number of shares of Common Stock outstanding on such record date; and

(II) the number of shares of Common Stock so offered for subscription or purchase (or, in the case of Derivative Securities, the maximum number of shares of Common Stock for or into which the securities so offered for subscription or purchase may be converted or exchanged).

To the extent that such rights, options or warrants are not exercised prior to the expiry time thereof, the applicable Fixed Price shall be readjusted effective immediately after such expiry time to the applicable Fixed Price which would then have been in effect upon the number of shares of Common Stock (or Derivative Securities) actually delivered upon the exercise of such rights, options or warrants.

ARTICLE 11.4 SPECIAL DISTRIBUTION . If and whenever the Company shall issue or distribute to all or substantially all the holders of Common Stock:

(i) shares of the Company of any class, other than Common Stock;

(ii) rights, options or warrants; or

(iii) any other assets (excluding cash dividends and equivalent dividends in shares paid in lieu of cash dividends in the ordinary course);

and if such issuance or distribution does not constitute a Share Reorganization or a Rights Offering (any such event being herein called a "Special Distribution"), then in each such case the applicable Fixed Price shall be adjusted, effective immediately after the record date at which the holders of Common Stock are determined for purposes of the Special Distribution, by multiplying the applicable Fixed Price in effect on such record date by a fraction of which:

(i) the numerator shall be the difference between:

(A) the product of the number of shares of Common Stock outstanding on such record date and the Market Price of the Common Stock on such date; and

(B) the fair market value, as determined by the Directors (whose determination shall be conclusive), to the holders of Common Stock of the shares, rights, options, warrants, evidences of

indebtedness or other assets issued or distributed in the Special Distribution (net of any consideration paid therefor by the holders of Common Stock), and

39

(ii) the denominator shall be the product of the number of shares of Common Stock outstanding on such record date and the Market Price of the Common Stock on such date.

ARTICLE 11.5 CAPITAL REORGANIZATION . If and whenever there shall occur:

(i) a reclassification or redesignation of the shares of Common Stock or any change of the shares of Common Stock into other shares, other than in a Share Reorganization;

(ii) a consolidation, merger or amalgamation of the Company with, or into another body corporate; or

(iii) the transfer of all or substantially all of the assets of the Company to another body corporate;

(any such event being herein called a "Capital Reorganization"), then in each such case the holder who exercises the right to convert Convertible Debentures after the effective date of such Capital Reorganization shall be entitled to receive and shall accept, upon the exercise of such right, in lieu of the number of shares of Common Stock to which such holder was theretofore entitled upon the exercise of the conversion privilege, the aggregate number of shares or other securities or property of the Company or of the body corporate resulting from such Capital Reorganization that such holder would have been entitled to receive as a result of such Capital Reorganization if, on the effective date thereof, such holders had been the holder of the number of shares of Common Stock to which such holder was theretofore entitled upon conversion; provided, however, that no such Capital Reorganization shall be consummated in effect unless all necessary steps shall have been taken so that such holders shall thereafter be entitled to receive such number of shares or other securities of the Company or of the body corporate resulting from such Capital Reorganization, subject to adjustment thereafter in accordance with provisions the same, as nearly as may be possible, as those contained above.

ARTICLE 11.6 ADJUSTMENT RULES . The following rules and procedures shall be applicable to adjustments made in this Article 11:

(a) no adjustment in the applicable Fixed Price shall be required unless such adjustment would result in a change of at least 1% in the applicable Fixed Price then in effect, provided, however, that any adjustments which, but for the provisions of this clause would otherwise have been required to be made, shall be carried forward and taken into account in any subsequent adjustment;

(b) if any event occurs of the type contemplated by the adjustment provisions of this Article 11 but not expressly provided for by such provisions, the Company will

40

give notice of such event as provided herein, and the Directors will make an appropriate adjustment in the Fixed Price so that the rights of the holders of the applicable Security shall not be diminished by such event; and

(c) if a dispute shall at any time arise with respect to any adjustment of the applicable Fixed Price, such dispute shall be conclusively determined by the auditors of the Company or, if they are unable or unwilling to act, by a firm of independent chartered accountants selected by the Directors and any such determination shall be binding upon the Company and Purchaser.

