

**UNITED STATES
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): November 2, 2019

PIERIS PHARMACEUTICALS, INC.
(Exact Name of Registrant as Specified in its Charter)

Nevada
(State or other jurisdiction of
Incorporation)

001-37471
(Commission
File Number)

EIN 30-0784346
(IRS Employer
Identification No.)

225 State Street, 9th Floor
Boston, MA **02109**
(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: 857-246-8998
N/A
(Former name or former address, if changed since last report.)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

<u>Title of each class</u>	<u>Trading Symbol(s)</u>	<u>Name of each exchange on which registered</u>
Common Stock, \$0.001 par value per share	PIRS	The Nasdaq Capital Market

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (17 CFR §230.405) or Rule 12b-2 of the Securities Exchange Act of 1934 (17 CFR §240.12b-2).

Emerging Growth Company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Item 1.01 Entry into Material Definitive Agreement.

On November 2, 2019, Pieris Pharmaceuticals, Inc. (the “Company”) entered into a securities purchase agreement for a private placement (the “Purchase Agreement”) with a select group of institutional investors, including lead investor BVF Inc. and its affiliates (“BVF”) as well as existing and new investors (the “Investors”). BVF is a more than 5% stockholder of the Company, holding shares of common stock, Series A Preferred Stock, Series B Preferred Stock and warrants to purchase shares of common stock.

William Blair & Company, L.L.C. acted as sole placement agent in connection with the private placement. The private placement consists of 9,014,960 units, at a price of \$3.55 per unit (the “Financing”), for gross proceeds of approximately \$32.0 million, and net proceeds to the Company of approximately \$31.1 million, after deducting placement agent fees and estimated offering expenses payable by the Company. Each unit consists of (i) one share of the Company’s common stock (the “Common Shares”) or 0.001 shares of non-voting Series C convertible preferred stock (the “Series C Preferred Shares,” and together with the Common Shares, the “Shares”), and (ii) one immediately-exercisable warrant to purchase one share of the Company’s common stock with an exercise price of \$7.10 (the “Exercise Price”). The closing of the financing is expected to take place on or about November 6, 2019, and is subject to customary closing conditions.

If (i) the initial public disclosure of the Phase 2a Study of PRS-060/AZD1402 that includes the “p” value achieved for the primary endpoint of such study reveals top-line data on the primary efficacy endpoint in the Phase 2a Study with a “p” value below 0.05 (i.e., $p < 0.05$) in at least one dose level; and (ii) the 10-day volume weighted average stock price commencing on the trading day immediately after the initial data disclosure is at least three percent more than the Exercise Price, then the warrants will be exercisable for a period of 60 days from the date of the initial data disclosure and may only be exercised for cash. Otherwise, the warrants will be exercisable for a period of five years from the date of issuance.

Each Preferred Share is convertible into 1,000 shares of the Company’s common stock. The Company will not undertake any conversion of the Series C Preferred Shares, and a stockholder shall not have the right to convert any portion of the Series C Preferred Shares, to the extent that, after giving effect to the conversion such stockholder would beneficially own in excess of 9.99% of the number of shares of the Company’s common stock outstanding immediately after giving effect to such conversion. The Series C Preferred Shares will have no voting rights, except as required by law and except that the consent of holders of a majority of the then outstanding Series C Preferred Stock is required to amend the terms of the Series C Certificate of Designation. The Series C Preferred Shares are entitled to receive dividends on a *pari passu* basis with the Company’s common stock, when, and if declared. In any liquidation or dissolution of the Company, the Series C Preferred Shares rank senior to the Company’s common stock in the distribution of assets, to the extent legally available for distribution.

The Company also entered into a registration rights agreement (the “Registration Rights Agreement”) with the Investors on November 2, 2019 requiring the Company to register the resale of the Shares and the Company’s common stock underlying the Series C Preferred Shares and warrants. The Company is required to prepare and file a registration statement with the Securities and Exchange Commission within 30 days of the closing, and to use commercially reasonable efforts to have the registration statement declared effective within 90 days if there is no review by the Securities and Exchange Commission, and within 120 days in the event of such review.

The Shares and the warrants were offered and will be issued and sold in reliance upon the exemption from the registration requirements of the Securities Act of 1933, as amended (the “Securities Act”), set forth under Section 4(a)(2) of the Securities Act relating to sales by an issuer not involving any public offering and in reliance on similar exemptions under applicable state laws. Each Investor represented that it is an accredited investor and that it is acquiring the Shares and the warrants for investment purposes only and not with a view to any resale, distribution or other disposition of such securities in violation of the United States federal securities laws. Neither this Current Report on Form 8-K, nor the exhibits attached hereto is an offer to sell or the solicitation of an offer to buy the securities described herein.

The Company expects to use the proceeds from the financing for continued development of its immuno-oncology franchise, including PRS-343, its 4-1BB/HER2 bispecific and PRS-344, its 4-1BB/PD-L1 bispecific in co-development with Servier. The Company also expects to use these proceeds for advancement of its proprietary pipeline of inhalable respiratory drug candidates following proof-of-mechanism with respect to PRS-060, validating the inhaled Anticalin platform as a potential drug class, and working capital and general corporate purposes.

The above description of the material terms of the offering does not purport to be complete and is qualified in its entirety by reference to the Purchase Agreement attached hereto as Exhibit 10.1, the Form of Warrant attached hereto as Exhibit 10.2 and the Registration Rights Agreement attached hereto as Exhibit 10.3. The representations, warranties and covenants made by the Company in the Purchase Agreement were made solely for the benefit of the parties to the Purchase Agreement, including, in

some cases, for the purpose of allocating risk among the parties thereto, and should not be deemed to be a representation, warranty or covenant to investors. Moreover, such representations, warranties or covenants were made as of November 2, 2019. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of the Company's affairs.

Item 3.02 Unregistered Sales of Equity Securities.

The disclosure required by this Item and included in Items 1.01 and 5.03 of this Current Report on Form 8-K (this "Current Report") is incorporated herein by reference.

Item 3.03. Material Modification to Rights of Security Holders.

The disclosure required by this Item and included in Item 5.03 of this Current Report is incorporated herein by reference.

Item 5.03. Amendments to Articles of Incorporation or Bylaws; Change in Fiscal Year.

In connection with the private placement, on November 4, 2019, the Company plans to designate 3,522 shares of its authorized and unissued preferred stock as Series C Preferred Stock and filed a Certificate of Designation of Series C Convertible Preferred Stock of Pieris Pharmaceuticals, Inc. (the "Series C Certificate of Designation") with the Nevada Secretary of State.

Each share of Series C Preferred Stock is convertible into 1,000 shares of Common Stock (subject to adjustment as provided in the Series C Certificate of Designation) at any time at the option of the holder, provided that the holder is prohibited from converting the Series C Preferred Stock into shares of Common Stock if, as a result of such conversion, the holder, together with its affiliates, would own more than 9.99% of the total number of shares of Common Stock then issued and outstanding, (the "Beneficial Ownership Limitation"), provided that the holder may reset the Beneficial Ownership Limitation to a higher or lower number (not to exceed 19.99% of the total number of Common Shares issued and outstanding immediately after giving effect to a conversion) upon providing written notice to the Company. Any such notice providing for an increase to the Beneficial Ownership Limitation will be effective 61 days after delivery to the Company. In the event of the Company's liquidation, dissolution, or winding up, subject to the rights of holders of Senior Securities (defined below), holders of Series C Preferred Stock are entitled to receive a payment equal to \$0.001 per share of Series C Preferred Stock before any proceeds are distributed to the holders of Common Stock and Junior Securities (defined below) and *pari passu* with any distributions to the holders of the Series A Preferred Stock and Series B Preferred Stock, plus an additional amount equal to any dividends declared but unpaid on such shares. However, if the assets of the Company are insufficient to comply with the preceding sentence, then all remaining assets of the Company shall be distributed ratably to holders of the shares of the Series C Preferred Stock and Parity Securities (defined below). Shares of Series C Preferred Stock generally have no voting rights, except as required by law and except that the consent of holders of a majority of the then outstanding Series C Preferred Stock is required to amend the terms of the Series C Certificate of Designation. Holders of Series C Preferred Stock are entitled to receive any dividends payable to holders of Common Stock, and rank:

- senior to all of the Common Stock;
- senior to any class or series of capital stock of the Company created after the designation of the Series C Preferred Stock specifically ranking by its terms junior to the Series C Preferred Stock (the "Junior Securities");
- on parity with all shares of Series A Preferred Stock and Series B Preferred Stock and any class or series of capital stock of the Company created after the designation of the Series C Preferred Stock specifically ranking by its terms on parity with the Series C Preferred Stock (the "Parity Securities"); and
- junior to any class or series of capital stock of the Company created after the designation of the Series C Preferred Stock specifically ranking by its terms senior to the Series C Preferred Stock (the "Senior Securities");

in each case, as to distributions of assets upon the Company's liquidation, dissolution or winding up whether voluntarily or involuntarily and/or the right to receive dividends.

The foregoing description of the Series C Preferred Stock does not purport to be complete and is qualified by reference to the Series C Certificate of Designation, a copy of which is filed as Exhibit 3.1 to this Current Report and is incorporated herein by reference.

Item 8.01 Other Events.

On November 4, 2019, the Company issued a press release announcing the Financing. The full text of the press release issued in connection with the announcement for the Financing is attached as Exhibit 99.1 to this Form 8-K and is incorporated herein by reference.

Neither the filing of the press release as an exhibit to this Current Report on Form 8-K nor the inclusion in the press release of a reference to the Company's internet address shall, under any circumstances, be deemed to incorporate the information available at its internet address into this Current Report on Form 8-K. The information available at the Company's internet address is not part of this Current Report on Form 8-K or any other report filed by the Company with the SEC.

Item 9.01 Financial Statements and Exhibits

<u>Exhibit No.</u>	<u>Description</u>
3.1	Certificate of Designation of Series C Convertible Preferred Stock
10.1	Securities Purchase Agreement, dated November 2, 2019, by and among the Company and the Investors named therein
10.2	Form of Warrant to purchase Common Stock
10.3	Registration Rights Agreement, dated November 2, 2019, by and among the Company and the Investors named therein
99.1	Press Release of Pieris Pharmaceuticals, Inc., dated November 4, 2019.

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.

PIERIS PHARMACEUTICALS, INC.

Dated: November 4, 2019

/s/ Tom Bures

Tom Bures

Vice President, Finance

**CERTIFICATE OF DESIGNATION OF
SERIES C CONVERTIBLE PREFERRED STOCK
OF
PIERIS PHARMACEUTICALS, INC.**

Pieris Pharmaceuticals, Inc., a Nevada corporation (the "**Corporation**"), in accordance with the provisions of Nevada Revised Statutes ("**NRS**") 78.195 and 78.1955, does hereby certify that, pursuant to the authority conferred upon the board of directors of the Corporation (the "**Board of Directors**") by the Corporation's articles of incorporation, as heretofore amended to date (the "**Articles of Incorporation**"), the Board of Directors has, by a resolution duly adopted pursuant thereto, established a series of the Corporation's preferred stock consisting of 3,522 shares of the Corporation's preferred stock, par value \$0.001 per share, designated as "Series C Convertible Preferred Stock" and having the voting powers, designations, preferences, privileges, limitations, restrictions and relative rights set forth as follows, in addition to any provisions of the Articles of Incorporation applicable to all classes and series of Preferred Stock (all capitalized terms used but not defined herein shall have the meanings set forth in the Articles of Incorporation):

Section 1. **Definitions.** For the purposes hereof, the following terms shall have the following meanings:

"**Affiliate**" means any person or entity that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a person or entity, as such terms are used in and construed under Rule 144 under the Securities Act. With respect to a Holder, any investment fund or managed account that is managed on a discretionary basis by the same investment manager as such Holder will be deemed to be an Affiliate of such Holder.

"**Business Day**" means any day except Saturday, Sunday, any day which shall be a federal legal holiday in the United States or any day on which banking institutions in the State of New York are authorized or required by law or other governmental action to close.

"**Closing Sale Price**" means, for any security as of any date, the last closing trade price for such security prior to 4:00 p.m., New York City time, on the principal securities exchange or trading market where such security is listed or traded, as reported by Bloomberg, L.P. (or an equivalent, reliable reporting service mutually acceptable to and hereafter designated by Holders of a majority of the then-outstanding Series C Preferred Stock and the Corporation), or if the foregoing do not apply, the last trade price of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg, L.P., or, if no last trade price is reported for such security by Bloomberg, L.P., the average of the bid prices of any market makers for such security as reported on the OTC Pink Market by OTC Markets Group, Inc. If the Closing Sale Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Closing Sale Price of such security on such date shall be the fair market value as determined in good faith by the Board of Directors of the Corporation.

"**Commission**" means the Securities and Exchange Commission.

"**Common Stock**" means the Corporation's common stock, par value \$0.001 per share, and stock of any other class of securities into which such securities may hereafter be reclassified or changed into.

"**Conversion Ratio**" means 1,000 shares of Common Stock issuable upon conversion of every one share of Series C Preferred Stock, as such 1000:1 ratio may be adjusted from time to time in accordance with Section 7.

"**Conversion Shares**" means, collectively, the shares of Common Stock issuable upon conversion of the shares of Series C Preferred Stock in accordance with the terms hereof.

"**Exchange Act**" means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

"**Holder**" means any holder of Series C Preferred Stock.

“Issuance Date” means the date of the “Closing” as defined in that certain Securities Purchase Agreement, dated November 2, 2019, by and among the Corporation and the “Purchasers” named therein.

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

“Securities Act” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

“Trading Day” means a day on which the Common Stock is traded for any period on the principal securities exchange or if the Common Stock is not traded on a principal securities exchange, on a day that the Common Stock is traded on another securities market on which the Common Stock is then being traded.

Section 2. Designation, Amount and Par Value; Assignment.

(a) The series of preferred stock designated by this Certificate of Designation shall be designated as the Corporation’s Series C Convertible Preferred Stock (the **“Series C Preferred Stock”**) and the number of shares so designated shall be 3,522 (which shall not be subject to increase except pursuant to an amendment to this Certificate of Designation duly adopted in accordance with the applicable law and the written consent of the Holders of a majority of the issued and outstanding Series C Preferred Stock). Each share of Series C Preferred Stock shall have a par value of \$0.001 per share.

(b) The Corporation shall register shares of the Series C Preferred Stock in the name of the Holders thereof from time to time upon records to be maintained by the Corporation for that purpose (the **“Series C Preferred Stock Register”**). The Series C Preferred Stock shall be issued in book entry only, provided that the Corporation shall issue one or more certificates representing shares of Series C Preferred Stock, to the extent such issuance is requested by a given Holder. References herein to certificates representing the Series C Preferred Stock shall apply only if such shares have been issued in certificated form. The Corporation may deem and treat the registered Holder of shares of Series C Preferred Stock as the absolute owner thereof for the purpose of any conversion thereof and for all other purposes. The Corporation shall register the transfer of any shares of Series C Preferred Stock in the Series C Preferred Stock Register, upon surrender of the certificates evidencing such shares to be transferred, duly endorsed by the Holder thereof, to the Corporation at its address specified herein. Upon any such registration or transfer, a new certificate evidencing the shares of Series C Preferred Stock so transferred shall be issued to the transferee (if requested) and a new certificate evidencing the remaining portion of the shares not so transferred, if any, shall be issued to the transferring Holder, in each case, within three Business Days. The provisions of this Certificate of Designation are intended to be for the benefit of all Holders from time to time and shall be enforceable by any such Holder.

Section 3. Dividends. Holders be entitled to receive when, as and if dividends are declared and paid on the Corporation’s Common Stock, an equivalent dividend (with the same dividend declaration date and payment date), calculated on an as-converted basis. Other than the foregoing, the Holders of Series C Preferred Stock shall not be entitled to receive any dividends in respect of the Series C Preferred Stock, unless and until specifically declared by the Board of Directors of the Corporation to be payable to the Holders of the Series C Preferred Stock.

Section 4. Voting Rights. Except as otherwise provided herein or as otherwise required by the NRS, the Series C Preferred Stock shall have no voting rights. However, as long as any shares of Series C Preferred Stock are outstanding, the Corporation shall not, without the affirmative vote of the Holders of a majority of the then outstanding shares of the Series C Preferred Stock, (a) alter or change adversely the powers, preferences or rights given to the Series C Preferred Stock or alter or amend this Certificate of Designation, (b) increase the number of authorized shares of Series C Preferred Stock, or (c) enter into any agreement with respect to any of the foregoing.

Section 5. Rank; Liquidation.

(a) The Series C Preferred Stock shall rank (i) senior to the Common Stock, and (ii) senior to any

class or series of capital stock of the Corporation hereafter created specifically ranking by its terms junior to any

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2

Series C Preferred Stock (“**Junior Securities**”); (iii) on parity with all shares of the Corporation’s Series A Convertible Preferred Stock and Series B Convertible Preferred Stock; (iv) on parity with any other class or series of capital stock of the Corporation hereafter created specifically ranking by its terms on parity with the Series C Preferred Stock (together with the Corporation’s Series A Convertible Preferred Stock and Series B Convertible Preferred Stock, the “**Parity Securities**”); and (v) junior to any class or series of capital stock of the Corporation hereafter created specifically ranking by its terms senior to any Series C Preferred Stock (“**Senior Securities**”), in each case, as to distributions of assets upon liquidation, dissolution or winding up of the Corporation, whether voluntarily or involuntarily.

(b) Subject to the prior and superior rights of the holders of any Senior Securities of the Corporation, upon liquidation, dissolution or winding up of the Corporation, whether voluntary or involuntary, each Holder shall be entitled to receive, in preference to any distributions of any of the assets or surplus funds of the Corporation to the holders of the Common Stock and Junior Securities and *pari passu* with any distribution to the holders of Parity Securities, an amount equal to \$0.001 per share of Series C Preferred Stock, plus an additional amount equal to any dividends declared but unpaid on such shares, before any payments shall be made or any assets distributed to holders of any class of Common Stock or Junior Securities; *provided, however*, if that if the amount payable on a per-share basis to the holders of Common Stock on any such liquidation, dissolution or winding up of the Corporation shall be greater than the foregoing liquidation preference that is payable to the holders of the Series C Preferred Stock, then the holders of Series C Preferred Stock shall instead receive, on an per-share and as-converted basis, the same assets or surplus funds that is to be distributed to the holders of Common Stock. If, upon any such liquidation, dissolution or winding up of the Corporation, the assets of the Corporation shall be insufficient to pay the holders of shares of the Series C Preferred Stock the amount required under the preceding sentence, then all remaining assets of the Corporation shall be distributed ratably to holders of the shares of the Series C Preferred Stock and Parity Securities.

Section 6. Conversion.

(a) Conversions at Option of Holder. Each whole share of Series C Preferred Stock shall be convertible, at any time and from time to time from and after the Issuance Date, at the option of the Holder thereof, into a number of shares of Common Stock equal to the Conversion Ratio, as adjusted from time to time pursuant to Section 7. Holders shall effect conversions by providing the Corporation with the form of conversion notice attached hereto as Annex A (a “**Notice of Conversion**”), duly completed and executed. Other than a conversion following a Fundamental Transaction or following a notice provided for under Section 7(d)(ii) hereof, the Notice of Conversion must specify at least a number of shares of Series C Preferred Stock to be converted equal to the lesser of (x) 100 shares (such number subject to appropriate adjustment following the occurrence of an event specified in Section 7(a) hereof) and (y) the number of shares of Series C Preferred Stock then held by the Holder. Provided the Corporation’s transfer agent is participating in the Depository Trust Company (“**DTC**”) Fast Automated Securities Transfer program, the Notice of Conversion may specify, at the Holder’s election, whether the applicable Conversion Shares shall be credited to the account of the Holder’s prime broker with DTC through its Deposit Withdrawal Agent Commission system (a “**DWAC Delivery**”). The “**Conversion Date**”, or the date on which a conversion shall be deemed effective, is defined as the Trading Day that the Notice of Conversion, completed and executed, is sent by facsimile to, and received during regular business hours by, the Corporation; provided that if such shares of Series C Preferred Stock were issued in certificated form, then the original certificate(s) representing such shares of Series C Preferred Stock being converted, duly endorsed, and the accompanying Notice of Conversion, are received by the Corporation within two Trading Days thereafter. In all other cases, the Conversion Date shall be defined as the Trading Day on which the original certificates (if any) representing the shares of Series C Preferred Stock being converted, duly endorsed, and the accompanying Notice of Conversion, are received by the Corporation. The calculations set forth in the Notice of Conversion shall control in the absence of manifest or mathematical error.

(b) Beneficial Ownership Limitation. Notwithstanding anything in this Certificate of Designation to the contrary, the Corporation shall not effect any conversion of the Series C Preferred Stock, and a Holder shall not have the right to convert any portion of the Series C Preferred Stock, to the extent that, after giving effect to an attempted conversion set forth on an applicable Notice of Conversion, such Holder (together with such Holder’s Affiliates, and any other Person whose beneficial ownership of Common Stock would be aggregated with the Holder’s for purposes of Section 13(d) of the Exchange Act and the applicable regulations of the Commission,

including any "group" of which the Holder is a member) would beneficially own a number of shares of Common

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3

Stock in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by such Holder and its Affiliates shall include the number of shares of Common Stock issuable upon conversion of the Series C Preferred Stock subject to the Notice of Conversion with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which are issuable upon (A) conversion of the remaining, unconverted Series C Preferred Stock beneficially owned by such Holder or any of its Affiliates, and (B) exercise or conversion of the unexercised or unconverted portion of any other securities of the Corporation (including any warrants) beneficially owned by such Holder or any of its Affiliates that are subject to a limitation on conversion or exercise similar to the limitation contained herein. Except as set forth in the preceding sentence, for purposes of this Section 6(b), beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the applicable regulations of the Commission. In addition, for purposes hereof, "group" has the meaning set forth in Section 13(d) of the Exchange Act and the applicable regulations of the Commission. For purposes of this Section 6(b), it is understood that the number of shares of Common Stock beneficially owned by each Holder shall be aggregated with each other Holder for purposes of Section 13(d) of the Exchange Act. For purposes of this Section 6(b), in determining the number of outstanding shares of Common Stock, absent actual knowledge of such Holder to the contrary, a Holder may rely on the number of outstanding shares of Common Stock as stated in the most recent of the following: (A) the Corporation's most recent periodic or annual filing with the Commission, as the case may be, (B) a more recent public announcement by the Corporation that is filed with the Commission, or (C) a more recent notice by the Corporation or the Corporation's transfer agent to the Holder setting forth the number of shares of Common Stock then outstanding. Upon the written request of a Holder (which may be by email), the Corporation shall, within three Trading Days thereof, confirm in writing to such Holder (which may be via email) the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to any actual conversion or exercise of securities of the Corporation, including shares of Series C Preferred Stock, by such Holder or its Affiliates since the date as of which such number of outstanding shares of Common Stock was last publicly reported or confirmed to the Holder. The initial "**Beneficial Ownership Limitation**" shall be 9.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock pursuant to such Notice of Conversion (to the extent permitted pursuant to this Section 6(b)). By written notice to the Corporation, which will not be effective until the 61st day after such notice is delivered to the Corporation, a Holder may increase or decrease the Beneficial Ownership Limitation applicable solely to such Holder to such other percentage limit as may be determined by the Holder, not to exceed 19.99%, provided that any increase in the Beneficial Ownership Limitation shall not be effective until the 61st day after such notice is delivered to the Corporation. The Corporation shall be entitled to rely on representations made to it by the Holder in any Notice of Conversion regarding its Beneficial Ownership Limitation.

(c) Mechanics of Conversion

(i) Delivery of Certificate or Electronic Issuance Upon Conversion. Not later than two Trading Days after the applicable Conversion Date, or if the Holder requests the issuance of physical certificate(s), two Trading Days after receipt by the Corporation of the original certificate(s) representing such shares of Series C Preferred Stock being converted, duly endorsed, and the accompanying Notice of Conversion (the "**Share Delivery Date**"), the Corporation shall: (a) deliver, or cause to be delivered, to the converting Holder a physical certificate or certificates representing the number of Conversion Shares being acquired upon the conversion of shares of Series C Preferred Stock, or (b) in the case of a DWAC Delivery, electronically transfer such Conversion Shares by crediting the account of the Holder's prime broker with DTC through its DWAC system. If in the case of any Notice of Conversion such certificate or certificates are not delivered to or as directed by or, in the case of a DWAC Delivery, such shares are not electronically delivered to or as directed by, the applicable Holder by the Share Delivery Date, the applicable Holder shall be entitled to elect to rescind such Conversion Notice by written notice to the Corporation at any time on or before its receipt of such certificate or certificates for Conversion Shares or electronic receipt of such shares, as applicable, in which event the Corporation shall promptly return to such Holder any original Series C Preferred Stock certificate delivered to the Corporation and such Holder shall promptly return to the Corporation any Common Stock certificates or otherwise direct the return of any shares of Common Stock delivered to the Holder through the DWAC system, representing the shares of Series C Preferred Stock unsuccessfully tendered for conversion to the Corporation.

(ii) Obligation Absolute. Subject to Section 6(b) hereof and subject to Holder's right to rescind a Conversion Notice pursuant to Section 6(a)(i) above, the Corporation's obligation to issue and deliver the

rescind a Conversion Notice pursuant to Section 6(c)(1) above, the Corporation's obligation to issue and deliver the

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Conversion Shares upon conversion of Series C Preferred Stock in accordance with the terms hereof are absolute and unconditional, irrespective of any action or inaction by a Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any Person or any action to enforce the same, or any setoff, counterclaim, recoupment, limitation or termination, or any breach or alleged breach by such Holder or any other Person of any obligation to the Corporation or any violation or alleged violation of law by such Holder or any other Person, and irrespective of any other circumstance which might otherwise limit such obligation of the Corporation to such Holder in connection with the issuance of such Conversion Shares. Subject to Section 6(b) hereof and subject to Holder's right to rescind a Conversion Notice pursuant to Section 6(c)(i) above, in the event a Holder shall elect to convert any or all of its Series C Preferred Stock, the Corporation may not refuse conversion based on any claim that such Holder or anyone associated or affiliated with such Holder has been engaged in any violation of law, agreement or for any other reason, unless an injunction from a court, on notice to Holder, restraining and/or enjoining conversion of all or part of the Series C Preferred Stock of such Holder shall have been sought and obtained by the Corporation, and the Corporation posts a surety bond for the benefit of such Holder in the amount of 150% of the value of the Conversion Shares into which would be converted the Series C Preferred Stock which is subject to such injunction, which bond shall remain in effect until the completion of arbitration/litigation of the underlying dispute and the proceeds of which shall be payable to such Holder to the extent it obtains judgment. In the absence of such injunction, the Corporation shall, subject to Section 6(c) hereof and subject to Holder's right to rescind a Conversion Notice pursuant to Section 6(c)(i) above, issue Conversion Shares upon a properly noticed conversion. Nothing herein shall limit a Holder's right to pursue actual damages for the Corporation's failure to deliver Conversion Shares within the period specified herein and such Holder shall have the right to pursue all remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief; provided that Holder shall not receive duplicate damages for the Corporation's failure to deliver Conversion Shares within the period specified herein. The exercise of any such rights shall not prohibit a Holder from seeking to enforce damages pursuant to any other Section hereof or under applicable law.

(iii) Compensation for Buy-In on Failure to Timely Deliver Certificates Upon Conversion. If the Corporation fails to deliver to a Holder the applicable certificate or certificates or to effect a DWAC Delivery, as applicable, by the Share Delivery Date pursuant to Section 6(c)(i) (other than a failure caused by incorrect or incomplete information provided by Holder to the Corporation), and if after such Share Delivery Date such Holder is required by its brokerage firm to purchase (in an open market transaction or otherwise), or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by such Holder of the Conversion Shares which such Holder was entitled to receive upon the conversion relating to such Share Delivery Date (a "**Buy-In**"), then the Corporation shall (A) pay in cash to such Holder (in addition to any other remedies available to or elected by such Holder) the amount by which (x) such Holder's total purchase price (including any brokerage commissions) for the shares of Common Stock so purchased exceeds (y) the product of (1) the aggregate number of shares of Common Stock that such Holder was entitled to receive from the conversion at issue multiplied by (2) the actual sale price at which the sell order giving rise to such purchase obligation was executed (including any brokerage commissions) and (B) at the option of such Holder, either reissue (if surrendered) the shares of Series C Preferred Stock equal to the number of shares of Series C Preferred Stock submitted for conversion or deliver to such Holder the number of shares of Common Stock that would have been issued if the Corporation had timely complied with its delivery requirements under Section 6(c)(i). For the avoidance of doubt, this Section 6(c)(ii) shall not apply if the Corporation does not effect a conversion pursuant to the limitations of Section 6(b). For example, if a Holder purchases shares of Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted conversion of shares of Series C Preferred Stock with respect to which the actual sale price (including any brokerage commissions) giving rise to such purchase obligation was a total of \$10,000 under clause (A) of the immediately preceding sentence, the Corporation shall be required to pay such Holder \$1,000. The Holder shall provide the Corporation written notice, within three (3) Trading Days after the occurrence of a Buy-In, indicating the amounts payable to such Holder in respect of such Buy-In together with applicable confirmations and other evidence reasonably requested by the Corporation. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Corporation's failure to timely deliver certificates representing shares of Common Stock upon conversion of the shares of Series C Preferred Stock as required pursuant to the terms hereof; provided, however, that the Holder shall not be entitled to both (i) require the reissuance of the shares of Series C Preferred Stock submitted for conversion for which such conversion was not

timely honored and (ii) receive the number of shares of Common Stock that would have been issued if the Corporation had timely complied with its delivery requirements under Section 6(c)(i).

(iv) Reservation of Shares Issuable Upon Conversion. The Corporation covenants that it will at all times reserve and keep available out of its authorized and unissued shares of Common Stock for the sole purpose of issuance upon conversion of the Series C Preferred Stock, free from preemptive rights or any other actual contingent purchase rights of Persons other than the Holders of the Series C Preferred Stock, not less than such aggregate number of shares of the Common Stock as shall be issuable (taking into account the adjustments of Section 7) upon the conversion of all outstanding shares of Series C Preferred Stock. The Corporation covenants that all shares of Common Stock that shall be so issuable shall, upon issue, be duly authorized, validly issued, fully paid and non-assessable.

(v) Fractional Shares. No fractional shares or scrip representing fractional shares of Common Stock shall be issued upon the conversion of the Series C Preferred Stock. As to any fraction of a share which a Holder would otherwise be entitled to receive upon such conversion, the Corporation shall pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the fair value of the fraction of the Common Stock (determined with reference to the Closing Sale Price).

(vi) Transfer Taxes. The issuance of certificates for shares of the Common Stock upon conversion of the Series C Preferred Stock shall be made without charge to any Holder for any documentary stamp or similar taxes that may be payable in respect of the issue or delivery of such certificates, provided that the Corporation shall not be required to pay any tax that may be payable in respect of any transfer involved in the issuance and delivery of any such certificate upon conversion in a name other than that of the registered Holder(s) of such shares of Series C Preferred Stock and the Corporation shall not be required to issue or deliver such certificates unless or until the Person or Persons requesting the issuance thereof shall have paid to the Corporation the amount of such tax or shall have established to the satisfaction of the Corporation that such tax has been paid.

(d) Status as Stockholder. Upon each Conversion Date, (i) the shares of Series C Preferred Stock being converted shall be deemed converted into shares of Common Stock and (ii) the Holder's rights as a holder of such converted shares of Series C Preferred Stock shall cease and terminate, excepting only the right to receive certificates for such shares of Common Stock and to any remedies provided herein or otherwise available at law or in equity to such Holder because of a failure by the Corporation to comply with the terms of this Certificate of Designation. In all cases, the Holder shall retain all of its rights and remedies for the Corporation's failure to convert Series C Preferred Stock.

Section 7. Certain Adjustments.

(a) Stock Dividends and Stock Splits. If the Corporation, at any time while any Series C Preferred Stock is outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions payable in shares of Common Stock (which, for avoidance of doubt, shall not include any shares of Common Stock issued by the Corporation upon conversion of any Series C Preferred Stock) with respect to the then outstanding shares of Common Stock; (ii) subdivides outstanding shares of Common Stock into a larger number of shares; or (iii) combines (including by way of a reverse stock split) outstanding shares of Common Stock into a smaller number of shares, then the Conversion Ratio shall be multiplied by a fraction, of which the numerator shall be the number of shares of Common Stock (excluding any treasury shares of the Corporation) outstanding immediately after such event and of which the denominator shall be the number of shares of Common Stock outstanding immediately before such event (excluding any treasury shares of the Corporation). Any adjustment made pursuant to this Section 7(a) shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision or combination.

(b) Fundamental Transaction. If, at any time while any Series C Preferred Stock is outstanding, (i) the Corporation effects any merger or consolidation of the Corporation with or into another Person (other than a merger in which the Corporation is the surviving or continuing entity and its Common Stock is not exchanged for or converted into other securities, cash or property), (ii) the Corporation effects any sale of all or substantially all of its assets in one transaction or a series of related transactions, (iii) any tender offer or exchange offer (whether by the

assets in one transaction or a series of related transactions, (iii) any tender offer or exchange offer (whether by the

103555301.1

Corporation or another Person) is completed pursuant to which all of the Common Stock is exchanged for or converted into other securities, cash or property, or (iv) the Corporation effects any reclassification of the Common Stock or any compulsory share exchange pursuant (other than as a result of a dividend, subdivision or combination covered by Section 7(a) above) to which the Common Stock is effectively converted into or exchanged for other securities, cash or property (in any such case, a "**Fundamental Transaction**"), then, upon any subsequent conversion of Series C Preferred Stock, the Holders shall have the right to receive, in lieu of the right to receive Conversion Shares, for each Conversion Share that would have been issuable upon such conversion immediately prior to the occurrence of such Fundamental Transaction, the same kind and amount of securities, cash or property as it would have been entitled to receive upon the occurrence of such Fundamental Transaction if it had been, immediately prior to such Fundamental Transaction, the holder of one share of Common Stock (the "**Alternate Consideration**"). For purposes of any such subsequent conversion, the determination of the Conversion Ratio shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction, and the Corporation shall adjust the Conversion Ratio in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holders shall be given the same choice as to the Alternate Consideration it receives upon any conversion of Series C Preferred Stock following such Fundamental Transaction. To the extent necessary to effectuate the foregoing provisions, any successor to the Corporation or surviving entity in such Fundamental Transaction shall file a new Certificate of Designation with the same terms and conditions and issue to the Holders new preferred stock consistent with the foregoing provisions and evidencing the Holders' right to convert such preferred stock into Alternate Consideration. The terms of any agreement to which the Corporation is a party and pursuant to which a Fundamental Transaction is effected shall include terms requiring any such successor or surviving entity to comply with the provisions of this Section 7(b) and insuring that the Series C Preferred Stock (or any such replacement security) will be similarly adjusted upon any subsequent transaction analogous to a Fundamental Transaction. The Corporation shall cause to be delivered to each Holder, at its last address as it shall appear upon the stock books of the Corporation, written notice of any Fundamental Transaction at least 10 calendar days prior to the date on which such Fundamental Transaction is expected to become effective or close.

(c) Calculations. All calculations under this Section 7 shall be made to the nearest cent or the nearest 1/100th of a share, as the case may be. For purposes of this Section 7, the number of shares of Common Stock deemed to be issued and outstanding as of a given date shall be the sum of the number of shares of Common Stock (excluding any treasury shares of the Corporation) issued and outstanding.

(d) Notice to the Holders.

(i) Adjustment to Conversion Ratio. Whenever the Conversion Ratio is adjusted pursuant to any provision of this Section 7, the Corporation shall promptly deliver to each Holder a notice setting forth the Conversion Ratio after such adjustment and setting forth a brief statement of the facts requiring such adjustment.

(ii) Other Notices. If (A) the Corporation shall declare a dividend (or any other distribution in whatever form) on the Common Stock, (B) the Corporation shall declare a special nonrecurring cash dividend on or a redemption of the Common Stock, (C) the Corporation shall authorize the granting to all holders of the Common Stock of rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any rights, (D) the approval of any stockholders of the Corporation shall be required in connection with any reclassification of the Common Stock, any consolidation or merger to which the Corporation is a party, any sale or transfer of all or substantially all of the assets of the Corporation, or any compulsory share exchange whereby the Common Stock is converted into other securities, cash or property, or (E) the Corporation shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Corporation, then, in each case, the Corporation shall cause to be filed at each office or agency maintained for the purpose of conversion of the Series C Preferred Stock, and shall cause to be delivered to each Holder at its last address as it shall appear upon the stock books of the Corporation, at least 10 calendar days prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which

such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or

103555301.1

close, and the date as of which it is expected that holders of the Common Stock of record shall be entitled to exchange their shares of the Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange, provided that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the corporate action required to be specified in such notice.

Section 8. Miscellaneous.

(a) Redemption. The Series C Preferred Stock is not redeemable.

(b) Notices. Any and all notices or other communications or deliveries to be provided by the Holders hereunder including, without limitation, any Notice of Conversion, shall be in writing and delivered personally, via email, by facsimile, or sent by a nationally recognized overnight courier service, addressed to the Corporation, at 255 State Street, 9th Floor, Boston, MA, 02109, email mousa@pieris.com, or such other facsimile number or address as the Corporation may specify for such purposes by notice to the Holders delivered in accordance with this Section. Any and all notices or other communications or deliveries to be provided by the Corporation hereunder shall be in writing and delivered personally, by facsimile, or sent by a nationally recognized overnight courier service addressed to each Holder at the facsimile number or address of such Holder appearing on the books of the Corporation, or if no such facsimile number or address appears on the books of the Corporation, at the principal place of business of such Holder. Any notice or other communication or deliveries hereunder shall be deemed given and effective on the earliest of (i) the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number specified in this Section prior to 5:30 p.m. (New York City time) on any date, (ii) the date immediately following the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number specified in this Section between 5:30 p.m. and 11:59 p.m. (New York City time) on any date, (iii) the second Business Day following the date of mailing, if sent by nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given.

(c) Lost or Mutilated Series C Preferred Stock Certificate. If a Holder's Series C Preferred Stock certificate shall be mutilated, lost, stolen or destroyed, the Corporation shall execute and deliver, in exchange and substitution for and upon cancellation of a mutilated certificate, or in lieu of or in substitution for a lost, stolen or destroyed certificate, a new certificate for the shares of Series C Preferred Stock so mutilated, lost, stolen or destroyed, but only upon receipt of evidence of such loss, theft or destruction of such certificate, and of the ownership thereof, reasonably satisfactory to the Corporation and, in each case, customary and reasonable indemnity, if requested. Applicants for a new certificate under such circumstances shall also comply with such other reasonable regulations and procedures and pay such other reasonable third-party costs as the Corporation may prescribe.

(d) Waiver. Any waiver by the Corporation or a Holder of a breach of any provision of this Certificate of Designation shall not operate as or be construed to be a waiver of any other breach of such provision or of any breach of any other provision of this Certificate of Designation or a waiver by any other Holders. The failure of the Corporation or a Holder to insist upon strict adherence to any term of this Certificate of Designation on one or more occasions shall not be considered a waiver or deprive that party (or any other Holder) of the right thereafter to insist upon strict adherence to that term or any other term of this Certificate of Designation. Any waiver by the Corporation or a Holder must be in writing. Notwithstanding any provision in this Certificate of Designation to the contrary, any provision contained herein and any right of the Holders of Series C Preferred Stock granted hereunder may be waived as to all shares of Series C Preferred Stock (and the Holders thereof) upon the written consent of the Holders of not less than a majority of the shares of Series C Preferred Stock then outstanding, unless a higher percentage is required by the NRS, in which case the written consent of the Holders of not less than such higher percentage shall be required.

(e) Severability. If any provision of this Certificate of Designation is invalid, illegal or unenforceable, the balance of this Certificate of Designation shall remain in effect, and if any provision is inapplicable to any Person or circumstance, it shall nevertheless remain applicable to all other Persons and circumstances. If it shall be found that any interest or other amount deemed interest due hereunder violates the applicable law governing usury, the applicable rate of interest due hereunder shall automatically be lowered to equal the maximum rate of interest permitted under applicable law.

permitted under applicable law.

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8

(f) Next Business Day. Whenever any payment or other obligation hereunder shall be due on a day other than a Business Day, such payment shall be made on the next succeeding Business Day.

(g) Headings. The headings contained herein are for convenience only, do not constitute a part of this Certificate of Designation and shall not be deemed to limit or affect any of the provisions hereof.

(h) Status of Converted Series C Preferred Stock. If any shares of Series C Preferred Stock shall be converted or reacquired by the Corporation, such shares shall, without need for any action by the Board of Directors or otherwise, resume the status of authorized but unissued shares of preferred stock and shall no longer be designated as Series C Preferred Stock.

IN WITNESS WHEREOF, the undersigned has executed this Certificate of Designation this __ day of November 2019.

PIERIS PHARMACEUTICALS, INC.

By: _____

Name:

Title:

[Signature Page to Certificate of Designation]

ANNEX A

NOTICE OF CONVERSION

(TO BE EXECUTED BY THE REGISTERED HOLDER IN ORDER TO CONVERT
SHARES OF SERIES C PREFERRED STOCK)

The undersigned Holder hereby irrevocably elects to convert the number of shares of Series C Convertible Preferred Stock indicated below, represented by stock certificate No(s) _____ (the "**Preferred Stock Certificates**"), into shares of common stock, par value \$0.001 per share (the "**Common Stock**"), of Pieris Pharmaceuticals, Inc., a Nevada corporation (the "**Corporation**"), as of the date written below. If securities are to be issued in the name of a person other than the undersigned, the undersigned will pay all transfer taxes payable with respect thereto. Capitalized terms utilized but not defined herein shall have the meaning ascribed to such terms in that certain Certificate of Designation of Preferences, Rights and Limitations of Series C Convertible Preferred Stock (the "**Certificate of Designation**") filed by the Corporation with the Secretary of State of the State of Nevada on November __, 2019.

As of the date hereof, the number of shares of Common Stock beneficially owned by the undersigned Holder (together with such Holder's Affiliates, and any other Person whose beneficial ownership of Common Stock would be aggregated with the Holder's for purposes of Section 13(d) of the Exchange Act and the applicable regulations of the Commission, including any "group" of which the Holder is a member), including the number of shares of Common Stock issuable upon conversion of the Series C Preferred Stock subject to this Notice of Conversion, but excluding the number of shares of Common Stock which are issuable upon (A) conversion of the remaining, unconverted Series C Preferred Stock beneficially owned by such Holder or any of its Affiliates, and (B) exercise or conversion of the unexercised or unconverted portion of any other securities of the Corporation (including any warrants) beneficially owned by such Holder or any of its Affiliates that are subject to a limitation on conversion or exercise similar to the limitation contained in Section 6(c) of the Certificate of Designation, is [_____]. For purposes hereof, beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the applicable regulations of the Commission. In addition, for purposes hereof, "**group**" has the meaning set forth in Section 13(d) of the Exchange Act and the applicable regulations of the Commission.

Conversion calculations:

Date to Effect Conversion:

Number of shares of Series C Preferred Stock owned prior to Conversion:

Number of shares of Series C Preferred Stock to be Converted:

Number of shares of Common Stock to be Issued:

Address for delivery of physical certificates:

or

for DWAC Delivery:

DWAC Instructions:

Broker no: _____

Account no: _____

[HOLDER]

By: _____

Name: _____

Title:

Date: _____

[HOLDER]

By: _____

Name:

Title:

Date:

SECURITIES PURCHASE AGREEMENT

This Securities Purchase Agreement (this “Agreement”) is dated as of November 2, 2019 by and among Pieris Pharmaceuticals, Inc., a Nevada corporation (the “Company”), and each purchaser identified on the signature pages hereto (each, including its successors and assigns, a “Purchaser” and collectively, the “Purchasers”).