ARTICLE 11.7 CERTIFICATE AS TO ADJUSTMENT . The Company shall from time to time promptly after the occurrence of any event which requires an adjustment in the applicable Fixed Price deliver to Purchaser a certificate specifying the nature

of the event requiring the adjustment, the amount of the adjustment necessitated thereby, the applicable Fixed Price after giving effect to such adjustment and setting forth, in reasonable detail, the method of calculation and the facts upon which such calculation is based.

ARTICLE 11.8 NOTICE TO HOLDERS . If the Company shall fix a record date for:

- (a) any Share Reorganization (other than the subdivision of outstanding Common Stock into a greater number of shares or the consolidation of outstanding Common Stock into a smaller number of shares),
- (b) any Rights Offering,
- (c) any Special Distribution,
- (d) any Capital Reorganization (other than a reclassification or redesignation of the Common Stock into other shares),
- (e) Sale Event; or
- (f) any cash dividend,

the Company shall, not less than 10 days prior to such record date or, if no record date is fixed, prior to the effective date of such event, give to Purchaser notice of the particulars of the proposed event or the extent that such particulars have been determined at the time of giving the notice.

41

ARTICLE 12. EVENTS OF DEFAULT

ARTICLE 12.1 EVENTS OF DEFAULT. If one or more of the following events (each an "Event of Default") shall have occurred and be continuing:

- (a) failure by the Company to pay or repay when due, all or any part of the principal on any of the Convertible Debentures (whether by virtue of the agreements specified in this Agreement or the Convertible Debentures);
- (b) failure by the Company to pay (i) within five (5) Business Days of the due date thereof any interest on any Convertible Debentures or (ii) within five (5) Business Days following the delivery of notice to the Company of any fees or any other amount payable (not otherwise referred to in (a) above or this clause (b)) by the Company under this Agreement or any other Transaction Agreement;
- (c) failure by the Company to timely comply with the requirements of Section 7.11 or 10.1 hereof, which failure is not cured within five (5) Business Days of such failure;
- (d) failure on the part of the Company to observe or perform any covenant contained in Section 7.10 or Article 8 of this Agreement;
- (e) failure on the part of the Company to observe or perform any covenant or agreement contained in any Transaction Agreement (other than those covered by clauses (a), (b), (c), or (d) above) for 30 days from the date of such occurrence;
- (f) the trading in the Common Stock shall have been suspended by the Commission or any National Market (except for any suspension of trading of limited duration solely to permit dissemination of material information regarding the Company and except if, at the time there is any suspension on any National Market, the Common Stock is then listed and approved for trading on another National Market within ten (10) Trading Days thereof);
- (g) failure of the Company to file the Listing Applications when the Company is eligible within twenty (20) Business Days of the Closing Date, which failure is not cured within five (5) Business Days of such failure;

(h) the Company shall have its Common Stock delisted from a National Market for at least ten (10) consecutive Trading Days and is unable to obtain a listing on a National Market within such ten (10) Trading Days;

42

(i) the Registration Statement shall not have been declared effective by the Commission by the Required Effectiveness Date, or such effectiveness shall not be maintained for the Registration Maintenance Period, in each case which results in the Company incurring the Registration Default fee for a period in excess of 10 days;

(j) the Company or any Subsidiary has commenced a voluntary case or other proceeding seeking liquidation, winding-up, reorganization or other relief with respect to itself or its debts under any bankruptcy, insolvency, moratorium or other similar law now or hereafter in effect or seeking the appointment of a trustee, receiver, liquidator, custodian or other similar official of it or any substantial part of its property, or has consented to any such relief or to the appointment of or taking possession by any such official in an involuntary case or other proceeding commenced against it, or has made a general assignment for the benefit of creditors, or has failed generally to pay its debts as they become due, or has taken any corporate action to authorize any of the foregoing;