RECITALS

A. The Company and each Purchaser is executing and delivering this Agreement in reliance upon the exemption from securities registration afforded by Section 4(a)(2) of the Securities Act of 1933, as amended (the “Securities Act”), and Rule 506 of Regulation D (“Regulation D”) as promulgated by the United States Securities and Exchange Commission (the “Commission”) under the Securities Act.

B. Each Purchaser, severally and not jointly, wishes to purchase, and the Company wishes to sell, upon the terms and conditions stated in this Agreement: (i) that aggregate number of shares of common stock, par value \$0.001 per share (the “Common Stock”), of the Company, set forth below such Purchaser’s name on the signature page of this Agreement (which aggregate amount for all Purchasers together shall be 5,492,960 shares of Common Stock (the “Common Shares”)), (ii) that aggregate number of shares of Series C Convertible Preferred Stock, par value \$0.001 per share (the “Preferred Stock”), of the Company, if any, set forth below such Purchaser’s name on the signature page of this Agreement (which aggregate amount for all Purchasers together shall be 3,522 shares of Preferred Stock (the “Preferred Shares” and, together with the Common Shares shall be collectively referred to herein as the “Shares”)) (the shares of Common Stock issuable upon conversion of the Preferred Stock collectively are referred to herein as the “Underlying Shares”) and (iii) warrants, in substantially the form attached hereto as Exhibit A (the “Warrants”), to acquire up to that number of additional shares of Common Stock equal to 100% of the number of Shares purchased by such Purchaser (for such purpose, counting the Preferred Shares with reference to the number of Underlying Shares), rounded up to the nearest whole share (the shares of Common Stock issuable upon exercise of or otherwise pursuant to the Warrants collectively are referred to herein as the “Warrant Shares”).

C. The Shares, the Underlying Shares, the Warrants and the Warrant Shares collectively are referred to herein as the “Securities”.

D. The Company has engaged William Blair & Company to act as lead placement agent (the “Placement Agent”) for the offering of the Shares and Warrants on a “best efforts” basis.

E. Contemporaneously with the execution and delivery of this Agreement, the parties hereto are executing and delivering a Registration Rights Agreement, substantially in the form attached hereto as Exhibit B (the “Registration Rights Agreement”), pursuant to which, among other things, the Company will agree to provide certain registration rights with respect to the Shares and the Warrant Shares under the Securities Act and the rules and regulations promulgated thereunder and applicable state securities laws.

NOW, THEREFORE, IN CONSIDERATION of the mutual covenants contained in this Agreement, and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the Company and each Purchaser hereby agree as follows:

ARTICLE I DEFINITIONS

Section 1.1 Definitions. In addition to the terms defined elsewhere in this Agreement, for all purposes of this Agreement, the following terms shall have the meanings indicated in this Section 1.1:

“Action” means any action, suit, inquiry, notice of violation, proceeding (including any partial proceeding such as a deposition) or investigation pending or, to the Company’s Knowledge, threatened against the Company or any of their respective properties or any officer, director or employee of the Company acting in his or her capacity as an officer, director or employee before or by any federal, state, county, local or foreign court, arbitrator, governmental or administrative agency, regulatory authority, stock market, stock exchange or trading facility.

“Accredited Investor Questionnaire” means the Accredited Investor Questionnaire set forth as Exhibit F hereto.

“Affiliate” means, with respect to any Person, any other Person that, directly or indirectly through one or more intermediaries, Controls, is controlled by or is under common control with such Person, as such terms are used in and construed under Rule 405 under the Securities Act. With respect to a Purchaser, any investment fund or managed account that is managed on a discretionary basis by the same investment manager as such Purchaser will be deemed to be an Affiliate of such Purchaser.

“Board of Directors” means the board of directors of the Company.

“Business Day” means any day except Saturday, Sunday, any day which is a federal legal holiday in the United States or any day on which banking institutions in the State of New York are authorized or required by law or other governmental action to close.

“Certificate of Designation” means the Certificate of Designation to be filed prior to the Closing by the Company with the Nevada Secretary of State, in the form of Exhibit E attached hereto.

“Closing” means the closing of the purchase and sale of the Shares and the Warrants on the Closing Date pursuant to Section 2.1.

“Closing Bid Price” means, for any security as of any date: (a) the last reported closing bid price per share for such security on the Principal Trading Market, as reported by Bloomberg Financial Markets, or, (b) if the Principal Trading Market begins to operate on an extended hours basis and does not designate the closing bid price then the last bid price of such security prior to 4:00 p.m., New York City time, as reported by Bloomberg Financial Markets, or (c) if the foregoing do not apply, the last closing price of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg Financial Markets, or

the electronic bulletin board for such security as reported by Bloomberg Financial Markets, or,

(d) if no closing bid price is reported for such security by Bloomberg Financial Markets, the average of the bid prices of any market makers for such security as reported in the “pink sheets” by Pink Sheets LLC. If the Closing Bid Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Closing Bid Price of such security on such date shall be the fair market value as mutually determined by the Company and the holder of such security. If the Company and such holder are unable to agree upon the fair market value of such security, then the Board of Directors shall use its good faith judgment to determine the fair market value. The Board of Directors’ determination shall be binding on all parties absent demonstrable error. All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination or other similar transaction during the applicable calculation period.

“Closing Date” means the Trading Day when all of the Transaction Documents have been executed and delivered by the applicable parties thereto, and all of the conditions set forth in Sections 2.1, 2.2, 5.1 and 5.2 hereof are satisfied or waived, as the case may be, or such other date as the parties may agree.

“Common Stock” has the meaning set forth in the Recitals, and also includes any other class of securities into which the Common Stock may hereafter be reclassified or changed.

“Common Stock Equivalents” means any securities of the Company which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, rights, options, warrants or other instrument that is at any time convertible into or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock or other securities that entitle the holder to receive, directly or indirectly, Common Stock.

“Company Counsel” means Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., with offices located at One Financial Center, Boston, Massachusetts 02111.

“Company Covered Person” means, with respect to the Company as an “issuer” for purposes of Rule 506 promulgated under the Securities Act, any Person listed in the first paragraph of Rule 506(d)(1).

“Company’s Knowledge” means with respect to any statement made to the Company’s Knowledge, that the statement is based upon the actual knowledge of the officers of the Company having responsibility for the matter or matters that are the subject of the statement, after reasonable inquiry.

“Control” (including the terms “controlling”, “controlled by” or “under common control with”) means the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of a Person, whether through the ownership of voting securities, by contract or otherwise.

“Effective Date” means the date on which the initial Registration Statement required by Section 2(a) of the Registration Rights Agreement is first declared effective by the Commission.

“Exchange Act” means the Securities Exchange Act of 1934, as amended, or any successor statute, and the rules and regulations promulgated thereunder.



“GAAP” means U.S. generally accepted accounting principles, as applied by the Company.

“Lien” means any lien, charge, claim, encumbrance, security interest, right of first refusal, preemptive right or other restrictions of any kind.

“Material Adverse Effect” means a material adverse effect on the results of operations, assets, prospects, business or financial condition of the Company, except that any of the following, either alone or in combination, shall not be deemed a Material Adverse Effect: (i) effects caused by changes or circumstances affecting general market conditions in the U.S. or applicable foreign economy or which are generally applicable to the industry in which the Company operates, provided that such effects are not borne disproportionately by the Company, or (ii) effects caused by earthquakes, hostilities, acts of war, sabotage or terrorism or military actions or any escalation or material worsening of any such hostilities, acts of war, sabotage or terrorism or military actions existing as of the date hereof.

“Material Contract” means any contract of the Company that has been filed or was required to have been filed as an exhibit to the SEC Reports pursuant to Item 601(b)(4) or Item 601(b)(10) of Regulation S-K.

“New York Courts” means the state and federal courts sitting in the City of New York, Borough of Manhattan.

“Nevada Counsel” means Brownstein Hyatt Farber Schreck, LLP, with offices located at 100 North City Parkway, Suite 1600, Las Vegas, Nevada 89106.

“Outside Date” means the tenth (10th) Business Day following the date of this Agreement.

“Person” means an individual, corporation, partnership, limited liability company, trust, business trust, association, joint stock company, joint venture, sole proprietorship, unincorporated organization, governmental authority or any other form of entity not specifically listed herein.

“Principal Trading Market” means the Trading Market on which the Common Stock is primarily listed on and quoted for trading, which, as of the date of this Agreement and the Closing Date, shall be the Nasdaq Capital Market.

“Pro Rata Portion” means, with respect to any Purchaser, the ratio of (i) such Purchaser’s Subscription Amount and (ii) the aggregate sum of the Subscription Amounts for all of the Purchasers.

“Proceeding” means an Action, claim, suit, investigation or proceeding (including, without limitation, an investigation or partial proceeding, such as a deposition), whether commenced or threatened.

“Purchase Price” means \$3.55 per unit, with \$3.425 of each unit attributable to the share of Common Stock or Preferred Stock (for such purpose, counting the Preferred Shares with

reference to the number of Underlying Shares), as applicable, included therein and \$0.125 of each unit attributable to the Warrants included therein to purchase each Warrant Share.

“Registration Statement” means a registration statement meeting the requirements set forth in the Registration Rights Agreement and covering the resale by the Purchasers of the Registrable Securities (as defined in the Registration Rights Agreement).

“Rule 144” means Rule 144 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same effect as such Rule.

“Short Sales” include, without limitation, (i) all “short sales” as defined in Rule 200 promulgated under Regulation SHO under the Exchange Act, whether or not against the box, and all types of direct and indirect stock pledges, forward sale contracts, options, puts, calls, short sales, swaps, “put equivalent positions” (as defined in Rule 16a-1(h) under the Exchange Act) and similar arrangements (including on a total return basis), and (ii) sales and other transactions through non-U.S. broker dealers or foreign regulated brokers (but shall not be deemed to include the location and/or reservation of borrowable shares of Common Stock).

“Subscription Amount” means, with respect to each Purchaser, the aggregate amount to be paid for the Shares and the related Warrants purchased hereunder as indicated on such Purchaser’s signature page to this Agreement next to the heading “Aggregate Purchase Price (Subscription Amount)” in United States dollars and in immediately available funds.

“Subsidiary” means any subsidiary of the Company as set forth on Schedule 3.1(a), and shall, where applicable, include any subsidiary of the Company formed or acquired after the date hereof.

“Trading Affiliate” means an Affiliate of a Purchaser who (x) had knowledge of the transactions contemplated hereby, (y) has or shares discretion relating to such Purchaser’s investments or trading or information concerning such Purchaser’s investments, including in respect of the Securities, and (z) is subject to such Purchaser’s review or input concerning such Affiliate’s investments or trading.

“Trading Day” means (i) a day on which the Common Stock is listed or quoted and traded on its Principal Trading Market (other than the OTCMarkets), or (ii) if the Common Stock is not listed on a Trading Market (other than the OTCMarkets), a day on which the Common Stock is traded in the over-the-counter market, as reported by the OTCMarkets, or (iii) if the Common Stock is not quoted on any Trading Market, a day on which the Common Stock is quoted in the over-the-counter market as reported in the “pink sheets” by Pink Sheets LLC (or any similar organization or agency succeeding to its functions of reporting prices); provided, that in the event that the Common Stock is not listed or quoted as set forth in (i), (ii) and (iii) hereof, then Trading Day shall mean a Business Day.

“Trading Market” means whichever of the New York Stock Exchange, the NYSE Mkt, the Nasdaq Global Select Market, the Nasdaq Global Market, the Nasdaq Capital Market or the OTCMarkets on which the Common Stock is listed or quoted for trading on the date in question.



“Transaction Documents” means this Agreement, the schedules and exhibits attached hereto, the Warrants, the Registration Rights Agreement, the Irrevocable Transfer Agent Instructions and any other documents or agreements explicitly contemplated hereunder.

“Transfer Agent” means Computershare Trust Company, N.A., the current transfer agent of the Company, with a mailing address of 250 Royall Street #1011, Canton, MA 02021 0, and a telephone number of (800) 942-5909, or any successor transfer agent for the Company.

ARTICLE II PURCHASE AND SALE

Section 2.1 Closing.

(a) Amount. Subject to the terms and conditions set forth in this Agreement, at the Closing, the Company shall issue and sell to each Purchaser, and each Purchaser shall, severally and not jointly, purchase from the Company, such number of units equal to the quotient resulting from dividing (i) the Subscription Amount for such Purchaser as indicated below such Purchaser’s name on its signature page to this Agreement by (ii) the Purchase Price, rounded down to the nearest whole Share. A “unit” shall consist of (x) one share of Common Stock or 0.001 shares of Preferred Stock, as applicable, and (y) a Warrant to purchase one Warrant Share at an exercise price of \$7.10 per share, subject to adjustment as provided in such Warrants.

(b) Closing. The Closing of the purchase and sale of the Shares and Warrants shall take place at the offices of Goodwin Procter LLP, The New York Times Building, 620 Eight Avenue, New York, New York 10018 on the Closing Date or at such other location(s) or remotely by facsimile transmission or other electronic means as the parties may mutually agree.

(c) Form of Payment. Except as may otherwise be agreed to among the Company and one or more of the Purchasers, on or prior to the Business Day immediately prior to the Closing Date, each Purchaser shall wire its Subscription Amount, in United States dollars and in immediately available funds, to a bank account designated by the Company.

(d) On the Closing Date, upon receipt of the aggregate Purchase Price: (i) the Company shall irrevocably instruct the Transfer Agent to deliver to each Purchaser (within three Trading Days after the Closing) one or more stock certificates, or evidence of book entry, free and clear of all restrictive and other legends (except as expressly provided in Section 4.1(b) hereof), evidencing the number of Shares such Purchaser is purchasing as is set forth on such Purchaser’s signature page to this Agreement next to the heading “Number and Type of Shares to be Acquired,” and (ii) the Company shall on the Business Day following the Closing Date send for overnight delivery to each Purchaser one or more Warrants, free and clear of all restrictive and other legends (except as expressly provided in Section 4.1(b) hereof), evidencing the number of Warrant Shares such Purchaser is entitled to purchase as is set forth on such Purchaser’s signature page to this Agreement next to the heading “Warrant Shares Subject to Warrant.”

Section 2.2 Closing Deliveries.



(a) On or prior to the Closing, the Company shall issue, deliver or cause to be delivered to each Purchaser the following (the “Company Deliverables”):

(i) facsimile or .pdf copies of one or more stock certificates, free and clear of all restrictive and other legends (except as provided in Section 4.1(b) hereof), evidencing the Shares subscribed for by such Purchaser hereunder, registered in the name of such Purchaser as set forth on the signature pages hereto (the “Stock Certificates”), with the original Stock Certificates delivered by the Transfer Agent within three Trading Days of Closing;

(ii) facsimile or .pdf copies of one or more Warrants, executed by the Company and registered in the name of such Purchaser as set forth on the signature pages hereto, pursuant to which such Purchaser shall have the right to acquire such number of Warrant Shares equal to 100% of the number of Shares (for such purpose, counting the Preferred Shares with reference to the number of Underlying Shares) issuable to such Purchaser pursuant to Section 2.2(a)(i), rounded up to the nearest whole share (provided, however, that in the event any Purchasers are Affiliates of each other, all Shares purchased by such Purchasers shall be aggregated together for the purpose of determining the aggregate number of Warrant Shares subject to all Warrants purchased by such Purchasers), on the terms set forth therein, with the original Warrants to be sent on the Business Day following the Closing Date for overnight delivery to the Purchasers;

(iii) a legal opinion of (A) Company Counsel, dated as of the Closing Date and in substantially the form attached hereto as Exhibit C-1, executed by such counsel and addressed to the Purchasers and the Placement Agent, and (B) Nevada Counsel, dated as of the Closing Date and in substantially the form attached hereto as Exhibit C-2, executed by such counsel and addressed to the Purchasers and the Placement Agent;

(iv) the Registration Rights Agreement, duly executed by the Company;

(v) duly executed Irrevocable Transfer Agent Instructions acknowledged in writing by the Transfer Agent instructing the Transfer Agent to deliver, on an expedited basis, a certificate evidencing a number of Shares equal to such Purchaser’s Subscription Amount divided by the Purchase Price, registered in the name of such Purchaser; and

(vi) the Compliance Certificate referred to in Section 5.1(h).

(b) On or prior to the Closing, each Purchaser shall deliver or cause to be delivered to the Company (or the Placement Agent in the case of clause (ii) below) the following, with respect to such Purchaser (the “Purchaser Deliverables”):

(i) subject to the completion of Section 2.2(a)(i) and (ii), its Subscription Amount, in United States dollars and in immediately available funds, in the amount set forth as the “Purchase Price” indicated below such Purchaser’s name on the applicable signature page hereto under the heading “Aggregate Purchase Price (Subscription Amount)” by wire transfer to a bank account designated by the Company;



(ii) the Registration Rights Agreement, duly executed by such Purchaser;

(iii) a fully completed and duly executed Accredited Investor Questionnaire, satisfactory to the Company, in the form attached hereto as Exhibit F.

ARTICLE III REPRESENTATIONS AND WARRANTIES

Section 3.1 Representations and Warranties of the Company. Except as (i) set forth in the schedules delivered herewith (the “Disclosure Schedules”), which Disclosure Schedules shall be deemed a part hereof and shall qualify any representation made herein to the extent of the disclosure contained in the corresponding section of the Disclosure Schedules, or (ii) disclosed in the SEC Reports, the Company hereby represents and warrants as of the date hereof and the Closing Date (except for the representations and warranties that speak as of a specific date, which shall be made as of such date), to each of the Purchasers and the Placement Agent:

(a) **Subsidiaries.** The Company has no direct or indirect Subsidiaries other than those listed in Schedule 3.1(a) hereto. Except as disclosed in Schedule 3.1(a) hereto, the Company owns, directly or indirectly, all of the capital stock or comparable equity interests of each Subsidiary free and clear of any and all Liens, and all the issued and outstanding shares of capital stock or comparable equity interest of each Subsidiary are validly issued and are fully paid, non-assessable and free of preemptive and similar rights to subscribe for or purchase securities.

(b) **Organization and Qualification.** The Company and each of its Subsidiaries is an entity duly incorporated or otherwise organized, validly existing and in good standing under the laws of the jurisdiction of its incorporation or organization (as applicable), with the requisite corporate power and authority to own or lease and use its properties and assets and to carry on its business as currently conducted. Neither the Company nor any Subsidiary is in violation or default of any of the provisions of its articles of incorporation or bylaws or other organizational documents. The Company and each of its Subsidiaries is duly qualified to conduct business and is in good standing as a foreign corporation or other entity in each jurisdiction in which the nature of the business conducted or property owned by it makes such qualification necessary, except where the failure to be so qualified or in good standing, as the case may be, would not have or reasonably be expected to result in a Material Adverse Effect, and no Proceeding has been instituted, is pending, or, to the Company’s Knowledge, has been threatened in any such jurisdiction revoking, limiting or curtailing or seeking to revoke, limit or curtail such power and authority or qualification.

(c) **Authorization; Enforcement; Validity.** The Company has the requisite corporate power and authority to enter into and to consummate the transactions contemplated by each of the Transaction Documents to which it is a party and otherwise to carry out its obligations hereunder and thereunder. The Company’s execution and delivery of each of the Transaction Documents to which it is a party and the consummation by it of the transactions



contemplated hereby and thereby (including, but not limited to, the sale and delivery of the Shares and the Warrants and the reservation for issuance and the subsequent issuance of the Warrant Shares upon exercise of the Warrants) have been duly authorized by all necessary corporate action on the part of the Company, and no further corporate action is required by the Company, its Board of Directors or its stockholders in connection therewith other than in connection with the Required Approvals. Each of the Transaction Documents to which it is a party has been (or upon delivery will have been) duly executed by the Company and is, or when delivered in accordance with the terms hereof, will constitute the legal, valid and binding obligation of the Company enforceable against the Company in accordance with its terms, except (i) as such enforceability may be limited by applicable bankruptcy, insolvency, reorganization, moratorium, liquidation or similar laws relating to, or affecting generally the enforcement of, creditors' rights and remedies or by other equitable principles of general application, (ii) as limited by laws relating to the availability of specific performance, injunctive relief or other equitable remedies and (iii) insofar as indemnification and contribution provisions may be limited by applicable law.

(d) No Conflicts. The execution, delivery and performance by the Company of the Transaction Documents to which it is a party and the consummation by the Company of the transactions contemplated hereby or thereby (including, without limitation, the issuance of the Shares and Warrants and the reservation for issuance and issuance of the Warrant Shares) do not and will not (i) conflict with or violate any provisions of the Company's or any Subsidiary's articles of incorporation or bylaws or other similar organizational documents of any Subsidiary, (ii) conflict with, or constitute a default (or an event that with notice or lapse of time or both would result in a default) under, result in the creation of any Lien upon any of the properties or assets of the Company or any Subsidiary or give to others any rights of termination, amendment, acceleration or cancellation (with or without notice, lapse of time or both) of, any Material Contract, or (iii) subject to the Required Approvals, conflict with or result in a violation of any law, rule, regulation, order, judgment, injunction, decree or other restriction of any court or governmental authority to which the Company or a Subsidiary is subject (including federal and state securities laws and regulations and the rules and regulations, assuming the correctness of the representations and warranties made by the Purchasers herein, of any self-regulatory organization to which the Company or its securities are subject, including all applicable Trading Markets), or by which any property or asset of the Company is bound or affected, except in the case of clauses (ii) and (iii) such as would not, individually or in the aggregate, have or reasonably be expected to result in a Material Adverse Effect or a material adverse effect on the legality, validity or enforceability of any Transaction Document or the Company's ability to perform in any material respect on a timely basis its obligations under any Transaction Document.

(e) Filings, Consents and Approvals. Neither the Company nor any of its Subsidiaries is required to obtain any consent, waiver, approval, authorization or order of, give any notice to, or make any filing or registration with, any court or other federal, state, local or other governmental authority, holder of outstanding securities of the Company or other Person in connection with the execution, delivery and performance by the Company of the Transaction Documents (including the issuance of the Securities), other than (i) the filing with the Commission of one or more Registration Statements in accordance with the requirements of the Registration Rights Agreement, (ii) filings required by applicable state securities laws, (iii) the

filing of a Notice of Sale of Securities on Form D with the Commission under Regulation D of the Securities Act, (iv) the filing of any requisite notices and/or application(s) to the Principal Trading Market for the issuance and sale of the Securities and the listing of the Shares and Warrant Shares for trading or quotation, as the case may be, thereon in the time and manner required thereby, (v) the filings required in accordance with Section 4.4 of this Agreement and (vi) those that have been made or obtained prior to the date of this Agreement (collectively, the “Required Approvals”).