(k) an involuntary case or other proceeding has been commenced against the Company or any Subsidiary seeking liquidation, winding-up, reorganization or other relief with respect to it or its debts under any bankruptcy, insolvency, moratorium or other similar law now or hereafter in effect or seeking the appointment of a trustee, receiver, liquidator, custodian or other similar official of it or any substantial part of its property, and such involuntary case or other proceeding shall remain undismissed and unstayed for a period of 60 days, or an order for relief has been entered against the Company or any Subsidiary under the federal bankruptcy laws as now or hereafter in effect;

(l) except for the Company's current default in its credit facility as disclosed in footnote 8 to its financial statements for the quarter ended June 30, 2000, default in any provision (including payment) or any agreement governing the terms of any Debt of the Company or any Subsidiary in excess of \$500,000, which has not been cured within any applicable period of grace associated therewith;

(m) judgments or orders for the payment of money which in the aggregate at any one time exceed \$1,000,000 and are not covered by insurance have been rendered against the Company or any Subsidiary by a court of competent jurisdiction and such judgments or orders shall continue unsatisfied and unstayed for a period of 60 days; or

(n) any representation, warranty, certification or statement made by the Company in any Transaction Agreement or which is contained in any certificate, document or financial or other statement furnished at any time under or in connection with any Transaction Agreement shall prove to have been untrue in any material respect when made.

43

then, and in every such occurrence, Purchaser may, with respect to an Event of Default specified in paragraphs (a) or (b), and the Majority Holders may, with respect to any other Event of Default, by notice to the Company, declare the Convertible Debentures to be, and the Convertible Debentures shall thereon become immediately due and payable; PROVIDED that in the case of any of the Events of Default specified in paragraph (j) or (k) above with respect to the Company or any Subsidiary, then, without any notice to the Company or any other act by Purchaser, the entire amount of the Convertible Debentures shall become immediately due and payable, PROVIDED, FURTHER, if any Event of Default has occurred and is continuing, and irrespective of whether any Convertible Debenture has been declared immediately due and payable hereunder, any Purchaser of Convertible Debentures may proceed to protect and enforce the rights of

Purchaser by an action at law, suit in equity or other appropriate proceeding, whether for the specific performance of any agreement contained herein or in any Convertible Debenture, or for an injunction against a violation of any of the terms hereof or thereof, or in aid of the exercise of any power granted hereby or thereby or by law or otherwise, and PROVIDED FURTHER, in the case of any Event of Default, the amount declared due and payable on the Convertible Debentures shall be the redemption price set forth therein.

ARTICLE 12.2 POWERS AND REMEDIES CUMULATIVE . No right or remedy herein conferred upon or reserved to Purchaser is intended to be exclusive of any other right or remedy, and every right and remedy shall, to the extent permitted by law, be cumulative and in addition to every other right and remedy given hereunder or now hereafter existing at law or in equity or otherwise. The assertion or employment of any right or remedy hereunder, or otherwise, shall not prevent the concurrent assertion or employment of any other appropriate right or remedy. Every power and remedy given by the Convertible Debentures or by law may be exercised from time to time, and as often as shall be deemed expedient, by Purchaser.

ARTICLE 13. MISCELLANEOUS

ARTICLE 13.1 NOTICES . All notices, demands and other communications to any party hereunder shall be in writing (including telecopier or similar writing) and shall be given to such party at its address set forth on the signature pages hereof, or such other address as such party may hereafter specify for the purpose to the other parties. Each such notice, demand or other communication shall be effective (i) if given by telecopy, when such telecopy is transmitted to the telecopy number specified on the signature page hereof, the sender has received electronic confirmation of the transmission thereof and the sender has provided contemporaneous telephonic notice to the recipient of such transmission, (ii) if given by mail, four days after such communication is deposited in the United States mail with first class postage prepaid, addressed as aforesaid or (iii) if given by any other means, when delivered at the address specified in or pursuant to this Section. For purposes of telephonic notice to the company in clause (i) above, such telephonic notice shall be to Richard T. Schumacher, Kevin Quinlan or Kathi Benjamin unless the Company notifies the Purchaser of other individuals to whom telephone notice may be

44

directed.

ARTICLE 13.2 NO WAIVERS; AMENDMENTS .

(a) No failure or delay on the part of any party in exercising any right, power or remedy hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any such right, power or remedy preclude any other or further exercise thereof or the exercise of any other right, power or remedy.

(b) Any provision of this Agreement may be amended, supplemented or waived if, but only if, such amendment, supplement or waiver is in writing and is signed by the Company and the Majority Holders; PROVIDED, that without the consent of each holder of any Convertible Debenture affected thereby, an amendment or waiver may not (a) reduce the aggregate principal amount of Convertible Debentures whose holders must consent to an amendment or waiver, (b) reduce the rate or extend the time for payment of interest on any Convertible Debenture, (c) reduce the principal amount of or extend the stated maturity of any Convertible Debenture or (d) make any Convertible Debenture payable in money or property other than as stated in such Convertible Debenture. In determining whether the holders of the requisite principal amount of Convertible Debentures have concurred in any direction, consent, or waiver as provided in any Transaction Agreement, Convertible Debentures which are owned by the Company or any other obligor on or guarantor of the convertible Debentures, or by any Person Controlling, Controlled by, or under common Control with any of the foregoing, shall be disregarded and deemed not to be outstanding for the purpose of any such determination; and PROVIDED FURTHER that no such amendment, supplement or waiver which affects the rights of Purchaser and their affiliates otherwise than solely in their capacities as

holders of Convertible Debentures shall be effective with respect to them without their prior written consent.

ARTICLE 13.3 INDEMNIFICATION .

(a) The Company agrees to indemnify and hold harmless Purchaser, its Affiliates, and each Person, if any, who controls Purchaser, or any of its Affiliates, within the meaning of the Securities Act or the Exchange Act (each, a "Controlling Person"), and the respective partners, agents, employees, officers and Directors of Purchaser, their Affiliates and any such Controlling Person (each a "Purchaser Indemnified Party") and collectively, the "Purchaser Indemnified Parties"), from and against any and all losses, claims, damages, liabilities and expenses (including, without limitation and as incurred, reasonable costs of investigating, preparing or defending any such claim or action, whether or not such Purchaser Indemnified Party is a party thereto, provided that the Company shall not be obligated to advance such costs to any Purchaser Indemnified Party other than Purchaser unless it has received from such Purchaser Indemnified Party an

45

undertaking to repay to the Company the costs so advanced if it should be determined by final judgment of a court of competent jurisdiction that such Purchaser Indemnified Party was not entitled to indemnification hereunder with respect to such costs) which may be incurred by such Purchaser Indemnified Party in connection with any investigative, administrative or judicial proceeding brought or threatened that relates to or arises out of, or is in connection with any activities contemplated by any Transaction Agreement or any other services rendered in connection herewith; PROVIDED that the Company will not be responsible for any claims, liabilities, losses, damages or expenses that are determined by final judgment of a court of competent jurisdiction to result from such Purchaser Indemnified Party's gross negligence, willful misconduct or bad faith.