(f) Issuance of the Securities. The Shares have been duly authorized and, when issued and paid for in accordance with the terms of the Transaction Documents, will be duly and validly issued, fully paid and non-assessable and free and clear of all Liens, other than restrictions on transfer provided for in the Transaction Documents or imposed by applicable securities laws, and shall not be subject to preemptive or similar rights of stockholders. The Warrants have been duly authorized and, when issued and paid for in accordance with the terms of the Transaction Documents, will be duly and validly issued, free and clear of all Liens, other than restrictions on transfer provided for in the Transaction Documents or imposed by applicable securities laws, and shall not be subject to preemptive or similar rights of stockholders. The Warrant Shares issuable upon exercise of the Warrants have been duly authorized and, when issued and paid for in accordance with the terms of the Transaction Documents and the Warrants, will be duly and validly issued, fully paid and non-assessable, free and clear of all Liens, other than restrictions on transfer provided for in the Transaction Documents or imposed by applicable securities laws, and shall not be subject to preemptive or similar rights of stockholders. Assuming the accuracy of the representations and warranties of the Purchasers in this Agreement, the Securities will be issued in compliance with all applicable federal and state securities laws. As of the Closing Date, the Company shall have reserved from its duly authorized capital stock the number of shares of Common Stock issuable upon exercise of the Warrants (without taking into account any limitations on the exercise of the Warrants set forth in the Warrants). The Company shall, so long as any of the Warrants are outstanding, take all action necessary to reserve and keep available out of its authorized and unissued capital stock, solely for the purpose of effecting the exercise of the Warrants, the number of shares of Common Stock issuable upon exercise of the Warrants (without taking into account any limitations on the exercise of the Warrants set forth in the Warrants). No “bad actor” disqualifying event described in Rule 506(d)(1)(i)-(viii) of the Securities Act (a “Disqualification Event”) is applicable to the Company or, to the Company’s knowledge, any Company Covered Person, except for a Disqualification Event as to which Rule 506(d)(2)(ii-iv) or (d)(3), is applicable.

(g) Capitalization. The capitalization of the Company is as described in its most recently filed SEC Report on Form 10-Q, except for issuances pursuant to this Agreement, stock option exercises, issuances pursuant to equity incentive plans, exercises of warrants or issuances pursuant to the Company’s “at the market” equity program. The Company has not issued any capital stock since the date of its most recently filed SEC Report other than to reflect stock option and warrant exercises that do not, individually or in the aggregate, have a material effect on the issued and outstanding capital stock, options and other securities of the Company. No Person has any right of first refusal, preemptive right, right of participation, or any similar right to participate in the transactions contemplated by the Transaction Documents that have not been effectively waived as of the Closing Date. Except as set forth on Schedule 3.1(g) or a result of the purchase and sale of the Shares and Warrants, there are no outstanding options, warrants

of the purchase and sale of the shares and warrants, there are no outstanding options, warrants,

scrip rights to subscribe to, calls or commitments of any character whatsoever relating to, or securities, rights or obligations convertible into or exercisable or exchangeable for, or giving any Person any right to subscribe for or acquire any shares of Common Stock, or contracts, commitments, understandings or arrangements by which the Company or any Subsidiary is or may become bound to issue additional shares of Common Stock or Common Stock Equivalents. Except as set forth on Schedule 3.1(g), the issuance and sale of the Shares and Warrants will not obligate the Company to issue shares of Common Stock or other securities to any Person (other than the Purchasers) and will not result in a right of any holder of Company securities to adjust the exercise, conversion, exchange or reset price under any of such securities. All of the outstanding shares of capital stock of the Company are validly issued, fully paid and non-assessable, have been issued in compliance in all material respects with all applicable federal and state securities laws, and none of such outstanding shares was issued in violation of any preemptive rights or similar rights to subscribe for or purchase securities which violation would have or would reasonably be expected to result in a Material Adverse Effect. There are no stockholders agreements, voting agreements or other similar agreements with respect to the Company's capital stock to which the Company is a party or, to the Company's Knowledge, between or among any of the Company's stockholders.

(h) SEC Reports; Disclosure Materials. The Company has filed all reports, schedules, forms, statements and other documents required to be filed by it under the Exchange Act, including pursuant to Section 13(a) or 15(d) thereof, for the 12 months preceding the date hereof (or such shorter period as the Company was required by law or regulation to file such material) (the foregoing materials, including the exhibits thereto and documents incorporated by reference therein, being collectively referred to herein as the "SEC Reports", and the SEC Reports, together with the Disclosure Schedules, being collectively referred to as the "Disclosure Materials") on a timely basis or has received a valid extension of such time of filing and has filed any such SEC Reports prior to the expiration of any such extension, except where the failure to file on a timely basis would not have or reasonably be expected to result in a Material Adverse Effect and would not have or reasonably be expected to result in any limitation or prohibition on the Company's ability to register the Shares and Warrant Shares for resale on Form S-3 or any Purchaser's ability to use Rule 144 to resell any Securities. As of their respective filing dates, or to the extent corrected by a subsequent amendment, the SEC Reports complied in all material respects with the requirements of the Securities Act and the Exchange Act and the rules and regulations of the Commission promulgated thereunder, and none of the SEC Reports, when filed, contained any untrue statement of a material fact or omitted to state 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. Each of the Material Contracts to which the Company or any Subsidiary is a party or to which the property or assets of the Company or any of its Subsidiaries are subject has been filed (or incorporated by reference) as an exhibit to the SEC Reports.

(i) Financial Statements. The consolidated financial statements of the Company included in the SEC Reports comply in all material respects with applicable accounting requirements and the rules and regulations of the Commission with respect thereto as in effect at the time of filing (or to the extent corrected by a subsequent amendment). Such consolidated financial statements have been prepared in accordance with GAAP applied on a consistent basis during the periods involved, except as may be otherwise specified in such

consistent basis during the periods involved, except as may be otherwise specified in such

financial statements or the notes thereto and except that unaudited financial statements may not contain all footnotes required by GAAP, and fairly present in all material respects the financial position of the Company and its consolidated Subsidiaries taken as a whole as of and for the dates thereof and the results of operations and cash flows for the periods then ended, subject, in the case of unaudited statements, to normal, immaterial year-end audit adjustments.

(j) Material Changes. Since the date of the latest financial statements included within the SEC Reports, except as specifically disclosed in a subsequent SEC Report filed prior to the date hereof and except as disclosed in Schedule 3.1(j), (i) there have been no events, occurrences or developments that have had or would reasonably be expected to have, either individually or in the aggregate, a Material Adverse Effect, (ii) the Company has not incurred any material liabilities (contingent or otherwise) other than (A) trade payables and accrued expenses incurred in the ordinary course of business consistent with past practice and (B) liabilities not required to be reflected in the Company's financial statements pursuant to GAAP or required to be disclosed in filings made with the Commission, (iii) the Company has not altered materially its method of accounting or the manner in which it keeps its accounting books and records, (iv) the Company has not declared or made any dividend or distribution of cash or other property to its stockholders or purchased, redeemed or made any agreements to purchase or redeem any shares of its capital stock (other than in connection with repurchases of unvested stock issued to employees of the Company) and (v) the Company has not issued any equity securities to any officer, director or Affiliate, except Common Stock issued in the ordinary course as dividends on outstanding preferred stock or issued pursuant to existing Company stock option or stock purchase plans or executive and director compensation arrangements disclosed in the SEC Reports. Except as disclosed in Schedule 3.1(j) and except for the issuance of the Shares and Warrants contemplated by this Agreement, no event, liability or development has occurred or exists with respect to the Company or its Subsidiaries or their respective business, properties, operations or financial condition, that would be required to be disclosed by the Company under applicable securities laws at the time this representation is made that has not been publicly disclosed at least one Trading Day prior to the date that this representation is made.

(k) Litigation. There is no Action which (i) adversely affects or challenges the legality, validity or enforceability of any of the Transaction Documents or the Securities or (ii) except as disclosed in Schedule 3.1(k), would, if there were an unfavorable decision, individually or in the aggregate, have or reasonably be expected to result in a Material Adverse Effect. During the past five years, neither the Company nor any Subsidiary, nor to the Company's Knowledge any director or officer thereof, is or has been the subject of any Action involving a claim of violation of or liability under federal or state securities laws or a claim of breach of fiduciary duty. There has not been, and to the Company's Knowledge there is not pending or contemplated, any investigation by the Commission involving the Company or any current or former director or officer of the Company. During the past five years, the Commission has not issued any stop order or other order suspending the effectiveness of any registration statement filed by the Company under the Exchange Act or the Securities Act.

(l) Employment Matters. No material labor dispute exists or, to the Company's Knowledge, is imminent with respect to any of the employees of the Company which would have or would reasonably be expected to result in a Material Adverse Effect. None of the Company's or any Subsidiary's employees is a member of a labor union that relates to

such employee's relationship with the Company, and neither the Company nor any of its Subsidiaries is a party to a collective bargaining agreement. Except as disclosed in Schedule 3.1(l), no executive officer of the Company (as defined in Rule 501(f) of the Securities Act) has notified the Company or any of its Subsidiaries that such officer intends to leave the Company or any such Subsidiary or otherwise terminate such officer's employment with the Company or any such Subsidiary. To the Company's Knowledge, no executive officer or key employee, is, or is now expected to be, in violation of any material term of any employment contract, confidentiality, disclosure or proprietary information agreement or non-competition agreement, or any other contract or agreement or any restrictive covenant in favor of any third party, and to the Company's Knowledge, the continued employment of each such executive officer or key employee does not subject the Company or any Subsidiary to any liability with respect to any of the foregoing matters, except, in each case, matters that, individually or in the aggregate, would not reasonably be expected to result in a Material Adverse Effect. The Company is in compliance with all U.S. federal, state, local and foreign laws and regulations relating to employment and employment practices, terms and conditions of employment and wages and hours, except where the failure to be in compliance would not, individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect.

(m) Compliance. Neither the Company nor any of its Subsidiaries (i) is in default under or in violation of (and no event has occurred that has not been waived that, with notice or lapse of time or both, would result in a default by the Company or any of its Subsidiaries under), nor has the Company or any of its Subsidiaries received written notice of a claim that it is in default under or that it is in violation of, any Material Contract (whether or not such default or violation has been waived), (ii) is in violation of any order of any court, arbitrator or governmental body having jurisdiction over the Company or any of its Subsidiaries or their properties or assets, or (iii) is in violation of, or in receipt of written notice that it is in violation of, any statute, rule or regulation of any governmental authority applicable to the Company or any of its Subsidiaries, except in each case as would not, individually or in the aggregate, have or reasonably be expected to result in a Material Adverse Effect.

(n) Regulatory Permits. The Company and each of its Subsidiaries possesses all certificates, authorizations and permits issued by the appropriate federal, state, local or foreign regulatory authorities necessary to conduct its business as currently conducted, except as set forth in the SEC Reports, or such that where the failure to possess such permits, individually or in the aggregate, has not and would not have or would not reasonably be expected to result in a Material Adverse Effect ("Material Permits"), and neither the Company nor any of its Subsidiaries has received any notice of Proceedings relating to the revocation or modification of any such Material Permits.

(o) Title to Assets. The Company and each of its Subsidiaries has good and marketable title to all tangible personal property owned by it that is material to its business, in each case free and clear of all Liens except such as do not materially affect the value of such property and do not interfere with the use made and proposed to be made of such property by the Company. Any real property and facilities held under lease by the Company and any of its Subsidiaries are held by it under valid, subsisting and enforceable leases with such exceptions as are not material and do not interfere with the use made and proposed to be made of such property and buildings by the Company and its Subsidiaries

(p) Patents and Trademarks. Except as disclosed in Schedule 3.1(p), to the Company's Knowledge, the Company and each of its Subsidiaries owns, possesses, licenses or has other rights to use, all patents, patent applications, trade and service marks, trade and service mark applications and registrations, trade names, trade secrets, inventions, copyrights, licenses, technology, know-how and other intellectual property rights and similar rights necessary or material for use in connection with its businesses as described in the SEC Reports and which the failure to so would have or reasonably be expected to result in a Material Adverse Effect (collectively, the "Intellectual Property Rights"). Except as disclosed in Schedule 3.1(p), to the Company's Knowledge, none of the Intellectual Property Rights used by the Company or any Subsidiary violates or infringes upon the patent, trademark, copyright, trade secret or other proprietary rights of any Person. There is no pending or, to the Company's Knowledge, threatened Proceeding or claim by any Person that the Company's or any Subsidiary's business as now conducted infringes or otherwise violates any patent, trademark, copyright, trade secret or other proprietary rights of another. To the Company's Knowledge, there is no existing infringement by another Person of any of the Intellectual Property Rights that would have or would reasonably be expected to result in a Material Adverse Effect. There is no pending or, to the Company's Knowledge, threatened Proceeding or claim by another Person challenging the Company's or any Subsidiary's rights in or to any material Intellectual Property Rights, or challenging inventorship, validity or scope of any such Intellectual Property Rights. The Company has taken reasonable security measures to protect the secrecy, confidentiality and value of all of its and its Subsidiaries' Intellectual Property Rights, except where failure to do so would not, individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect. None of the technology employed by the Company or any of its Subsidiaries has been obtained or is being used by the Company or any Subsidiary in violation of any contractual obligation binding on the Company or any Subsidiary or, to the Company's Knowledge, any of its or its Subsidiaries' officers, directors or employees or otherwise in violation of the rights of any Person, which violations would have or would reasonably be expected to have a Material Adverse Effect.

(q) Insurance. The Company and each of its Subsidiaries is insured by insurers of recognized financial responsibility against such losses and risks and in such amounts as the Company believes to be prudent and customary in the businesses and locations in which the Company and the Subsidiaries are engaged. None of the Company or any of its Subsidiaries has received any written notice of cancellation of any such insurance, nor, to the Company's Knowledge, will it or any Subsidiary be unable to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue its business without a material increase in cost.

(r) Transactions With Affiliates and Employees. Except as set forth in the SEC Reports, none of the executive officers or directors of the Company and, to the Company's Knowledge, none of the employees of the Company is presently a party to any transaction with the Company (other than for services as employees, officers and directors) that would be required to be disclosed pursuant to Item 404 of Regulation S-K promulgated under the Securities Act.

(s) Internal Accounting Controls. The Company maintains a system of internal accounting controls sufficient to provide reasonable assurance that (i) transactions are



executed in accordance with management's general or specific authorizations, (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain asset and liability accountability, (iii) access to assets or incurrence of liabilities is permitted only in accordance with management's general or specific authorization, and (iv) the recorded accountability for assets and liabilities is compared with the existing assets and liabilities at reasonable intervals and appropriate action is taken with respect to any differences.

(t) Sarbanes-Oxley; Disclosure Controls. The Company is in compliance in all material respects with all of the provisions of the Sarbanes-Oxley Act of 2002 which are applicable to it. The Company has established disclosure controls and procedures (as such term is defined in Rule 13a-15(e) and 15d-15(e) under the Exchange Act) for the Company and designed such disclosure controls and procedures to ensure that information required to be disclosed by the Company in the reports it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Commission's rules and forms. The Company's certifying officers have evaluated the effectiveness of the Company's disclosure controls and procedures as of the end of the period covered by the Company's most recently filed periodic report under the Exchange Act (such date, the "Evaluation Date"). The Company presented in its most recently filed periodic report under the Exchange Act the conclusions of the certifying officers about the effectiveness of the disclosure controls and procedures based on their evaluations as of the Evaluation Date. Since the Evaluation Date, there have been no changes in the Company's internal control over financial reporting (as such term is defined in the Exchange Act) that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

(u) Certain Fees. Except as disclosed in Schedule 3.1(u), no Person will have, as a result of the transactions contemplated by this Agreement, any valid right, interest or claim against or upon the Company or a Purchaser for any commission, fee or other compensation pursuant to any agreement, arrangement or understanding entered into by or on behalf of the Company, other than the Placement Agent with respect to the offer and sale of the Shares and Warrants (which fees are being paid by the Company). The Purchasers shall have no obligation with respect to any fees or with respect to any claim made by or on behalf of other Persons for fees of a type contemplated in this paragraph (u) pursuant to any agreement to which the Company is a party that may be due in connection with the transactions contemplated by the Transaction Documents. The Company shall indemnify, pay, and hold each Purchaser harmless against, any liability, loss or expense (including, without limitation, attorneys' fees and out-of-pocket expenses) arising in connection with any such right, interest or claim.

(v) Private Placement. Assuming the accuracy of the Purchasers' representations and warranties set forth in Section 3.2 of this Agreement and the accuracy of the information disclosed in the Accredited Investor Questionnaires provided by the Purchasers, no registration under the Securities Act is required for the offer and sale of the Securities by the Company to the Purchasers under the Transaction Documents. The issuance and sale of the Securities hereunder does not contravene the rules and regulations of the Principal Trading Market.

(w) Investment Company. The Company is not, and is not an Affiliate of, and immediately after receipt of payment for the Shares and Warrants, will not be or be an Affiliate

of, an “investment company” within the meaning of the Investment Company Act of 1940, as amended. The Company shall conduct its business in a manner so that it will not become subject to the Investment Company Act of 1940, as amended.

(x) Registration Rights. Other than each of the Purchasers pursuant to the Registration Rights Agreement or as disclosed in Schedule 3.1(x), no Person has any right to cause the Company to effect the registration under the Securities Act of any securities of the Company.

(y) Listing and Maintenance Requirements. The Company’s Common Stock is registered pursuant to Section 12(b) or 12(g) of the Exchange Act, and the Company has taken no action designed to terminate the registration of the Common Stock under the Exchange Act, nor has the Company received any notification that the Commission is contemplating terminating such registration. The Company has not, in the 12 months preceding the date hereof, received written notice from any Trading Market on which the Common Stock is listed or quoted to the effect that the Company is not in compliance with the listing or maintenance requirements of such Trading Market. The Company is in compliance with all listing and maintenance requirements of the Principal Trading Market on the date hereof and the issuance of the Securities will not violate any such listing or maintenance requirements.

(z) Application of Takeover Protections; Rights Agreements. The Company and the Board of Directors have taken all necessary action, if any, in order to render inapplicable any control share acquisition, business combination, poison pill (including any distribution under a rights agreement) or other similar anti-takeover provision under the Company’s charter documents or the laws of its state of incorporation that is or could reasonably be expected to become applicable to any of the Purchasers as a result of the Purchasers and the Company fulfilling their obligations or exercising their rights under the Transaction Documents, including, without limitation, the Company’s issuance of the Securities and the Purchasers’ ownership of the Securities.

(aa) [RESERVED]

(bb) No Integrated Offering. Assuming the accuracy of the Purchasers’ representations and warranties set forth in Section 3.2, neither the Company nor, to the Company’s Knowledge, any Person acting on its behalf has, directly or indirectly, at any time within the past six months, made any offers or sales of any Company security or solicited any offers to buy any security under circumstances that would (i) eliminate the availability of the exemption from registration under Regulation D under the Securities Act in connection with the offer and sale by the Company of the Securities as contemplated hereby or (ii) cause the offering of the Securities pursuant to the Transaction Documents to be integrated with prior offerings by the Company for purposes of any applicable law, regulation or stockholder approval provisions, including, without limitation, under the rules and regulations of any Trading Market on which any of the securities of the Company are listed or designated unless such integration would not have or reasonably be expected to result in a Material Adverse Effect.

(cc) Tax Matters. The Company and each of its Subsidiaries (i) has accurately and timely prepared and filed (or requested valid extensions thereof) all foreign, federal and state



income and all other tax returns, reports and declarations required by any jurisdiction to which it is subject, (ii) has paid all taxes and other governmental assessments and charges that are material in amount, shown or determined to be due on such returns, reports and declarations, except those being contested in good faith, with respect to which adequate reserves have been set aside on the books of the Company and (iii) has set aside on its books provisions reasonably adequate for the payment of all taxes for periods subsequent to the periods to which such returns, reports or declarations apply, except, in the case of clauses (i) and (ii) above, where the failure to so pay or file any such tax, assessment, charge or return would not have or reasonably be expected to result in a Material Adverse Effect. The Company has not received notice of any unpaid taxes in any material amount claimed to be due by the Company or any Subsidiary by the taxing authority of any jurisdiction.

(dd) Environmental Matters. To the Company's Knowledge, none of the Company or any of its Subsidiaries (i) is in violation of any statute, rule, regulation, decision or order of any governmental agency or body or any court, domestic or foreign, relating to the use, disposal or release of hazardous or toxic substances or relating to the protection or restoration of the environment or human exposure to hazardous or toxic substances (collectively, "Environmental Laws"), (ii) owns or operates any real property contaminated with any substance that is in violation of any Environmental Laws, (iii) is liable for any off-site disposal or contamination pursuant to any Environmental Laws, or (iv) is subject to any claim relating to any Environmental Laws; which violation, contamination, liability or claim has had or would have, individually or in the aggregate, a Material Adverse Effect; and there is no pending investigation or, to the Company's Knowledge, investigation threatened in writing that might lead to such a claim.

(ee) No General Solicitation. Neither the Company nor, to the Company's Knowledge, any Person acting on behalf of the Company has offered or sold any of the Securities by any form of general solicitation or general advertising.

(ff) Off Balance Sheet Arrangements. There is no transaction, arrangement, or other relationship between the Company, any Subsidiary and an unconsolidated or other off balance sheet entity that is required to be disclosed by the Company in the SEC Reports and is not so disclosed and would have or reasonably be expected to result in a Material Adverse Effect.