(b) The Purchaser agrees to indemnify and hold harmless the Company, its Affiliates, and each Person, if any, who controls the Company, or any of its Affiliates, within the meaning of the Securities Act or the Exchange Act (each, a "Controlling Person"), and the respective employees, officers and Directors of the Company (each a "Company Indemnified Party") and collectively, the "Company Indemnified Parties"), from and against any and all losses, claims, damages, liabilities and expenses (including, without limitation and as incurred, reasonable costs of investigating, preparing or defending any such claim or action, whether or not such Company Indemnified Party is a party thereto, provided that the Purchaser shall not be obligated to advance such costs to any Company Indemnified Party other than the Company unless it has received from such Company Indemnified Party an undertaking to repay to the Purchaser the costs so advanced if it should be determined by final judgment of a court of competent jurisdiction that such Company Indemnified Party was not entitled to indemnification hereunder with respect to such costs) which may be incurred by such Company Indemnified Party in connection with any investigative, administrative or judicial proceeding brought or threatened that relates to or arises out of, or is in connection with any activities contemplated by any Transaction Agreement or any other services rendered in connection herewith; PROVIDED that the Purchaser will not be responsible for any claims, liabilities, losses, damages or expenses that are determined by final judgment of a court of competent jurisdiction to result from such Company Indemnified Party's gross negligence, willful misconduct or bad faith.

(c) if any action shall be brought against a Purchaser Indemnified Party or a Company Indemnified Party (each an "Indemnified Party") with respect to which indemnity may be sought against a party under this Agreement, such Indemnified Party shall promptly notify the party or parties from whom indemnification is being claimed (the "Indemnifying Party") in writing and the Indemnifying Party, at its option, may, assume the defense thereof, including the employment of counsel reasonably satisfactory to such Indemnified Party and payment of all reasonable fees and expenses. The failure to so notify the

Indemnifying Party shall not affect any obligations the Indemnifying Party may have to such Indemnified Party under this Agreement or otherwise unless the

46

Indemnifying Party is materially adversely affected by such failure. Such Indemnified Party shall have the right to employ separate counsel in such action and participate in the defense thereof, but the fees and expenses of such counsel shall be at the expense of such Indemnified Party, unless (i) the Indemnifying Party has failed to assume the defense and employ counsel or (ii) the named parties to any such action (including any impleaded parties) include such Indemnified Party and the Indemnifying Party, and such Indemnified Party shall have been advised by counsel that there may be one or more legal defenses available to it which conflict with those available to the Indemnifying Party, in which case, if such Indemnified Party notifies the Indemnifying Party in writing that it elects to employ separate counsel at the expense of the Indemnifying Party, the Indemnifying Party shall not have the right to assume the defense of such action or proceeding on behalf of such Indemnified Party, PROVIDED, HOWEVER, that the Indemnifying Party shall not, in connection with any one such action or proceeding or separate but substantially similar or related actions or proceedings in the same jurisdiction arising out of the same general allegations or circumstances, be responsible hereunder for the reasonable fees and expenses of more than one such firm of separate counsel, in addition to any local counsel, which counsel shall be designated by the Indemnified Party. The Indemnifying Party shall not be liable for any settlement of any such action effected without the written consent of the Indemnifying Party (which shall not be unreasonably withheld) and the Indemnifying Party agrees to indemnify and hold harmless each Indemnified Party from and against any loss or liability by reason of settlement of any action effected with the consent of the Indemnifying Party. In addition, the Indemnifying Party will not, without the prior written consent of the Indemnified Party, settle or compromise or consent to the entry of any judgment in or otherwise seek to terminate any pending or threatened action, claim, suit or proceeding in respect to which indemnification may be sought hereunder (whether or not any Indemnified Party is a party thereto) unless such settlement, compromise, consent or termination includes an express unconditional release of the Indemnified Party and the other Indemnified Parties, satisfactory in form and substance to the Indemnified Party, from all liability arising out of such action, claim, suit or proceeding.

(d) The indemnification and expense reimbursement obligations set forth in this Section 13.3 shall be in addition to any liability any Indemnifying Party may have to any Indemnified Party at common law or otherwise; (ii) shall survive the termination of this Agreement and the other Transaction Agreements and the payment in full of the Convertible Debentures and (iii) shall remain operative and in full force and effect regardless of any investigation made by or on behalf of Purchaser or the Company or any other Indemnified Party.

ARTICLE 13.4 EXPENSES: DOCUMENTARY TAXES . Each of the Company and the Purchaser agrees to pay to its own fees and expenses in connection with the negotiation and preparation of the Transaction Agreements, relevant due diligence, and fees and disbursements of

47

legal counsel. In addition, the Company agrees to pay any and all stamp, transfer and other similar taxes, assessments or charges payable in connection with the execution and delivery of any Transaction Agreement or the issuance of the Securities to Purchaser, excluding their assigns.

ARTICLE 13.5 PAYMENT . The Company agrees that, so long as Purchaser shall own any Convertible Debentures purchased by it from the Company hereunder, the Company will make payments to Purchaser of all amounts due thereon by wire transfer by 4:00 P.M. (E.S.T.).

ARTICLE 13.6 SUCCESSORS AND ASSIGNS . This Agreement shall be binding upon the Company and upon Purchaser and its respective successors and assigns. So long as the Convertible Debentures remain outstanding, the Company shall not assign or otherwise transfer its rights or obligations under this Agreement to any other Person without the prior written consent of the Majority Holders. All provisions hereunder purporting to give rights to Purchaser and its affiliates or to holders of Securities are for the express benefit of such Persons and their successors and assigns.

ARTICLE 13.7 BROKERS . The Company represents and warrants that it has not employed any broker, finder, financial advisor or investment banker who would be entitled to any brokerage, finder's or other fee or commission payable by the Company or Purchaser in connection with the sale of the Securities. Purchaser represents and warrants that it has not employed any other broker, finder, financial advisor or investment banker who would be entitled to any brokerage, finder's or other fee or commission payable by the Company in connection with the sale of the Securities.

ARTICLE 13.8 MASSACHUSETTS LAW; SUBMISSION TO JURISDICTION; WAIVER OF JURY TRIAL; APPOINTMENT OF AGENT . THIS AGREEMENT SHALL BE CONSTRUED IN ACCORDANCE WITH AND GOVERNED BY THE LAWS OF THE STATE OF MASSACHUSETTS. EACH PARTY HERETO HEREBY SUBMITS TO THE EXCLUSIVE JURISDICTION OF THE UNITED STATES DISTRICT COURT FOR THE STATE OF MASSACHUSETTS AND OF ANY FEDERAL DISTRICT COURT SITTING IN BOSTON, MASSACHUSETTS FOR PURPOSES OF ALL LEGAL PROCEEDINGS ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY. EACH PARTY HERETO IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY LAW, ANY OBJECTION WHICH IT MAY NOW OR HEREAFTER HAVE TO THE LAYING OF THE VENUE OF ANY SUCH PROCEEDING BROUGHT IN SUCH A COURT AND ANY CLAIM THAT ANY SUCH PROCEEDING BROUGHT IN SUCH A COURT HAS BEEN BROUGHT IN AN INCONVENIENT FORUM. EACH PARTY TO THIS AGREEMENT IRREVOCABLY CONSENTS TO THE SERVICE OF PROCESS IN ANY SUCH PROCEEDING BY THE MAILING OF COPIES THEREOF BY REGISTERED OR CERTIFIED MAIL, POSTAGE PREPAID, TO SUCH PARTY AT ITS ADDRESS SET FORTH HEREIN. NOTHING HEREIN SHALL AFFECT THE RIGHT OF

48

ANY PARTY TO SERVE PROCESS IN ANY OTHER MANNER PERMITTED BY LAW. EACH PARTY WAIVES ITS RIGHT TO A TRIAL BY JURY.