(gg) Foreign Corrupt Practices. Neither the Company nor any of its Subsidiaries, nor to the Company's Knowledge, any agent or other Person acting on behalf of the Company or any of its Subsidiaries, has (i) directly or indirectly, used any funds for unlawful contributions, gifts, entertainment or other unlawful expenses related to foreign or domestic political activity, (ii) made any unlawful payment to foreign or domestic government officials or employees or to any foreign or domestic political parties or campaigns from corporate funds, (iii) failed to disclose fully any contribution made by the Company or any Subsidiary (or made by any Person acting on its behalf of which the Company is aware) which is in violation of law, or (iv) violated in any material respect any provision of the Foreign Corrupt Practices Act of 1977, as amended.



(hh) Acknowledgment Regarding Purchasers' Purchase of Securities. The Company acknowledges and agrees that each of the Purchasers is acting solely in the capacity of an arm's length purchaser with respect to the Transaction Documents and the transactions contemplated hereby and thereby. The Company further acknowledges that no Purchaser is acting as a financial advisor or fiduciary of the Company (or in any similar capacity) with respect to the Transaction Documents and the transactions contemplated thereby and any advice given by any Purchaser or any of their respective representatives or agents in connection with the Transaction Documents and the transactions contemplated thereby is merely incidental to the Purchasers' purchase of the Securities. The Company further represents to each Purchaser that the Company's decision to enter into this Agreement and the other Transaction Documents has been based solely on the independent evaluation of the transactions contemplated hereby by the Company and its representatives.

(ii) Regulation M Compliance. The Company has not, and to the Company's Knowledge no one acting on its behalf has, (i) taken, directly or indirectly, any action designed to cause or to result in the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of any of the Securities, (ii) sold, bid for, purchased, or, paid any compensation for soliciting purchases of, any of the Securities in violation of Regulation M under the Exchange Act, or (iii) paid or agreed to pay to any Person any compensation for soliciting another to purchase any other securities of the Company, other than, in the case of clauses (ii) and (iii), compensation paid to the Placement Agent in connection with the placement of the Shares and Warrants.

(jj) PFIC Status. Neither the Company nor any of its Subsidiaries is or intends to become a "passive foreign investment company" within the meaning of Section 1297 of the U.S. Internal Revenue Code of 1986, as amended.

(kk) OFAC Status. Neither the Company nor any of its Subsidiaries is and, to the Company's Knowledge, no director, officer, agent, employee, Affiliate or Person acting on behalf of the Company or any Subsidiary is currently subject to any U.S. sanctions administered by the Office of Foreign Assets Control of the U.S. Treasury Department ("OFAC"); and the Company will not directly or indirectly use the proceeds of the sale of the Securities, or lend, contribute or otherwise make available such proceeds to any joint venture partner or other Person or entity, towards any sales or operations in Cuba, Iran, Syria, Sudan, Myanmar or any other country sanctioned by OFAC or for the purpose of financing the activities of any Person currently subject to any U.S. sanctions administered by OFAC.

(ll) FDA. There is no legal or governmental proceeding to which the Company or any Subsidiary is a party or of which any property or assets of the Company or any Subsidiary is the subject, including any proceeding before the United States Food and Drug Administration of the U.S. Department of Health and Human Services ("FDA") or comparable federal, state, local or non-U.S. governmental bodies (it being understood that the interaction between the Company and the FDA and such comparable governmental bodies relating to the clinical development and product approval process shall not be deemed proceedings for purposes of this representation), which, singularly or in the aggregate, if determined adversely to the Company or any Subsidiary, would have or would reasonably be expected to have a Material Adverse Effect; and to the Company's Knowledge, no such proceedings are threatened or

contemplated by governmental authorities or threatened by others. The Company and each Subsidiary is in compliance with all applicable federal, state, local and non-U.S. laws, regulations, orders and decrees governing its business as prescribed by the FDA, or any other federal, state or non-U.S. agencies or bodies engaged in the regulation of pharmaceuticals, except where noncompliance would not, singularly or in the aggregate, be reasonably likely to have a Material Adverse Effect. All preclinical studies and clinical trials conducted by or on behalf of the Company and any subsidiary, including those necessary to support approval for commercialization of the Company's or any Subsidiary's products or product candidates, have been conducted by the Company or any Subsidiary, as applicable, or to the Company's Knowledge by third parties, in material compliance with all applicable federal, state or non-U.S. laws, rules, orders and regulations.

(mm) No Additional Agreements. The Company does not have any agreement or understanding with any Purchaser with respect to the transactions contemplated by the Transaction Documents other than as specified in the Transaction Documents.

Section 3.2 Representations and Warranties of the Purchasers. Each Purchaser hereby, for itself and for no other Purchaser, represents and warrants as of the date hereof and as of the Closing Date to the Company and the Placement Agent as follows:

(a) Organization; Authority. Such Purchaser is an entity duly organized, validly existing and in good standing under the laws of the jurisdiction of its organization with the requisite corporate, limited liability company or partnership power and authority to enter into and to consummate the transactions contemplated by the applicable Transaction Documents and otherwise to carry out its obligations hereunder and thereunder. The execution and delivery of this Agreement by such Purchaser and performance by such Purchaser of the transactions contemplated by this Agreement have been duly authorized by all necessary corporate or, if such Purchaser is not a corporation, such partnership, limited liability company or other applicable like action, on the part of such Purchaser. Each Transaction Document to which it is a party has been duly executed by such Purchaser, and when delivered by such Purchaser in accordance with the terms hereof, will constitute the valid and legally binding obligation of such Purchaser, enforceable against it in accordance with its terms, except as such enforceability may be limited by applicable bankruptcy, insolvency, reorganization, moratorium, liquidation or similar laws relating to, or affecting generally the enforcement of, creditors' rights and remedies or by other equitable principles of general application.

(b) No Conflicts. The execution, delivery and performance by such Purchaser of this Agreement and the Registration Rights Agreement and the consummation by such Purchaser of the transactions contemplated hereby and thereby will not (i) result in a violation of the organizational documents of such Purchaser, (ii) conflict with, or constitute a default (or an event which with notice or lapse of time or both would become a default) under, or give to others any rights of termination, amendment, acceleration or cancellation of, any agreement, indenture or instrument to which such Purchaser is a party, or (iii) result in a violation of any law, rule, regulation, order, judgment or decree (including federal and state securities laws) applicable to such Purchaser, except in the case of clauses (ii) and (iii) above, for such conflicts, defaults, rights or violations which would not, individually or in the aggregate, reasonably be expected to



have a material adverse effect on the ability of such Purchaser to perform its obligations hereunder.

(c) Investment Intent. Such Purchaser understands that the Securities are “restricted securities” and have not been registered under the Securities Act or any applicable state securities law and is acquiring the Shares and Warrants and, upon exercise of the Warrants, will acquire the Warrant Shares issuable upon exercise thereof as principal for its own account and not with a view to, or for distributing or reselling such Securities or any part thereof in violation of the Securities Act or any applicable state securities laws, provided, however, that by making the representations herein, such Purchaser does not agree to hold any of the Securities for any minimum period of time and reserves the right, subject to the provisions of this Agreement and the Registration Rights Agreement, at all times to sell or otherwise dispose of all or any part of such Securities pursuant to an effective registration statement under the Securities Act or under an exemption from such registration and in compliance with applicable federal and state securities laws. Such Purchaser is acquiring the Securities hereunder in the ordinary course of its business. Such Purchaser does not presently have any agreement, plan or understanding, directly or indirectly, with any Person to distribute or effect any distribution of any of the Securities (or any securities which are derivatives thereof) to or through any Person; such Purchaser is not a registered broker-dealer under Section 15 of the Exchange Act or an entity engaged in a business that would require it to be so registered as a broker-dealer.

(d) Purchaser Status. At the time such Purchaser was offered the Shares and Warrants, it was, and at the date hereof it is, and on each date on which it exercises the Warrants it will be, an “accredited investor” as defined in Rule 501(a) under the Securities Act.

(e) General Solicitation. Such Purchaser is not purchasing the Securities as a result of any advertisement, article, notice or other communication regarding the Securities published in any newspaper, magazine or similar media or broadcast over television or radio or presented at any seminar or any other general advertisement.

(f) Experience of Such Purchaser. Such Purchaser, either alone or together with its representatives, has such knowledge, sophistication and experience in business and financial matters so as to be capable of evaluating the merits and risks of the prospective investment in the Securities, and has so evaluated the merits and risks of such investment. Such Purchaser is able to bear the economic risk of an investment in the Securities and, at the present time, is able to afford a complete loss of such investment.

(g) Access to Information. Such Purchaser acknowledges that it has had the opportunity to review the Disclosure Materials and 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. Neither such inquiries nor any other investigation conducted by or on behalf of such Purchaser or its representatives or counsel shall modify, amend or affect such Purchaser’s right to rely on the truth, accuracy and completeness of the Company’s representations and warranties contained in the Transaction Documents.



(h) Brokers and Finders. No Person will have, as a result of the transactions contemplated by this Agreement, any valid right, interest or claim against or upon the Company or any Purchaser for any commission, fee or other compensation pursuant to any agreement, arrangement or understanding entered into by or on behalf of such Purchaser.

(i) Independent Investment Decision. Such Purchaser has independently evaluated the merits of its decision to purchase Securities pursuant to the Transaction Documents, and such Purchaser confirms that it has not relied on the advice of any other Purchaser's business and/or legal counsel in making such decision. Such Purchaser understands that nothing in this Agreement or any other materials presented by or on behalf of the Company to the Purchaser in connection with the purchase of the Securities constitutes legal, tax or investment advice. Such Purchaser has consulted such legal, tax and investment advisors as it, in its sole discretion, has deemed necessary or appropriate in connection with its purchase of the Securities. Such Purchaser understands that the Placement Agent has acted solely as the agent of the Company in this placement of the Shares and Warrants and such Purchaser has not relied on the business or legal advice of the Placement Agent or any of its agents, counsel or Affiliates in making its investment decision hereunder, and confirms that none of such Persons has made any representations or warranties to such Purchaser in connection with the transactions contemplated by the Transaction Documents.

(j) Reliance on Exemptions. Such Purchaser understands that the Securities are being offered and sold to it in reliance on specific exemptions from the registration requirements of United States federal and state securities laws and that the Company is relying in part upon the truth and accuracy of, and such Purchaser's compliance with, the representations, warranties, agreements, acknowledgements and understandings of such Purchaser set forth herein in order to determine the availability of such exemptions and the eligibility of such Purchaser to acquire the Securities.

(k) No Governmental Review. Such Purchaser understands that no United States federal or state agency or any other government or governmental agency has passed on or made any recommendation or endorsement of the Securities or the fairness or suitability of the investment in the Securities nor have such authorities passed upon or endorsed the merits of the offering of the Securities

(l) Residency. Such Purchaser's residence (if an individual) or offices in which its investment decision with respect to the Securities was made (if an entity) are located at the address immediately below such Purchaser's name on its signature page hereto.

(m) Accuracy of Accredited Investor Questionnaire. The Accredited Investor Questionnaire delivered by such Purchaser in connection with this Agreement is complete and accurate in all respects as of the date of this Agreement and will be correct as of the Closing Date.

The Company and each of the Purchasers acknowledge and agree that no party to this Agreement has made or makes any representations or warranties with respect to the transactions contemplated hereby other than those specifically set forth in this Article III and the Transaction Documents.



ARTICLE IV
OTHER AGREEMENTS OF THE PARTIES

Section 4.1 Transfer Restrictions.

(a) Compliance with Laws. Notwithstanding any other provision of this Article IV, each Purchaser, severally but not jointly, covenants that the Securities may be disposed of only pursuant to an effective registration statement under, and in compliance with the requirements of, the Securities Act, or pursuant to an available exemption from, or in a transaction not subject to, the registration requirements of the Securities Act, and in compliance with any applicable state and federal securities laws. In connection with any transfer of the Securities other than (i) pursuant to an effective registration statement, (ii) to the Company, (iii) pursuant to Rule 144 (provided that such Purchaser provides the Company with reasonable assurances (in the form of seller and, if applicable, broker representation letters) that the securities may be sold pursuant to such rule) or (iv) in connection with a bona fide pledge as contemplated in Section 4.1(b), the Company may require the transferor thereof to provide to the Company an opinion of counsel selected by the transferor and reasonably acceptable to the Company, the form and substance of which opinion shall be reasonably satisfactory to the Company, to the effect that such transfer does not require registration of such transferred Securities under the Securities Act. As a condition of transfer, any such transferee shall agree in writing to be bound by the terms of this Agreement and the Registration Rights Agreement and shall have the rights of a Purchaser under this Agreement and the Registration Rights Agreement with respect to such transferred Securities.

(b) Legends. Certificates evidencing the Securities shall bear any legend as required by the “blue sky” laws of any state and a restrictive legend in substantially the following form, until such time as they are not required under Section 4.1(c):

[NEITHER THESE SECURITIES NOR THE SECURITIES ISSUABLE UPON EXERCISE OF THESE SECURITIES HAVE BEEN REGISTERED] [THESE SECURITIES HAVE NOT BEEN REGISTERED] UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE “SECURITIES ACT”), OR APPLICABLE STATE SECURITIES LAWS. THE SECURITIES MAY NOT BE OFFERED FOR SALE, SOLD, TRANSFERRED OR ASSIGNED (I) IN THE ABSENCE OF (A) AN EFFECTIVE REGISTRATION STATEMENT FOR THE SECURITIES UNDER THE SECURITIES ACT OR (B) AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS OR BLUE SKY LAWS AS EVIDENCED BY A LEGAL OPINION OF COUNSEL REASONABLY SATISFACTORY TO THE COMPANY AND ITS TRANSFER AGENT OR (II) UNLESS SOLD PURSUANT TO RULE 144 UNDER SAID ACT.

The Company acknowledges and agrees that a Purchaser may from time to time pledge, and/or grant a security interest in, some or all of the legended Securities in connection with applicable securities laws, pursuant to a bona fide margin agreement in compliance with a bona fide margin loan. Such a pledge would not be subject to approval or consent of the Company and

no legal opinion of legal counsel to the pledgee, secured party or pledgor shall be required in connection with the pledge, but such legal opinion shall be required in connection with a subsequent transfer or foreclosure following default by such Purchaser transferee of the pledge. No notice shall be required of such pledge, but such Purchaser's transferee shall promptly notify the Company of any such subsequent transfer or foreclosure of such legended Securities. Each Purchaser acknowledges that the Company shall not be responsible for any pledges relating to, or the grant of any security interest in, any of the Securities or for any agreement, understanding or arrangement between any Purchaser and its pledgee or secured party. At the appropriate Purchaser's expense, the Company will execute and deliver such reasonable documentation as a pledgee or secured party of Securities may reasonably request in connection with a pledge or transfer of the Securities, including the preparation and filing of any required prospectus supplement under Rule 424(b)(3) of the Securities Act or other applicable provision of the Securities Act to appropriately amend the list of selling stockholders thereunder. Each Purchaser acknowledges and agrees that, except as otherwise provided in Section 4.1(c), any Securities subject to a pledge or security interest as contemplated by this Section 4.1(b) shall continue to bear the legend set forth in this Section 4.1(b) and be subject to the restrictions on transfer set forth in Section 4.1(a).

(c) Removal of Legends. The legend set forth in Section 4.1(b) above shall be removed and the Company shall issue a certificate or book-entry statement without such legend or any other legend to the holder of the applicable Securities upon which it is stamped or issue to such holder by electronic delivery at the applicable balance account at the Depository Trust Company ("DTC"), if (i) such Securities are registered for resale under the Securities Act (provided that, if a Purchaser is selling pursuant to the Registration Statement, such Purchaser agrees to only sell such Securities during such time that the Registration Statement is effective and not withdrawn or suspended, and only as permitted by the Registration Statement), (ii) such Securities are sold or transferred pursuant to Rule 144 (if the transferor is not an Affiliate of the Company), or (iii) such Securities are eligible for sale under Rule 144, without the requirement for the Company to be in compliance with the current public information required under Rule 144 as to such securities and without volume or manner-of-sale restrictions. Following the earlier of (i) the Effective Date or (ii) Rule 144 becoming available for the resale of Securities, without the requirement for the Company to be in compliance with the current public information required under Rule 144 as to such securities and without volume or manner-of-sale restrictions, the Company shall deliver to the Transfer Agent irrevocable instructions that the Transfer Agent shall reissue a certificate representing the applicable Shares or issue a certificate representing the applicable Warrant Shares without legend upon receipt by the Transfer Agent of the legended certificates for such Shares. Any fees (with respect to the Transfer Agent or otherwise) associated with the removal of such legend shall be borne by the Company. Following the Effective Date, or at such earlier time as a legend is no longer required for certain Securities (in which case a Purchaser shall also be required to provide reasonable assurances, in the form of seller and, if applicable, broker representation letters), the Company will no later than three Trading Days following the delivery by a Purchaser to the Company or the Transfer Agent (with notice to the Company) of (i) a legended certificate representing Shares or Warrant Shares (endorsed or with stock powers attached, signatures guaranteed, and otherwise in form necessary to affect the reissuance and/or transfer) or (ii) an Exercise Notice and payment of the applicable exercise price in the manner stated in the Warrants to effect the exercise of such Warrant in accordance with its terms, and an opinion of counsel to the extent required by Section 4.1(c).

accordance with its terms, and an opinion of counsel to the extent required by Section 4.1(a),

deliver or cause to be delivered to the transferee of such Purchaser or such Purchaser, as applicable, a certificate representing such Securities that is free from all restrictive and other legends. The Company may not make any notation on its records or give instructions to the Transfer Agent that enlarge the restrictions on transfer set forth in this Section 4.1(c) other than to comply with applicable law. Certificates or book entry statements for Shares or Warrant Shares subject to legend removal hereunder may be transmitted by the Transfer Agent to a Purchaser by crediting the account of such Purchaser's prime broker with DTC as directed by such Purchaser.

(d) Irrevocable Transfer Agent Instructions. The Company shall issue irrevocable instructions to the Transfer Agent, and any subsequent transfer agent, in substantially the form of Exhibit D attached hereto (the "Irrevocable Transfer Agent Instructions"). The Company represents and warrants that no instruction other than the Irrevocable Transfer Agent Instructions referred to in this Section 4.1(d) (or instructions that are consistent therewith) will be given by the Company to the Transfer Agent in connection with this Agreement, and that the Securities shall otherwise be freely transferable on the books and records of the Company as and to the extent provided in this Agreement and the other Transaction Documents and applicable law. The Company acknowledges that a breach by it of its obligations under this Section 4.1(d) will cause irreparable harm to a Purchaser. Accordingly, the Company acknowledges that the remedy at law for a breach of its obligations under this Section 4.1(d) will be inadequate and agrees, in the event of a breach or threatened breach by the Company of the provisions of this Section 4.1(d), that a Purchaser shall be entitled, in addition to all other available remedies, to an order and/or injunction restraining any breach and requiring immediate issuance and transfer, without the necessity of showing economic loss and without any bond or other security being required.

(e) Acknowledgement. Each Purchaser, severally but not jointly, acknowledges its primary responsibilities under the Securities Act and accordingly will not sell or otherwise transfer the Securities or any interest therein without complying with the requirements of the Securities Act and applicable law. While the Registration Statement remains effective, each Purchaser hereunder may sell the Shares and Warrant Shares in accordance with the plan of distribution contained in the Registration Statement and if it does so it will comply therewith and with the related prospectus delivery requirements unless an exemption therefrom is available. Each Purchaser, severally and not jointly with the other Purchasers, agrees that if it is notified by the Company in writing at any time that the Registration Statement registering the resale of the Shares or the Warrant Shares is not effective or that the prospectus included in such Registration Statement no longer complies with the requirements of Section 10 of the Securities Act, such Purchaser will refrain from selling such Shares and Warrant Shares until such time as the Purchaser is notified by the Company that such Registration Statement is effective or such prospectus is compliant with Section 10 of the Securities Act, unless such Purchaser is able to, and does, sell such Shares or Warrant Shares pursuant to an available exemption from the registration requirements of Section 5 of the Securities Act. Both the Company and its Transfer Agent, and their respective directors, officers, employees and agents, may rely on this Section 4.1(e) and each Purchaser, severally but not jointly, with the other Purchasers will indemnify and hold harmless each of such persons from any breaches or violations of this Section 4.1(e).



(f) Buy-In. If the Company shall fail for any reason or for no reason to issue to a Purchaser un-legended certificates or book-entry statements within three Trading Days after receipt of all documents necessary for the removal of the legend set forth above (the “Deadline Date”), then, in addition to all other remedies available to such Purchaser, if on or after the Trading Day immediately following such three Trading Day period, such Purchaser is required to purchase (in an open market transaction or otherwise) shares of Common Stock to deliver in satisfaction of a sale by the holder of shares of Common Stock that such Purchaser anticipated receiving from the Company without any restrictive legend (a “Buy-In”), then the Company shall, within three Trading Days after such Purchaser’s request and in the Company’s sole discretion, either (i) pay cash to such Purchaser in an amount equal to such Purchaser’s total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased (the “Buy-In Price”), at which point the shares of Common Stock held by such Purchaser equal to the number of shares of Common Stock so purchased shall be forfeited to the Company and the Company’s obligation to deliver such certificate or book-entry statement (and to issue such shares of Common Stock) shall terminate, or (ii) promptly honor its obligation to deliver to such Purchaser a certificate or certificates or book-entry statements representing such shares of Common Stock and pay cash to the Purchaser in an amount equal to the excess (if any) of the Buy-In Price over the product of (a) such number of shares of Common Stock, multiplied by (b) the Closing Bid Price on the Deadline Date. A Purchaser shall provide the Company written notice indicating the amounts payable to such Purchaser in respect of the Buy-In, together with applicable confirmations and other evidence reasonably requested by the Company.

Section 4.2 Reservation of Common Stock.

(a) The Company shall take all action necessary to at all times during the period the Warrants are outstanding have authorized, and reserved for the purpose of issuance from and after the Closing Date, the number of shares of Common Stock issuable upon exercise of the Warrants issued at the Closing (without taking into account any limitations on exercise of the Warrants set forth in the Warrants).

(b) The Company shall reserve and keep available at all times during which the Preferred Shares remain outstanding, free of preemptive rights, a sufficient number of shares of Common Stock for the purpose of enabling the Company to issue the Underlying Shares upon conversion of the Preferred Shares pursuant to the Certificate of Designation. The form of Notice of Conversion included in the Certificate of Designation sets forth the totality of the procedures required of the Purchasers in order to convert the Preferred Shares. No additional legal opinion, other information or instructions shall be required of the Purchasers to convert their Preferred Shares. The Company shall honor conversions of the Preferred Shares and shall deliver Underlying Shares in accordance with the terms, conditions and time periods set forth in the Transaction Documents.

(c) Acknowledgment of Dilution. The Company acknowledges that the issuance of the Shares may result in dilution of the outstanding shares of Common Stock, which dilution may be substantial under certain market conditions. The Company further acknowledges that its obligations under the Transaction Documents, including without limitation its obligation to issue the Shares pursuant to the Transaction Documents, are unconditional and absolute and

not subject to any right of set off, counterclaim, delay or reduction, regardless of the effect of any such dilution or any claim the Company may have against any Purchaser and regardless of the dilutive effect that such issuance may have on the ownership of the other stockholders of the Company.

(d) Furnishing of Information. In order to enable the Purchasers to sell the Securities under Rule 144, until the earlier of (i) the date that the Securities cease to be Registrable Securities (as defined in the Registration Rights Agreement) (and for no less than 12 months from the Closing), (ii) the date that is 24 months from the Closing or (iii) a Fundamental Transaction (as defined in the Warrant) pursuant to which the Company is no longer a reporting company under the Exchange Act, the Company shall use its commercially reasonable efforts to timely file (or obtain extensions in respect thereof and file within the applicable grace period) all reports required to be filed by the Company after the date hereof pursuant to the Exchange Act. Except as set forth in clause (iii) above, during such period, if the Company is not required to file reports pursuant to the Exchange Act, it will prepare and furnish to the Purchasers and make publicly available in accordance with Rule 144(c) such information as is required for the Purchasers to sell the Securities under Rule 144.

Section 4.3 No Integration. The Company shall not, and shall use its commercially reasonable efforts to ensure that no Affiliate of the Company shall, sell, offer for sale or solicit offers to buy or otherwise negotiate in respect of any security (as defined in Section 2 of the Securities Act) that will be integrated with the offer or sale of the Securities in a manner that would require the registration under the Securities Act of the sale of the Securities to the Purchasers, or that will be integrated with the offer or sale of the Securities for purposes of the rules and regulations of any Trading Market such that it would require stockholder approval prior to the closing of such other transaction unless stockholder approval is obtained before the closing of such subsequent transaction.

Section 4.4 Securities Laws Disclosure; Publicity. On or before 9:00 a.m., New York City time, on the Business Day immediately following the date hereof, the Company shall issue a press release (the "Press Release") reasonably acceptable to the Placement Agent disclosing all material terms of the transactions contemplated hereby. On or before 5:30 p.m., New York City time, on the fourth Trading Day immediately following the execution of this Agreement, the Company will file a Current Report on Form 8-K with the Commission describing the terms of the Transaction Documents (and including as exhibits to such Current Report on Form 8-K the material Transaction Documents (including, without limitation, this Agreement, the form of Warrant and the Registration Rights Agreement)). Notwithstanding the foregoing, the Company shall not publicly disclose the name of any Purchaser or an Affiliate of any Purchaser, or include the name of any Purchaser or an Affiliate of any Purchaser in any press release or filing with the Commission (other than the Registration Statement) or any regulatory agency or Trading Market, without the prior written consent of such Purchaser, except (i) as required by federal securities law in connection with (A) any registration statement contemplated by the Registration Rights Agreement and (B) the filing of final Transaction Documents (including signature pages thereto) with the Commission and (ii) to the extent such disclosure is required by law, request of the Staff of the Commission or Trading Market regulations, in which case the Company shall provide the Purchasers with prior written notice of such disclosure permitted under this subclause (ii). From and after the issuance of the Press Release, no Purchaser shall be in possession of any material

non-public information received from the Company or any of its officers, directors, employees or agents that is not disclosed in the Press Release unless a Purchaser shall have executed a written agreement regarding confidentiality and use of such information. Each Purchaser, severally and not jointly with the other Purchasers, covenants that it will comply with the provisions of any confidentiality or nondisclosure agreement executed by it and, in addition, until such time as the transactions contemplated by this Agreement are required to be publicly disclosed by the Company as described in this Section 4.4 or as otherwise set forth in any such confidentiality or nondisclosure agreement, such Purchaser will maintain the confidentiality of all disclosures made to it in connection with this transaction (including the existence and terms of this transaction).

Section 4.5 Shareholder Rights Plan. No claim will be made or enforced by the Company or, with the consent of the Company, any other Person, that any Purchaser is an “Acquiring Person” under any control share acquisition, business combination, poison pill (including any distribution under a rights agreement) or similar anti-takeover plan or arrangement in effect or hereafter adopted by the Company, or that any Purchaser could be deemed to trigger the provisions of any such plan or arrangement, in either case solely by virtue of receiving Securities under the Transaction Documents or under any other written agreement between the Company and the Purchasers.

Section 4.6 Non-Public Information. Except with respect to the material terms and conditions of the transactions contemplated by the Transaction Documents, including this Agreement, or as expressly required by any applicable securities law, the Company covenants and agrees that neither it, nor any other Person acting on its behalf, will provide any Purchaser or its agents or counsel with any information regarding the Company that the Company believes constitutes material non-public information without the express written consent of such Purchaser, unless prior thereto such Purchaser shall have executed a written agreement regarding the confidentiality and use of such information. The Company understands and confirms that each Purchaser shall be relying on the foregoing covenant in effecting transactions in securities of the Company.

Section 4.7 Use of Proceeds. The Company shall use the net proceeds from the sale of the Shares and Warrants hereunder for working capital and general corporate purposes.

Section 4.8 Listing of Securities. In the time and manner required by the Principal Trading Market, the Company shall prepare and file with such Principal Trading Market an additional shares listing application covering all of the Shares and Warrant Shares and shall use its reasonable best efforts to take all steps necessary to cause all of the Shares and Warrant Shares to be approved for listing on the Principal Trading Market as promptly as possible thereafter.

Section 4.9 Form D; Blue Sky. The Company agrees to timely file a Form D with respect to the Securities as required under Regulation D and to provide a copy thereof, promptly upon the written request of any Purchaser. The Company, on or before the Closing Date, shall take such action as the Company shall reasonably determine is necessary in order to obtain an exemption for or to qualify the Securities for sale to the Purchasers 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 such actions promptly upon the written request of any Purchaser.

Section 4.10 Indemnification of Purchasers. Subject to the provisions of this Section 4.10, the Company will indemnify and hold each Purchaser and its directors, officers, shareholders, members, partners, employees and agents (and any other Persons with a functionally equivalent role of a Person holding such titles notwithstanding a lack of such title or any other title), each Person who controls such Purchaser (within the meaning of Section 15 of the Securities Act and Section 20 of the Exchange Act), and the directors, officers, shareholders, agents, members, partners or employees (and any other Persons with a functionally equivalent role of a Person holding such titles notwithstanding a lack of such title or any other title) of such controlling persons (each, a "Purchaser Party") harmless from any and all losses, liabilities, obligations, claims, contingencies, damages, costs and expenses, including all judgments, amounts paid in settlements, court costs and reasonable attorneys' fees and costs of investigation that any such Purchaser Party may suffer or incur as a result of or relating to (a) any breach of any of the representations, warranties, covenants or agreements made by the Company in this Agreement or in the other Transaction Documents or (ii) any Action instituted against a Purchaser in any capacity, or any Purchaser Party, by any stockholder of the Company who is not an Affiliate of such Purchaser seeking indemnification, with respect to any of the transactions contemplated by the Transaction Documents (unless such Action is based upon a breach of such Purchaser's representations, warranties or covenants under the Transaction Documents or any other agreement with the Company, or any agreements or understandings such Purchaser may have with any such stockholder or any violations by the Purchaser of state or federal securities laws or any conduct by such Purchaser which constitutes fraud, gross negligence, willful misconduct or malfeasance). Promptly after receipt by any such Person (the "Indemnified Person") of notice of any demand, claim or circumstances which would or might give rise to a claim or the commencement of any Proceeding or investigation in respect of which indemnity may be sought pursuant to this Section 4.10, such Indemnified Person shall promptly notify the Company in writing and the Company shall assume the defense thereof, including the employment of counsel reasonably satisfactory to such Indemnified Person, and shall assume the payment of all fees and expenses relating to such Proceeding or investigation; provided, however, that the failure of any Indemnified Person so to notify the Company shall not relieve the Company of its obligations hereunder except to the extent that the Company is actually and materially prejudiced by such failure to notify. In any such proceeding, any Indemnified Person shall have the right to retain its own counsel, but the fees and expenses of such counsel shall be at the expense of such Indemnified Person unless: (i) the Company and the Indemnified Person shall have mutually agreed to the retention of such counsel; (ii) the Company shall have failed promptly to assume the defense of such proceeding and to employ counsel reasonably satisfactory to such Indemnified Person in such proceeding; or (iii) in the reasonable judgment of counsel to such Indemnified Person, representation of both parties by the same counsel would be inappropriate due to actual or potential differing interests between them. The Company shall not be liable for any settlement of any proceeding effected without its prior written consent, which consent shall not be unreasonably withheld, delayed or conditioned or to the extent fees or costs incurred pursuant to this Section 4.10 are attributable to the Indemnified Person's breach of any of the representations, warranties, covenants or agreements made by the Purchasers in this Agreement or the other Transaction Documents. Without the prior written consent of the Indemnified Person, which consent shall not be unreasonably withheld, delayed or conditioned

indemnified person, which consent shall not be unreasonably withheld, delayed or conditioned,

the Company shall not effect any settlement of any pending or threatened proceeding in respect of which any Indemnified Person is or could have been a party and indemnity could have been sought hereunder by such Indemnified Person, unless such settlement includes an unconditional release of such Indemnified Person from all liability arising out of such proceeding.

Section 4.11 Short Sales and Confidentiality After The Date Hereof. Such Purchaser shall not, and shall cause its Trading Affiliates not to, engage, directly or indirectly, in any transactions in the Company's securities (including, without limitation, any Short Sales involving the Company's securities) during the period from the date hereof until the earlier of such time as (i) the transactions contemplated by this Agreement are first publicly announced as required by and described in Section 4.4 or (ii) this Agreement is terminated in full pursuant to Section 6.17. Each Purchaser, severally and not jointly with the other Purchasers, covenants that until such time as the transactions contemplated by this Agreement are publicly disclosed by the Company as described in Section 4.4, such Purchaser will maintain the confidentiality of the existence and terms of this transaction and the information included in the Transaction Documents and Disclosure Schedules. Notwithstanding the foregoing, no Purchaser makes any representation, warranty or covenant hereby that it will not engage in Short Sales in the securities of the Company after the time that the transactions contemplated by this Agreement are first publicly announced as described in Section 4.4 (subject to any written agreement between such Purchaser and the Company regarding the confidentiality and use of material non-public information); provided, however, each Purchaser agrees, severally and not jointly with any Purchasers, that they will not enter into any Net Short Sales (as hereinafter defined) from the period commencing on the Closing Date and ending on the earliest of (x) the Effective Date of the initial Registration Statement, (y) the second anniversary of the Closing Date or (z) the date that such Purchaser no longer holds any Securities. For purposes of this Section 4.11, a "Net Short Sale" by any Purchaser shall mean a sale of Common Stock by such Purchaser that is marked as a non-exempt short sale and that is made at a time when there is no equivalent offsetting long position in Common Stock held by such Purchaser. For purposes of determining whether there is an equivalent offsetting position in Common Stock held by the Purchaser, Warrant Shares that have not yet been issued pursuant to the exercise of Warrants shall be deemed to be held long by the Purchaser, and the amount of shares of Common Stock held in a long position shall be all Shares and unexercised Warrant Shares (ignoring any exercise limitations included therein) issuable to such Purchaser on such date, plus any shares of Common Stock or Common Stock Equivalents otherwise then held by such Purchaser. Notwithstanding the foregoing, in the event that a Purchaser is a multi-managed investment vehicle whereby separate portfolio managers manage separate portions of such Purchaser's assets and the portfolio managers have no direct knowledge of the investment decisions made by the portfolio managers managing other portions of such Purchaser's assets, the representation set forth above shall apply only with respect to the portion of assets managed by the portfolio manager that have knowledge about the financing transaction contemplated by this Agreement. Moreover, notwithstanding the foregoing, in the event that a Purchaser has sold Securities pursuant to Rule 144 prior to the Effective Date of the initial Registration Statement and the Company has failed to deliver certificates book-entry statements without legends prior to the settlement date for such sale (assuming that such certificates or book-entry statements meet the requirements set forth in Section 4.1(c) for the removal of legends), the provisions of this Section 4.11 shall not prohibit the Purchaser from entering into Net Short Sales for the purpose of delivering shares of Common Stock in settlement of such sale.

delivering shares of Common Stock in settlement of such sale.

Section 4.12 Delivery of Shares and Warrants After Closing. The Company shall deliver, or cause to be delivered, the respective Shares and Warrants purchased by each Purchaser to such Purchaser within three Trading Days of the Closing Date.

Section 4.13 [RESERVED]

Section 4.14 [RESERVED]

Section 4.15 No Dilutive Issuances. For a period of 90 days from the Closing Date, the Company may not offer or sell any Common Stock or Common Stock Equivalents for a per-share price (determined on an as-converted basis) of less than \$3.55 (adjusted for stock splits, reverse splits, etc.). Notwithstanding the foregoing, this Section 4.15 shall not apply in respect of the issuance of (a) shares of Common Stock or options to employees, consultants, officers or directors of the Company pursuant to any stock or option plan (or a bona fide inducement grant to new employees outside of any such plan) duly adopted by a majority of the non-employee members of the Board of Directors of the Company or a majority of the members of a committee of non-employee directors established for such purpose, (b) securities upon the exercise of or conversion of any convertible securities or warrants issued and outstanding on or prior to the date of or pursuant to this Agreement or any options held by current or former employees or consultants of the Company, (c) shares of Common Stock or securities convertible into Common Stock issued in connection with acquisitions, asset purchases, licenses, joint ventures, technology license agreements, collaborations or strategic transactions involving the Company and other entities approved by the Board of Directors, or (d) securities issued to financial institutions or lessors in connection with credit or lending arrangements, equipment financings or lease arrangements. The Company acknowledges that this covenant is a material inducement to cause the Purchasers to enter into this Agreement.

ARTICLE V

CONDITIONS PRECEDENT TO CLOSING

Section 5.1 5.1 Conditions Precedent to the Obligations of the Purchasers to Purchase Securities. The obligation of each Purchaser to acquire Shares and Warrants at the Closing is subject to the fulfillment to such Purchaser's satisfaction, on or prior to the Closing Date, of each of the following conditions, any of which may be waived by such Purchaser (as to itself only):

(a) **Representations and Warranties**. The representations and warranties of the Company contained herein shall be true and correct in all material respects (except for those representations and warranties which are qualified as to materiality, in which case such representations and warranties shall be true and correct in all respects) as of the date when made and as of the Closing Date, as though made on and as of such date, except for such representations and warranties that speak as of a specific date.

(b) **Performance**. The Company shall have performed, satisfied and complied in all material respects with all covenants, agreements and conditions required by the Transaction Documents to be performed, satisfied or complied with by it at or prior to the Closing.

(c) **No Injunction**. No statute, rule, regulation, executive order, decree, ruling

or injunction shall have been enacted, entered, promulgated or endorsed by any court or

governmental authority of competent jurisdiction that prohibits the consummation of any of the transactions contemplated by the Transaction Documents.

(d) Consents. The Company shall have obtained in a timely fashion any and all consents, permits, approvals, registrations and waivers necessary for consummation of the purchase and sale of the Securities at the Closing (including all Required Approvals), all of which shall be and remain so long as necessary in full force and effect.

(e) Adverse Change. Since the date of execution of this Agreement, no event or series of events shall have occurred that has had or would reasonably be expected to have a Material Adverse Effect.

(f) No Suspensions of Trading in Common Stock. The Common Stock shall not have been suspended, as of the Closing Date, by the Commission or the Principal Trading Market from trading on the Principal Trading Market nor shall suspension by the Commission or the Principal Trading Market have been threatened, as of the Closing Date, either (A) in writing by the Commission or the Principal Trading Market or (B) by falling below the minimum listing maintenance requirements of the Principal Trading Market.

(g) Company Deliverables. The Company shall have delivered the Company Deliverables in accordance with Section 2.2(a).

(h) Compliance Certificate. The Company shall have delivered to each Purchaser a certificate, dated as of the Closing Date and signed by its Chief Executive Officer or its Principal Accounting and Financial Officer, certifying to the fulfillment of the conditions specified in Sections 5.1(a) and (b).

(i) Termination. This Agreement shall not have been terminated as to such Purchaser in accordance with Section 6.17 herein.

Section 5.2 Conditions Precedent to the Obligations of the Company to sell Securities. The Company's obligation to sell and issue the Shares and Warrants at the Closing to the Purchasers is subject to the fulfillment to the satisfaction of the Company on or prior to the Closing Date of the following conditions, any of which may be waived by the Company:

(a) Representations and Warranties. The representations and warranties made by the Purchasers in Section 3.2 hereof shall be true and correct in all material respects (except for those representations and warranties which are qualified as to materiality, in which case such representations and warranties shall be true and correct in all respects) as of the date when made, and as of the Closing Date as though made on and as of such date, except for representations and warranties that speak as of a specific date.

(b) Performance. Such Purchaser shall have performed, satisfied and complied in all material respects with all covenants, agreements and conditions required by the Transaction Documents to be performed, satisfied or complied with by such Purchaser at or prior to the Closing Date.

(c) **No Injunction.** No statute, rule, regulation, executive order, decree, ruling or injunction shall have been enacted, entered, promulgated or endorsed by any court or governmental authority of competent jurisdiction that prohibits the consummation of any of the transactions contemplated by the Transaction Documents.

(d) **Consents.** The Company shall have obtained in a timely fashion any and all consents, permits, approvals, registrations and waivers necessary for consummation of the purchase and sale of the Securities at the Closing (including all Required Approvals), all of which shall be and remain so long as necessary in full force and effect.

(e) **Purchasers Deliverables.** Such Purchaser shall have delivered its Purchaser Deliverables in accordance with Section 2.2(b).

(f) **Termination.** This Agreement shall not have been terminated as to such Purchaser in accordance with Section 6.17 herein.

ARTICLE VI MISCELLANEOUS

Section 6.1 **Fees and Expenses.** The Company and each Purchaser, severally and not jointly with any other Purchaser, shall pay the fees and expenses of their respective advisers, counsel, accountants and other experts, if any, and all other expenses incurred by such party in connection with the negotiation, preparation, execution, delivery and performance of this Agreement. The Company shall pay all Transfer Agent fees, stamp taxes and other taxes and duties levied in connection with the sale and issuance of the Securities to the Purchasers. Each Purchaser, severally and not jointly with any other Purchaser, shall be responsible for all other tax liability that may arise as a result of holding or transferring the Securities by it. Notwithstanding the foregoing, the Company shall reimburse the Lead Investor for its fees and expenses incurred in connection with the purchase of the Securities and the registration of such Securities under the Registration Rights Agreement, such fees not to exceed \$25,000 in the aggregate.

Section 6.2 **Entire Agreement.** The Transaction Documents, together with the exhibits and schedules thereto, and any confidentiality or nondisclosure agreement entered into prior to the date of this Agreement with respect to the transactions contemplated thereby, contain the entire understanding of the parties with respect to the subject matter hereof and supersede all prior agreements, understandings, discussions and representations, oral or written, with respect to such matters, which the parties acknowledge have been merged into such documents, exhibits and schedules. At or after the Closing, and without further consideration, the Company and the Purchasers will execute and deliver to the other such further documents as may be reasonably requested in order to give practical effect to the intention of the parties under the Transaction Documents.

Section 6.3 **Notices.** Any and all notices or other communications or deliveries required or permitted to be provided hereunder shall be in writing and shall be deemed given and effective on the earliest of (a) the date of transmission, if such notice or communication is delivered via facsimile (provided the sender receives a machine-generated confirmation of



successful transmission) at the facsimile number specified in this Section 6.3 prior to 5:00 p.m., New York City time, on a Trading Day, (b) the next Trading Day after the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number specified in this Section 6.3 on a day that is not a Trading Day or later than 5:00 p.m., New York City time, on any Trading Day, (c) the Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service with next day delivery specified, or (d) upon actual receipt by the party to whom such notice is required to be given. The address for such notices and communications shall be as follows:

If to the Company: Pieris Pharmaceuticals, Inc.
255 State Street
Boston, MA 02109
Telephone No.: (857) 246-8998

Attention: Ahmed Mousa, General Counsel
Email: mousa@pieris.com

With a copy to (which shall not constitute notice):

Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.
One Financial Center
Boston, MA 02111
Telephone No.: (617) 542-6000
Attention: William C. Hicks
Marc D. Mantell
Email: WCHicks@mintz.com
MDMantell@mintz.com

If to a Purchaser: To the address set forth under such Purchaser's name on the signature page hereof; or such other address as may be designated in writing hereafter, in the same manner, by such Person.

Section 6.4 Amendments; Waivers; No Additional Consideration. No provision of this Agreement may be waived, modified, supplemented or amended except in a written instrument signed, in the case of an amendment, by the Company and the Purchasers holding or having the right to acquire a majority of the Shares and the Warrant Shares on a fully-diluted basis at the time of such amendment (which amendment shall be binding on all Purchasers or, in the case of a waiver, by the party against whom enforcement of any such waiver is sought). No waiver of any default with respect to any provision, condition or requirement of this Agreement shall be deemed to be a continuing waiver in the future or a waiver of any subsequent default or a waiver of any other provision, condition or requirement hereof, nor shall any delay or omission of either party to exercise any right hereunder in any manner impair the exercise of any such right. No consideration shall be offered or paid to any Purchaser to amend or consent to a waiver or modification of any provision of any Transaction Document that, by its terms, applies to all



Purchasers, unless the same consideration is also offered to all Purchasers who then hold Securities.