ARTICLE 13.9 ENTIRE AGREEMENT . This Agreement, the Exhibits or Schedules hereto, which include, but are not limited to the Convertible Debenture, the Warrant and the Registration Rights Agreement, set forth the entire agreement and understanding of the parties relating to the subject matter hereof and supercedes all prior and contemporaneous agreements, negotiations and understandings between the parties, both oral and written relating to the subject matter hereof. The terms and conditions of all Exhibits and Schedules to this Agreement are incorporated herein by this reference and shall constitute part of this Agreement as is fully set forth herein.

ARTICLE 13.10 SURVIVAL; SEVERABILITY. The representations, warranties, covenants and agreements of the parties hereto shall survive the Closing hereunder. In the event that any provision of this Agreement becomes or is declared by a court of competent jurisdiction to be illegal, unenforceable or void, this Agreement shall continue in full force and effect without said provision; provided that such severability shall be ineffective if it materially changes the economic benefit of this Agreement to any party.

ARTICLE 13.11 TITLE AND SUBTITLES . The titles and subtitles used in this Agreement are used for convenience only and are not to be considered in construing or interpreting this Agreement.

ARTICLE 13.12 REPORTING ENTITY FOR THE COMMON STOCK. The reporting entity relied upon for the determination of the trading price or trading volume of the Common Stock on any given Trading Day for the purposes of this Agreement and all Exhibits shall be Bloomberg, L.P. or any successor thereto. The written mutual consent of the Purchaser and the Company shall be required to employ any other reporting entity.

ARTICLE 13.13 PUBLICITY. The Company and the Purchaser shall consult with each other in issuing any press releases or otherwise making public statements with respect to the transactions contemplated hereby and no party shall issue any

such press release or otherwise make any such public statement without the prior written consent of the other parties, which consent shall not be unreasonably withheld or delayed, except that no prior consent shall be required if such disclosure is required by law, in which such case the disclosing party shall provide the other parties with prior notice of such public statement. Notwithstanding the foregoing, the Company shall not publicly disclose the name of Purchaser without the prior written consent of Purchaser, except to the extent required by law, in which case the Company shall provide Purchaser with prior written notice of such public disclosure.

[SIGNATURE PAGE FOLLOWS]

49

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed by their respective authorized officers, as of the date first above written.

BOSTON BIOMEDICA, INC.

By: /s/ Kevin W. Quinlan
Name: Kevin W. Quinlan
Title: President

Address: Boston Biomedica, Inc.
375 West Street
West Bridgewater, MA 02379

SHORELINE MICRO-CAP FUND, L.P.

By: /s/ Richard P. Kiphart
Name: Richard P. Kiphart
Title: Partner

Address: c/o William Blair & Company
222 West Adams Street
Chicago, IL 60606

/s/ Richard P. Kiphart
Name: Richard P. Kiphart

50

Boston Biomedica Completes Private Placement of \$3 Million of
Convertible Debentures September 5, 2000 09:17 AM Eastern Time

WEST BRIDGEWATER, Mass., Sept. 5 /PRNewswire/ -- Boston Biomedica, Inc. BBII announced today the completion of a private placement of \$3 million in Convertible Debentures to the GCA Strategic Investment Fund Limited, managed exclusively by Global Capital Advisors, Ltd. of Cumming, GA, the Shoreline Micro-Cap Fund of Northbrook, IL, and a related individual. The transaction was facilitated by Wharton Capital, a N.Y. based financial consulting firm and DP Securities, Inc. of San Diego, CA.

The Convertible Debentures mature on August 25, 2003 and carry an interest rate of 3% per annum. Commencing in 90 days, they are convertible into the common stock of Boston Biomedica at any time during the remaining part of the three-year period at a price equal to the lesser of \$3.36 per share or 90% of the market price of the common stock at the time of conversion. BBI has the right to redeem the Convertible Debentures at any time. Boston Biomedica will use the proceeds from the issuance and sale of the Convertible Debentures for completion of the upgrade to its manufacturing facility in West Bridgewater, MA, to fund pressure cycling technology (PCT) research and development, and for general corporate and working capital purposes. In connection with the sale of the Convertible Debentures, Boston Biomedica issued warrants to purchase 135,556 shares of common stock at an exercise price of \$3.60. The warrants expire on August 25, 2005.