Section 6.5 Construction. The headings herein are for convenience only, do not constitute a part of this Agreement and shall not be deemed to limit or affect any of the provisions hereof. The language used in this Agreement will be deemed to be the language chosen by the parties to express their mutual intent, and no rules of strict construction will be applied against any party. This Agreement shall be construed as if drafted jointly by the parties, and no presumption or burden of proof shall arise favoring or disfavoring any party by virtue of the authorship of any provisions of this Agreement or any of the Transaction Documents.

Section 6.6 Successors and Assigns. The provisions of this Agreement shall inure to the benefit of and be binding upon the parties and their successors and permitted assigns. This Agreement, or any rights or obligations hereunder, may not be assigned by the Company without the written consent of Purchasers holding or having the right to acquire a majority of the Shares and the Warrant Shares on a fully-diluted basis at the time of such consent except to a successor in the event of a Fundamental Transaction. Any Purchaser may assign its rights hereunder in whole or in part to any Person to whom such Purchaser assigns or transfers any Securities in compliance with the Transaction Documents and applicable law, provided that such transferee shall agree in writing to be bound, with respect to the transferred Securities, by the terms and conditions of this Agreement that apply to the "Purchasers".

Section 6.7 No Third-Party Beneficiaries. This Agreement is intended for the benefit of the parties hereto and their respective successors and permitted assigns and is not for the benefit of, nor may any provision hereof be enforced by, any other Person, except (i) the Placement Agent is an intended third party beneficiary of Article III hereof and (ii) each Purchaser Party is an intended third party beneficiary of Section 4.10.

Section 6.8 Survival. Subject to applicable statute of limitations, the representations, warranties agreements and covenants contained herein shall survive the Closing and the delivery of the Securities and any confidentiality or nondisclosure obligations set forth in any agreement entered into prior to the date of this Agreement with respect to the transactions contemplated by the Transaction Documents shall survive according to the terms of such agreements.

Section 6.9 Execution. This Agreement may be executed in two or more counterparts, all of which when taken together shall be considered one and the same agreement and shall become effective when counterparts have been signed by each party and delivered to the other party, it being understood that both parties need not sign the same counterpart. In the event that any signature is delivered by facsimile transmission, or by e-mail delivery of a ".pdf" format data file, such signature shall create a valid and binding obligation of the party executing (or on whose behalf such signature is executed) with the same force and effect as if such facsimile signature page were an original thereof.

Section 6.10 Severability. If any provision of this Agreement is held to be invalid or unenforceable in any respect, the validity and enforceability of the remaining terms and provisions of this Agreement shall not in any way be affected or impaired thereby and the parties



will attempt to agree upon a valid and enforceable provision that is a reasonable substitute therefor, and upon so agreeing, shall incorporate such substitute provision in this Agreement.

Section 6.11 Replacement of Securities. If any certificate or instrument evidencing any Securities is mutilated, lost, stolen or destroyed, the Company shall issue or cause to be issued in exchange and substitution for and upon cancellation thereof, or in lieu of and substitution therefor, a new certificate or instrument, but only upon receipt of evidence reasonably satisfactory to the Company and the Transfer Agent of such loss, theft or destruction and the execution by the holder thereof of a customary lost certificate affidavit of that fact and an agreement to indemnify and hold harmless the Company and the Transfer Agent for any losses in connection therewith or, if required by the Transfer Agent, a bond in such form and amount as is required by the Transfer Agent. The applicants for a new certificate or instrument under such circumstances shall also pay any reasonable third-party costs associated with the issuance of such replacement Securities. If a replacement certificate or instrument evidencing any Securities is requested due to a mutilation thereof, the Company may require delivery of such mutilated certificate or instrument as a condition precedent to any issuance of a replacement.

Section 6.12 Remedies. In addition to being entitled to exercise all rights provided herein or granted by law, including recovery of damages, each of the Purchasers and the Company will be entitled to specific performance under the Transaction Documents. The parties agree that monetary damages may not be adequate compensation for any loss incurred by reason of any breach of obligations described in the foregoing sentence and hereby agree to waive in any Action for specific performance of any such obligation (other than in connection with any Action for a temporary restraining order) the defense that a remedy at law would be adequate.

Section 6.13 Payment Set Aside. To the extent that the Company makes a payment or payments to any Purchaser pursuant to any Transaction Document or a Purchaser enforces or exercises its rights thereunder, and such payment or payments or the proceeds of such enforcement or exercise or any part thereof are subsequently invalidated, declared to be fraudulent or preferential, set aside, recovered from, disgorged by or are required to be refunded, repaid or otherwise restored to the Company, a trustee, receiver or any other Person under any law (including, without limitation, any bankruptcy law, state or federal law, common law or equitable cause of action), then to the extent of any such restoration the obligation or part thereof originally intended to be satisfied shall be revived and continued in full force and effect as if such payment had not been made or such enforcement or setoff had not occurred.

Section 6.14 Adjustments in Share Numbers and Prices. In the event of any stock split, subdivision, dividend or distribution payable in shares of Common Stock (or other securities or rights convertible into, or entitling the holder thereof to receive directly or indirectly shares of Common Stock), combination or other similar recapitalization or event occurring after the date hereof and prior to the Closing, each reference in any Transaction Document to a number of shares or a price per share shall be deemed to be amended to appropriately account for such event.

Section 6.15 Governing Law. All questions concerning the construction, validity, enforcement and interpretation of this Agreement shall be governed by and construed and enforced in accordance with the internal laws of the State of New York, without regard to the



principles of conflicts of law thereof. Each party agrees that all Proceedings concerning the interpretations, enforcement and defense of the transactions contemplated by this Agreement and any other Transaction Documents (whether brought against a party hereto or its respective Affiliates, employees or agents) shall be commenced exclusively in the New York Courts. Each party hereto hereby irrevocably submits to the exclusive jurisdiction of the New York Courts for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein (including with respect to the enforcement of any of the Transaction Documents), and hereby irrevocably waives, and agrees not to assert in any Proceeding, any claim that it is not personally subject to the jurisdiction of any such New York Court, or that such Proceeding has been commenced in an improper or inconvenient forum. Each party hereto hereby irrevocably waives personal service of process and consents to process being served in any such Proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. EACH PARTY HERETO HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY.

Section 6.16 Waiver of Conflicts. Each Purchaser acknowledges that Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., outside general counsel to the Company, has in the past performed and is or may now or in the future represent one or more Purchasers or their Affiliates in matters unrelated to the transactions contemplated by the this Agreement, including representation of such Purchasers or their Affiliates in matters of a similar nature to the transactions contemplated by this Agreement. The applicable rules of professional conduct require that Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. inform the Purchasers hereunder of this representation and obtain their consent. Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. has served as outside general counsel to the Company and has negotiated the terms of this Agreement solely on behalf of the Company. Each Purchaser hereby (a) acknowledges that they have had an opportunity to ask for and have obtained information relevant to such representation; (b) acknowledges that with respect to the transactions contemplated by this Agreement, Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. has represented solely the Company, and not any Purchaser or any stockholder, director or employee of the Company or any Purchaser; and (c) gives its informed consent to Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.'s representation of the Company in the transactions contemplated by this Agreement.

Section 6.17 Termination. This Agreement may be terminated and the sale and purchase of the Shares and the Warrants abandoned at any time prior to the Closing by either the Company or any Purchaser (with respect to itself only) upon written notice to the other, if the Closing has not been consummated on or prior to 5:00 p.m., New York City time, on the Outside Date; provided, however, that the right to terminate this Agreement under this Section 6.17 shall not be available to any Person whose failure to comply with its obligations under this Agreement has been the cause of or resulted in the failure of the Closing to occur on or before such time. Nothing in this Section 6.17 shall be deemed to release any party from any liability for any

Nothing in this Section 6.17 shall be deemed to release any party from any liability for any

breach by such party of the terms and provisions of this Agreement or the other Transaction Documents or to impair the right of any party to compel specific performance by any other party of its obligations under this Agreement or the other Transaction Documents. In the event of a termination pursuant to this Section 6.17, the Company shall promptly notify all non-terminating Purchasers. Upon a termination in accordance with this Section 6.17, the Company and the terminating Purchaser(s) shall not have any further obligation or liability (including arising from such termination) to the other, and no Purchaser will have any liability to any other Purchaser under the Transaction Documents as a result thereof. The Company and any Purchaser(s) may extend the term of this Agreement in accordance with the amendment provisions of Section 6.4 herein.

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IN WITNESS WHEREOF, the parties hereto have caused this Securities Purchase Agreement to be duly executed by their respective authorized signatories as of the date first indicated above.

PIERIS PHARMACEUTICALS, INC.

By: /s/ Stephen Yoder
Name: Stephen Yoder
Title: CEO

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[SIGNATURE PAGES FOR PURCHASERS FOLLOW]

[Signature Page to Securities Purchase Agreement]

NAME OF PURCHASER:

AQUILO CAPITAL, L.P.

By: /s/ Marc Schneidman _____

Name: Marc Schneidman

Title: Managing Member, Aquilo Capital Management, LLC, General Partner

Aggregate Purchase Price (Subscription Amount): \$4,000,001.55

Number and Type of Shares to be Acquired:

Common Stock: 1,126,761

Preferred Stock: N/A

Warrant Shares: 1,126,761

Tax ID No.: _____

Address for Notice/Residency of Purchaser:

Delivery Instructions (if different than above):

[Signature Page to Securities Purchase Agreement]

NAME OF PURCHASER:

Biotechnology Value Fund, L.P.

By: /s/ Mark Lampert

Name: Mark Lampert

Title: President BVF Inc., GP BVF Partners L.P.

Aggregate Purchase Price (Subscription Amount): \$6,375,800.00

Number and Type of Shares to be Acquired:

Common Stock: N/A

Preferred Stock: 1,796

Warrant Shares: 1,796,000

Tax ID No.: _____

Address for Notice/Residency of Purchaser:

Delivery Instructions (if different than above):

[Signature Page to Securities Purchase Agreement]

NAME OF PURCHASER:

Biotechnology Value Fund II, L.P.

By: /s/ Mark Lampert

Name: Mark Lampert

Title: President BVF Inc., GP BVF Partners L.P.

Aggregate Purchase Price (Subscription Amount): \$5,129,750.00

Number and Type of Shares to be Acquired:

Common Stock: N/A

Preferred Stock: 1,445

Warrant Shares: 1,445,000

Tax ID No.: _____

Address for Notice/Residency of Purchaser:

Delivery Instructions (if different than above):

[Signature Page to Securities Purchase Agreement]

NAME OF PURCHASER:

Biotechnology Value Trading Fund OS, L.P.

By: /s/ Mark Lampert

Name: Mark Lampert

Title: President BVF Inc., GP BVF Partners L.P., Sole Member BVF Partners OS, Ltd.

Aggregate Purchase Price (Subscription Amount): \$940,750.00

Number and Type of Shares to be Acquired:

Common Stock: N/A

Preferred Stock: 265

Warrant Shares: 265,000

Tax ID No.: _____

Address for Notice/Residency of Purchaser:

Delivery Instructions (if different than above):

[Signature Page to Securities Purchase Agreement]

NAME OF PURCHASER:

MSI BVF SPV L.L.C.

By: /s/ Mark Lampert

Name: Mark Lampert

Title: President BVF Inc., GP BVF Partners L.P., Attorney-In-Fact

Aggregate Purchase Price (Subscription Amount): \$56,800.00

Number and Type of Shares to be Acquired:

Common Stock: N/A

Preferred Stock: 16

Warrant Shares: 16,000

Tax ID No.: _____

Address for Notice/Residency of Purchaser:

Delivery Instructions (if different than above):

[Signature Page to Securities Purchase Agreement]

NAME OF PURCHASER:

EcoR1 Capital Fund, LP

By: /s/ Oleg Nodelman

Name: Oleg Nodelman

Title: Manger, EcoR1 Capital LLC, as General Partner

Aggregate Purchase Price (Subscription Amount): \$1,508,402.10

Number and Type of Shares to be Acquired:

Common Stock: 424,902

Preferred Stock: n/a

Warrant Shares: 424,902

Tax ID No.: _____

Address for Notice/Residency of Purchaser:

Delivery Instructions (if different than above):

[Signature Page to Securities Purchase Agreement]

NAME OF PURCHASER:

EcoR1 Capital Fund Qualified LP

By: /s/ Oleg Nodelman _____

Name: Oleg Nodelman

Title: Manger, EcoR1 Capital LLC, as General Partner

Aggregate Purchase Price (Subscription Amount): \$7,491,600.50

Number and Type of Shares to be Acquired:

Common Stock: 2,110,310 _____

Preferred Stock: n/a _____

Warrant Shares: 2,110,310 _____

Tax ID No.: _____

Address for Notice/Residency of Purchaser:

Delivery Instructions (if different than above):

[Signature Page to Securities Purchase Agreement]

NAME OF PURCHASER:

Samsara BioCapital, L.P.

By: Samsara BioCapital GP, LLC

By: /s/ Srinivas Akkaraju, MD, PhD

Name: Srinivas Akkaraju, MD, PhD

Title: Managing Member

Aggregate Purchase Price (Subscription Amount): \$2,500,002.30

Number and Type of Shares to be Acquired:

Common Stock: 704,226

Preferred Stock: n/a

Warrant Shares: 704,226

Tax ID No.: _____

Address for Notice/Residency of Purchaser:

Delivery Instructions (if different than above):

[Signature Page to Securities Purchase Agreement]

NAME OF PURCHASER:

Citadel Multi-Strategy Equities Master Fund Ltd.

By: Citadel Advisors LLC, its portfolio manager

By: /s/ Shellane Mulcahy

Name: Shellane Mulcahy

Title: Authorized Signatory

Aggregate Purchase Price (Subscription Amount): \$4,000,001.55

Number and Type of Shares to be Acquired:

Common Stock: 1,126,761

Preferred Stock: n/a

Warrant Shares: 1,126,761

Tax ID No.: _____

Address for Notice/Residency of Purchaser:

Delivery Instructions (if different than above):

EXHIBITS

A: Form of Warrant

B: Form of Registration Rights Agreement

C: Form of Opinion of Company Counsel

D: Form of Irrevocable Transfer Agent Instructions

E: Form of Certificate of Designation

F: Accredited Investor Questionnaire

EXHIBIT A

Form of Warrant

EXHIBIT B

Form of Registration Rights Agreement

EXHIBIT C-1

Form of Opinion of Company Counsel

EXHIBIT C-2

Form of Opinion of Nevada Counsel

EXHIBIT D

Irrevocable Transfer Agent Instructions

EXHIBIT E

Form of Certificate of Designation

EXHIBIT F
ACCREDITED INVESTOR QUESTIONNAIRE

NEITHER THESE SECURITIES NOR THE SECURITIES ISSUABLE UPON EXERCISE OF THESE SECURITIES HAVE BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), OR APPLICABLE STATE SECURITIES LAWS. THE SECURITIES MAY NOT BE OFFERED FOR SALE, SOLD, TRANSFERRED OR ASSIGNED (I) IN THE ABSENCE OF (A) AN EFFECTIVE REGISTRATION STATEMENT FOR THE SECURITIES UNDER THE SECURITIES ACT OR (B) AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS OR BLUE SKY LAWS AS EVIDENCED BY A LEGAL OPINION OF COUNSEL REASONABLY SATISFACTORY TO THE COMPANY AND ITS TRANSFER AGENT OR (II) UNLESS SOLD PURSUANT TO RULE 144 UNDER THE SECURITIES ACT.

PIERIS PHARMACEUTICALS, INC.

WARRANT TO PURCHASE COMMON STOCK

Original Issue Date: November __, 2019

Pieris Pharmaceuticals, Inc., a Nevada corporation (the "**Company**"), hereby certifies that, for value received, _____ or its permitted registered assigns (the "**Holder**"), is entitled to purchase from the Company up to a total of _____ shares of common stock, \$0.001 par value per share (the "**Common Stock**"), of the Company (the "**Warrant Shares**") at an exercise price per share equal to \$7.10 per share (as adjusted from time to time as provided in Section 9 herein, the "**Exercise Price**"), at any time and from time to time on or after the date hereof (the "**Original Issue Date**") and through and including the Expiration Date (defined below), subject to the following terms and conditions:

This Warrant (this "**Warrant**") is one of a series of similar tranche of warrants issued pursuant to that certain Securities Purchase Agreement, dated November 2, 2019, by and among the Company and the Purchasers identified therein (the "**Purchase Agreement**"). All such Warrants are referred to herein, collectively, as the "**Warrants**."

1. **Definitions.** In addition to the terms defined elsewhere in this Warrant, capitalized terms that are not otherwise defined herein have the meanings given to such terms in the Purchase Agreement.

"**Expiration Date**" means the 5:30 p.m. (ET) on the fifth anniversary of the Original Issue Date, provided that if the Performance Condition is satisfied, then the Expiration Date shall accelerate and shall be 5:30 p.m. (ET) on the 60th calendar day following the date of the Initial Data Disclosure.

"**Initial Data Disclosure**" means the initial public disclosure by means of a press release, 8-K, presentation, abstract or other similar disclosure of the top-line results of at least one dose level investigated in the Phase 2a Study that includes the "p" value achieved for the primary endpoint of such study with respect to at least one dose level investigated in the Phase 2a Study.

"**Performance Condition**" means the satisfaction of both of the following conditions: (i) the Initial Data Disclosure reveals top-line data on the primary efficacy endpoint in the Phase 2a Study with a "p" value below 0.05 (i.e., $p < 0.05$) in at least one dose level; and (ii) the 10-day volume weighted average stock price (as reported by Bloomberg) commencing on the Trading Day immediately after the Initial Data Disclosure is equal to, or greater than, three percent (3%) more than the Exercise Price.

"**Phase 2a Study**" means the Phase 2a study of the investigational compound PRS-060/AZD1402 in moderate-to-severe asthma.

2. **Registration of Warrants.** The Company shall register this Warrant, upon records to be maintained by the Company for that purpose, which may be a third-party transfer agent (the "**Warrant Register**"), in the name of the record Holder (which shall include the initial Holder or, as the case may be, any registered assignee to which

this Warrant is permissibly assigned hereunder) from time to time. The Company may deem and treat the registered Holder of this Warrant as the absolute owner hereof for the purpose of any exercise hereof or any distribution to the Holder, and for all other purposes, absent actual notice to the contrary.

3. **Registration of Transfers.** Subject to the restrictions on transfer set forth in Section 4.1 of the Purchase Agreement and compliance with all applicable securities laws, the Company shall register the transfer of all or any portion of this Warrant in the Warrant Register, upon surrender of this Warrant, with the Form of Assignment attached as Schedule 2 hereto duly completed and signed, to the Company's transfer agent or to the Company at its address specified in the Purchase Agreement and (x) delivery, at the request of the Company, of an opinion of counsel reasonably satisfactory to the Company to the effect that the transfer of such portion of this Warrant may be made pursuant to an available exemption from the registration requirements of the Securities Act and all applicable state securities or blue sky laws (other than in connection with any transfer (i) pursuant to an effective registration statement, (ii) to the Company, (iii) pursuant to Rule 144), and (y) delivery by the transferee of a written statement to the Company certifying that the transferee is an "accredited investor" as defined in Rule 501(a) under the Securities Act to the Company at its address specified in the Purchase Agreement. Upon any such registration or transfer, a new warrant to purchase Common Stock in substantially the form of this Warrant (any such new warrant, a "**New Warrant**") evidencing the portion of this Warrant so transferred shall be issued to the transferee, and a New Warrant evidencing the remaining portion of this Warrant not so transferred, if any, shall be issued to the transferring Holder. The acceptance of the New Warrant by the transferee thereof shall be deemed the acceptance by such transferee of all of the rights and obligations in respect of the New Warrant that the Holder has in respect of this Warrant. The Company shall prepare, issue and deliver at its own expense any New Warrant under this Section 3.

4. **Exercise and Duration of Warrant.**

(a) All or any part of this Warrant shall be exercisable by the registered Holder in any manner permitted by Section 10 of this Warrant at any time and from time to time on or after the Original Issue Date and through and including 5:30 p.m. New York City time, on the Expiration Date. At 5:30 p.m., New York City time, on the Expiration Date, the portion (or all) of this Warrant not exercised prior thereto shall be and become void and of no value and this Warrant shall be automatically terminated and no longer outstanding, *provided, however*, that if the Performance Condition has not been met and the last reported Closing Sale Price immediately prior to the Expiration Date was greater than the Exercise Price, then this Warrant shall be automatically deemed exercised on a cashless basis as of 4:01 p.m. (ET) on the Expiration Date.

(b) The Holder may exercise this Warrant by delivering to the Company (i) an exercise notice, in the form attached as Schedule 1 hereto (the "**Exercise Notice**"), completed and duly signed, and (ii) payment of the Exercise Price for the number of Warrant Shares as to which this Warrant is being exercised (which may, if, and only if, following the Initial Data Disclosure, the Performance Condition has not been met, take the form of a "cashless exercise" if so indicated in the Exercise Notice and if a "cashless exercise" may occur at such time pursuant to Section 10 below), and the date on which Exercise Notice is delivered to the Company (as determined in accordance with the notice provisions hereof) is an "**Exercise Date**." The delivery by (or on behalf of) the Holder of the Exercise Notice and the applicable Exercise Price as provided above shall constitute the Holder's certification to the Company that its representations contained in Section 3.2 of the Purchase Agreement are true and correct as of the Exercise Date and the date on which Holder pays the Company the Exercise Price as if remade in their entirety (or, in the case of any transferee Holder that is not a party to the Purchase Agreement, such transferee Holder's certification to the Company that such representations are true and correct as to such assignee Holder as of the Exercise Date). The Holder shall not be required to deliver the original Warrant in order to effect an exercise hereunder, but if it is not so delivered then such exercise shall constitute an agreement by the Holder to deliver the original Warrant to the Company as soon as practicable thereafter. Execution and delivery of the Exercise Notice shall have the same effect as cancellation of the original Warrant and issuance of a New Warrant evidencing the right to purchase the remaining number of Warrant Shares.