Global Capital Advisors Ltd. is a professional investment management firm managing a family of funds, including the GCA Strategic Investment Fund, which specializes in "direct investment" financing for small-cap and micro-cap companies in the public and private markets. The Shoreline Micro-Cap Fund looks to invest in small-cap and micro-cap companies that they feel are undervalued but possess significant potential for upside growth. Shoreline Micro-Cap Fund reviewed several thousand opportunities before deciding to include Boston Biomedica in their Fund's portfolio.

"We believe that the fundamental growth potential for Boston Biomedica's core business is very strong, as is the Company's ability to exploit its current R&D technologies," said Brad A. Thompson, Chief Financial Analyst, GCA. "The market potential for BBI's PCT technology is extremely exciting, given the enormous ramifications it has for medical applications, as well as those in other fields. Further, we fully expect that BBI's continued interest in Panacos Pharmaceuticals will lead to significant long-term gains for the Company. Given all this, we feel that BBI is currently undervalued in the market, and well positioned to significantly enhance shareholder value in the future."

"This investment represents a major step forward in our plans to recapitalize Boston Biomedica and refocus our efforts on our historically successful core diagnostics business, as we concomitantly step up the external funding of our PCT and drug discovery (Panacos

Pharmaceuticals) programs," said Richard T. Schumacher, Founder, CEO, and Chairman of Boston Biomedica. "We expect to announce partnerships with important academic and commercial groups in the areas of PCT and drug discovery, as well as the refinancing of our current line-of-credit with a new lender, in the coming weeks and months. And we have already taken important steps to refocus our efforts in our quality control and clinical laboratory areas, which we are optimistic will lead to greater growth and profitability as we move forward into 2001. Our ultimate goal is a return to profitability in the near future."

Boston Biomedica, Inc. provides products and services for the detection and treatment of infectious diseases (ID) such as AIDS, Lyme Disease, and Viral Hepatitis. The Company has four business units: (1) BBI Diagnostics, an ISO 9001 certified manufacturer and seller of quality control and other diagnostic products used to increase the accuracy of in-vitro diagnostic tests, (2) BBI Clinical Laboratories, a leading specialty infectious diseases testing laboratory, (3) BBI Biotech Research Laboratories, providing R&D support for the other BBI business units as well as contract research services for third parties, and (4) BBI Source Scientific, an ISO 9001 certified manufacturer of

laboratory and diagnostic instrumentation. In addition, the Company is pursuing research and development programs in the areas of Pressure Cycling Technology (PCT) and drug discovery through its subsidiaries BBI BioSeq and Panacos Pharmaceuticals, respectively, with the goal of introducing new solutions for the detection and treatment of infectious diseases.

Statements contained in this news release that state the Company's or management's intentions, hopes, beliefs, expectations or predictions of the future are "forward-looking" statements. It is important to note that the Company's actual results could differ materially from those projected in such forward-looking statements. Factors that could cause actual results to differ from those projected include the possibility that the Company may not be able to refinance its debt with a new lender, that the Company may not be successful in selling a majority interest in Panacos Pharmaceuticals to an independent group, that the Company may not be successful in funding a majority of PCT R&D through partnerships and grants, or that the Company may not be successful in returning to profitability in the near future. Additional information concerning factors that could cause actual results to differ materially from those in the forward-looking statements is contained from time to time in the Company's SEC filings, including but not limited to the Company's report on Form 10-K for the year ended December 31, 1999 and on Form 10-Q for the periods ended March 31 and June 30, 2000. Copies of these documents may be obtained by contacting the Company or the SEC.

Visit us at our website <http://www.bbii.com>

Please email us at IR@bbii.com if you prefer to receive future announcements electronically

SOURCE Boston Biomedica, Inc.