5. **Delivery of Warrant Shares.**



(a) Upon exercise of this Warrant and delivery of the Exercise Price, the Company shall promptly (but in no event later than two Trading Days after the later of the Exercise Date and delivery of the Exercise Price) issue or cause to be issued and cause to be delivered to or upon the written order of the Holder and in such name or names as the Holder may designate (provided that, if the Registration Statement is not effective and the Holder directs the Company to deliver a certificate for the Warrant Shares in a name other than that of the Holder or an Affiliate of the Holder, it shall deliver to the Company on the Exercise Date an opinion of counsel reasonably satisfactory to the Company to the effect that the issuance of such Warrant Shares in such other name may be made pursuant to an available exemption from the registration requirements of the Securities Act and all applicable state securities or blue sky laws), (i) a certificate for the Warrant Shares issuable upon such exercise, free of restrictive legends, or (ii) an electronic delivery of the Warrant Shares to the Holder's account at the Depository Trust Company ("**DTC**") or a similar organization, unless in the case of clause (i) and (ii) a registration statement covering the resale of the Warrant Shares and naming the Holder as a selling stockholder thereunder is not then effective or the Warrant Shares are not freely transferable without restriction under Rule 144 by Holders who are not affiliates of the Company, in which case such Holder shall receive a certificate for the Warrant Shares issuable upon such exercise with appropriate restrictive legends. The Holder, or any Person permissibly so designated by the Holder to receive Warrant Shares, shall be deemed to have become the holder of record of such Warrant Shares as of the Exercise Date. Notwithstanding anything contained herein to the contrary, if the Holder fails to deliver the documents required to register a transferee as set forth in Section 3 above or to provide the documents required under this Section 5(a) to issue a certificate or electronic delivery of the Warrant Shares to any Person(s) other than the Holder, then determination of the three Trading Days shall be tolled until such documents have been delivered to the Company. If the Warrant Shares are to be issued free of all restrictive legends, the Company shall, upon the written request of the Holder, use its reasonable best efforts to deliver, or cause to be delivered, Warrant Shares hereunder electronically through DTC or another established clearing corporation performing similar functions, if available; provided, that, the Company may, but will not be required to, change its transfer agent if its current transfer agent cannot deliver Warrant Shares electronically through such a clearing corporation. "**Trading Day**" means any day on which the Common Stock are traded on the Principal Market, or, if the Principal Market is not the principal trading market for the Common Stock, then on the principal securities exchange or securities market on which the Common Stock is then traded; *provided that* "**Trading Day**" shall not include any day on which the Common Stock is scheduled to trade on such exchange or market for less than 4.5 hours or any day that the Common Stock are suspended from trading during the final hour of trading on such exchange or market (or if such exchange or market does not designate in advance the closing time of trading on such exchange or market, then during the hour ending at 4:00:00 p.m., New York time).

(b) If by the close of the second Trading Day after delivery of a properly completed Exercise Notice and the payment of the aggregate Exercise Price in any manner permitted by Section 10 of this Warrant, the Company fails to deliver to the Holder a certificate representing the required number of Warrant Shares in the manner required pursuant to Section 5(a), and if after such second Trading Day and prior to the receipt of such Warrant Shares, the Holder is required to purchase (in an open market transaction or otherwise) shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "**Buy-In**"), then the Company shall, in its sole discretion, within two Trading Days after the Holder's request for payment, either (1) pay in cash to the Holder an amount equal to the Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased, at which point the number of Warrant Shares underlying this Warrant equal to the number of shares of Common Stock so purchased shall be forfeited and the Company's obligation to deliver such certificate (and to issue such Warrant Shares) shall terminate or (2) promptly honor its obligation to deliver to the Holder a certificate or certificates representing such Warrant Shares and pay cash to the Holder in an amount equal to the excess (if any) of Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased in the Buy-In over the product of (A) the number of shares of Common Stock purchased in the Buy-In, multiplied by (B) the closing bid price of a share of Common Stock on the Exercise Date. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In, together with applicable confirmations and other evidence reasonably requested by the Company.

(c) To the extent permitted by law, the Company's obligations to issue and deliver Warrant Shares in accordance with and subject to the terms hereof (including the limitations set forth in Section 11 below) are absolute and unconditional, irrespective of any action or inaction by the Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any Person or any action to enforce the

same, or any setoff, counterclaim, recoupment, limitation or termination, or any breach or alleged breach by the Holder or any other Person of any obligation to the Company (other than breaches related to this Warrant or the Purchase Agreement) or any violation or alleged violation of law by the Holder or any other Person, and irrespective of any other circumstance that might otherwise limit such obligation of the Company to the Holder in connection with the issuance of Warrant Shares. Nothing herein shall limit the Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver certificates representing shares of Common Stock upon exercise of the Warrant as required pursuant to the terms hereof.

6. Charges, Taxes and Expenses. Issuance and delivery of certificates for shares of Common Stock upon exercise of this Warrant shall be made without charge to the Holder for any issue or transfer tax, transfer agent fee or other incidental tax or expense in respect of the issuance of such certificates, all of which taxes and expenses shall be paid by the Company; *provided, however*, that the Company shall not be required to pay any tax that may be payable in respect of any transfer involved in the registration of any certificates for Warrant Shares or the Warrants in a name other than that of the Holder or an Affiliate thereof. The Holder shall be responsible for all other tax liability that may arise as a result of holding or transferring this Warrant or receiving Warrant Shares upon exercise hereof.

7. Replacement of Warrant. If this Warrant is mutilated, lost, stolen or destroyed, the Company shall issue or cause to be issued in exchange and substitution for and upon cancellation hereof, or in lieu of and substitution for this Warrant, a New Warrant, but only upon receipt of evidence reasonably satisfactory to the Company of such loss, theft or destruction (in such case) and, in each case, a customary and reasonable indemnity and surety bond, if requested by the Company. Applicants for a New Warrant under such circumstances shall also comply with such other reasonable regulations and procedures and pay such other reasonable third-party costs as the Company may prescribe. If a New Warrant is requested as a result of a mutilation of this Warrant, then the Holder shall deliver such mutilated Warrant to the Company as a condition precedent to the Company's obligation to issue the New Warrant.

8. Reservation of Warrant Shares. The Company represents and warrants that on the date hereof, it has duly authorized and reserved, and covenants that it will at all times during the period this Warrant is outstanding reserve and keep available out of the aggregate of its authorized but unissued and otherwise unreserved Common Stock, solely for the purpose of enabling it to issue Warrant Shares upon exercise of this Warrant as herein provided, the number of Warrant Shares that are initially issuable and deliverable upon the exercise of this entire Warrant, free from preemptive rights or any other contingent purchase rights of persons other than the Holder (taking into account the adjustments and restrictions of Section 9). The Company covenants that all Warrant Shares so issuable and deliverable shall, upon issuance and the payment of the applicable Exercise Price in accordance with the terms hereof, be duly and validly authorized, issued and fully paid and non-assessable and free from all taxes, liens and charges created by the Company in respect of the original issuance thereof (other than taxes in respect of any transfer occurring contemporaneously with such issue). The Company further covenants that its issuance of this Warrant shall constitute full authority to its officers who are charged with the duty of executing stock certificates to execute and issue the necessary certificates for the Warrant Shares upon the exercise of the purchase rights under this Warrant. The Company represents and warrants that the Warrant Shares, when issued and paid for in accordance with the terms of the Transaction Documents and the Warrants, will be issued free and clear of all security interests, claims, liens and other encumbrances other than restrictions imposed by applicable securities laws. The Company will take all such action as may be reasonably necessary to assure that such shares of Common Stock may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of any securities exchange or automated quotation system upon which the Common Stock may be listed.

9. Certain Adjustments. The Exercise Price and number of Warrant Shares issuable upon exercise of this Warrant are subject to adjustment from time to time as set forth in this Section 9.

(a) Stock Dividends and Splits. If the Company, at any time while this Warrant is outstanding, (i) pays a stock dividend on its Common Stock or otherwise makes a distribution on any class of capital stock that is payable in shares of Common Stock, (ii) subdivides its outstanding shares of Common Stock into a larger number of shares, (iii) combines (by combination, reverse stock split or otherwise) its outstanding shares of Common Stock

into a smaller number of shares or (iv) issues by reclassification of shares of Common Stock any shares of capital

stock of the Company, then in each such case the Exercise Price shall be adjusted to a price determined by multiplying the Exercise Price in effect immediately prior to the effective date of such event by a fraction, the numerator of which shall be the number of shares of Common Stock outstanding on such effective date immediately before giving effect to such event and the denominator of which shall be the number of shares of Common Stock outstanding immediately after giving effect to such event. Any adjustment made pursuant to clause (i) of this paragraph shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution, and any adjustment pursuant to clause (ii), (iii) or (iv) of this paragraph shall become effective immediately after the effective date of such subdivision, combination or reclassification.

(b) Pro Rata Distributions. If the Company, at any time while this Warrant is outstanding, distributes to all holders of Common Stock for no consideration (i) evidences of its indebtedness, (ii) any security (other than a distribution of Common Stock covered by the preceding paragraph) or (iii) rights or warrants to subscribe for or purchase any security, or (iv) any other asset, including cash (in each case, "**Distributed Property**"), except, in the case of subsections (b)(i) through (b)(iv) hereof, for any distributions pursuant to a shareholders' rights plan or similar takeover defense agreement or plan adopted by the Company, then, upon any exercise of this Warrant that occurs after the record date fixed for determination of stockholders entitled to receive such distribution, the Holder shall be entitled to receive, in addition to the Warrant Shares otherwise issuable upon such exercise (if applicable), the Distributed Property that such Holder would have been entitled to receive in respect of such number of Warrant Shares had the Holder been the record holder of such Warrant Shares immediately prior to such record date.

(c) Fundamental Transactions. If, at any time while this Warrant is outstanding (i) the Company effects (A) any merger of the Company with (but not into) another Person, in which stockholders of the Company immediately prior to such transaction own less than a majority of the outstanding stock of the surviving entity, or (B) any merger or consolidation of the Company into another Person, (ii) the Company effects any sale of all or substantially all of its assets in one or a series of related transactions, (iii) any tender offer or exchange offer approved or authorized by the Company's Board of Directors is completed pursuant to which holders of at least a majority of the outstanding Common Stock tender or exchange their shares for other securities, cash or property, or (iv) the Company effects any reclassification of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property (other than as a result of a subdivision or combination of shares of Common Stock covered by Section 9(a) above or as a result of a transaction, the primary purpose of which is to change the jurisdiction of incorporation of the Company) (in any such case, a "**Fundamental Transaction**"), then the Holder shall have the right thereafter to receive, upon exercise of this Warrant, the same amount and kind of securities, cash or property as it would have been entitled to receive upon the occurrence of such Fundamental Transaction if it had been, immediately prior to such Fundamental Transaction, the holder of the number of Warrant Shares then issuable upon exercise in full of this Warrant without regard to any limitations on exercise contained herein (the "**Alternate Consideration**"), and the Holder shall no longer have the right to receive Warrant Shares upon exercise of this Warrant. The Company shall not effect any such Fundamental Transaction unless prior to or simultaneously with the consummation thereof, any successor to the Company, surviving entity or the corporation purchasing or otherwise acquiring such assets or other appropriate corporation or Person shall assume the obligation to deliver to the Holder, such Alternate Consideration as, in accordance with the foregoing provisions, the Holder may be entitled to receive, and the other obligations under this Warrant. The provisions of this paragraph (c) shall similarly apply to subsequent transactions of an analogous type to any Fundamental Transaction.

(d) Number of Warrant Shares. Simultaneously with any adjustment to the Exercise Price pursuant to paragraph (a) of this Section 9, the number of Warrant Shares that may be purchased upon exercise of this Warrant shall be increased or decreased proportionately, so that after such adjustment the aggregate Exercise Price payable hereunder for the increased or decreased number of Warrant Shares shall be the same as the aggregate Exercise Price in effect immediately prior to such adjustment.

(e) Calculations. All calculations under this Section 9 shall be made to the nearest cent or the nearest share, as applicable.

(f) Notice of Adjustments. Upon the occurrence of each adjustment pursuant to this Section 9, the Company at its expense will promptly compute such adjustment, in good faith, in accordance with the terms of this

Warrant and prepare a certificate setting forth such adjustment, including a statement of the adjusted Exercise Price

and adjusted number or type of Warrant Shares or other securities issuable upon exercise of this Warrant (as applicable), describing the transactions giving rise to such adjustments and showing in reasonable detail the facts upon which such adjustment is based. The Company will promptly deliver a copy of each such certificate to the Holder and to the Company's transfer agent.

(g) Notice of Corporate Events. If, while this Warrant is outstanding, the Company (i) declares a dividend or any other distribution of cash, securities or other property in respect of its Common Stock, including, without limitation, any granting of rights or warrants to subscribe for or purchase any capital stock of the Company, (ii) authorizes or approves, enters into any agreement contemplating or solicits stockholder approval for any Fundamental Transaction or (iii) authorizes the voluntary dissolution, liquidation or winding up of the affairs of the Company, then, except if such notice and the contents thereof shall be deemed to constitute material non-public information, the Company shall deliver to the Holder a notice of such transaction at least ten (10) Trading Days prior to the applicable record or effective date on which a Person would need to hold Common Stock in order to participate in or vote with respect to such transaction; *provided, however*, that the failure to deliver such notice or any defect therein shall not affect the validity of the corporate action required to be described in such notice.

10. Payment of Exercise Price. The Holder shall either pay the Exercise Price in immediately available funds or by way of a "cashless exercise", in which event the Company shall issue to the Holder the number of Warrant Shares determined in accordance with the formula set forth below. Notwithstanding the foregoing, the Holder shall only be permitted to pay the Exercise Price by way of a cashless exercise in accordance with this Section 10 if, and only if, following the Initial Data Disclosure, the Performance Condition has not been satisfied.

$$X = Y [(A-B)/A]$$

where:

X = the number of Warrant Shares to be issued to the Holder.

Y = the total number of Warrant Shares with respect to which this Warrant is being exercised.

A = the average of the Closing Sale Prices of the shares of Common Stock (as reported by Bloomberg Financial Markets) for the five consecutive Trading Days ending on the date immediately preceding the Exercise Date.

B = the Exercise Price then in effect for the applicable Warrant Shares at the time of such exercise.

For purposes of this Warrant, "Closing Sale Price" means, for any security as of any date, the last trade price for such security on the Principal Trading Market for such security, as reported by Bloomberg Financial Markets, or, if such Principal Trading Market begins to operate on an extended hours basis and does not designate a last trade price, then the last trade price of such security prior to 4:00 p.m., New York City time, as reported by Bloomberg Financial Markets, or if the foregoing do not apply, the last closing price of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg Financial Markets, or, if no closing bid price is reported for such security by Bloomberg Financial Markets, the average of the bid prices of any market makers for such security as reported in the "pink sheets" by Pink Sheets LLC. If the Closing Sale Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Closing Sale Price of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then the Board of Directors of the Company shall use its good faith judgment to determine the fair market value. The Board of Directors' determination shall be binding upon all parties absent demonstrable error. All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination or other similar transaction during the applicable calculation period.

For purposes of Rule 144, it is intended, understood and acknowledged that the provisions above permitting "cashless exercise" are intended, in part, to ensure that a full or partial exchange of this Warrant pursuant to such provisions will qualify as a conversion, within the meaning of paragraph (d)(3)(ii) of Rule 144, and the holding



period for the Warrant Shares shall be deemed to have commenced as to such original Holder, on the Original Issue Date.

11. Limitations on Exercise. Notwithstanding anything to the contrary contained herein, the number of Warrant Shares that may be acquired by the Holder upon any exercise of this Warrant (or otherwise in respect hereof) shall be limited to the extent necessary to ensure that, following such exercise (or other issuance), the total number of shares of Common Stock then beneficially owned by the Holder (together with such Holder's Affiliates, and any other Person whose beneficial ownership of Common Stock would be aggregated with the Holder's for purposes of Section 13(d) of the Exchange Act and the applicable regulations of the Commission, including any "group" of which the Holder is a member) does not exceed [9.99][4.99]% of the total number of then issued and outstanding shares of Common Stock (including for such purpose the shares of Common Stock issuable upon such exercise) (the "**Beneficial Ownership Limit**"). For such purposes, beneficial ownership shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder, it being acknowledged by the Holder that the Company is not representing to such Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and such Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the Beneficial Ownership Limit applies, the determination of whether this Warrant is exercisable (in relation to other securities owned by such Holder) and of which a portion of this Warrant is exercisable shall be in the sole discretion of a Holder, and the submission of a Notice of Exercise shall be deemed to be the Holder's determination of whether this Warrant is exercisable (in relation to other securities owned by such Holder) and of which portion of this Warrant is exercisable, in each case subject to the Beneficial Ownership Limit, and the Company shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 11, in determining the number of outstanding shares of Common Stock, the Holder may rely on the number of outstanding shares of Common Stock as reflected in (x) the Company's most recent Form 10-Q or Form 10-K, as the case may be, (y) a more recent public announcement by the Company or (z) any other notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written request of the Holder, the Company shall within three Trading Days confirm orally and in writing to such Holder the number of shares of Common Stock then outstanding. This provision shall not restrict the number of shares of Common Stock which a Holder may receive or beneficially own in order to determine the amount of securities or other consideration that such Holder may receive in the event of a Fundamental Transaction as contemplated in Section 9 of this Warrant. By written notice to the Company, the Holder may increase or decrease the Beneficial Ownership Limit applicable solely to such Holder to such other percentage limit as may be determined by the Holder, not to exceed [19.99][9.99]%, provided that any increase in the Beneficial Ownership Limit shall not be effective until the 61st day after such notice is delivered to the Company.

12. No Fractional Shares. No fractional Warrant Shares will be issued in connection with any exercise of this Warrant. In lieu of any fractional shares that would otherwise be issuable, the number of Warrant Shares to be issued shall be rounded down to the next whole number and the Company shall pay the Holder in cash the fair market value (based on the Closing Sale Price) for any such fractional shares.

13. Notices. Any and all notices or other communications or deliveries hereunder (including, without limitation, any Exercise Notice) shall be in writing and shall be deemed given and effective on the earliest of (i) the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number specified in the Purchase Agreement prior to 5:30 p.m., New York City time, on a Trading Day, (ii) the next Trading Day after the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number specified in the Purchase Agreement on a day that is not a Trading Day or later than 5:30 p.m., New York City time, on any Trading Day, (iii) the Trading Day following the date of mailing, if sent by nationally recognized overnight courier service specifying next business day delivery, or (iv) upon actual receipt by the Person to whom such notice is required to be given, if by hand delivery. The address and facsimile number of a Person for such notices or communications shall be as set forth in the Purchase Agreement unless changed by such Person by two Trading Days' prior notice to the other Person(s) in accordance with this Section 13.

14. Warrant Agent. The Company shall serve as warrant agent under this Warrant. Upon 15 days' notice to the Holder, the Company may appoint a new warrant agent. Any corporation into which the Company or

any new warrant agent may be merged or any corporation resulting from any consolidation to which the Company

or any new warrant agent shall be a party or any corporation to which the Company or any new warrant agent transfers substantially all of its corporate trust or shareholders services business shall be a successor warrant agent under this Warrant without any further act. Any such successor warrant agent shall promptly cause notice of its succession as warrant agent to be mailed (by first class mail, postage prepaid) to the Holder at the Holder's last address as shown on the Warrant Register.

15. Miscellaneous.

(a) No Rights as a Stockholder. The Holder, solely in such Person's capacity as a holder of this Warrant, shall not be entitled to vote or receive dividends or be deemed the holder of share capital of the Company for any purpose, nor shall anything contained in this Warrant be construed to confer upon the Holder, solely in such Person's capacity as the Holder of this Warrant, any of the rights of a stockholder of the Company or any right to vote, give or withhold consent to any corporate action (whether any reorganization, issue of stock, reclassification of stock, consolidation, merger, amalgamation, conveyance or otherwise), receive notice of meetings, receive dividends or subscription rights, or otherwise, prior to the issuance to the Holder of the Warrant Shares which such Person is then entitled to receive upon the due exercise of this Warrant. In addition, nothing contained in this Warrant shall be construed as imposing any liabilities on the Holder to purchase any securities, whether such liabilities are asserted by the Company or by creditors of the Company.

(b) Authorized Shares.

(i) The Company will take all such reasonable action as may be necessary to assure that such Warrant Shares may be issued as provided herein without violation of any applicable law or regulation or of any requirements of the Trading Market upon which the Common Stock may be listed.

(ii) Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including, without limitation, amending its articles 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 actions as may be necessary or appropriate to protect the rights of Holder as set forth in this Warrant against impairment. Without limiting the generality of the foregoing, the Company will (a) not increase the par value of any Warrant Shares above the amount payable therefor upon such exercise immediately prior to such increase in par value, (b) take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable Warrant Shares upon the exercise of this Warrant, and (c) use commercially reasonable efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof as may be necessary to enable the Company to perform its obligations under this Warrant.

(iii) Before taking any action which would result in an adjustment in the number of Warrant Shares for which this Warrant is exercisable or in the Exercise Price, the Company shall obtain all such authorizations or exemptions thereof, or consents thereto, as may be necessary from any public regulatory body or bodies having jurisdiction thereof.

(c) Successors and Assigns. Subject to the restrictions on transfer set forth in this Warrant and in Section 4.1 of the Purchase Agreement, and compliance with applicable securities laws, this Warrant may be assigned by the Holder. This Warrant may not be assigned by the Company without the written consent of the Holder except to a successor in the event of a Fundamental Transaction. This Warrant shall be binding on and inure to the benefit of the Company and the Holder and their respective successors and assigns. Subject to the preceding sentence, nothing in this Warrant shall be construed to give to any Person other than the Company and the Holder any legal or equitable right, remedy or cause of action under this Warrant.

(d) Amendment and Waiver. Except as otherwise provided herein, the provisions of the Warrants 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 has obtained the written consent of the Holders of Warrants representing no

less than a majority of the Warrant Shares obtainable upon exercise of the Warrants then outstanding.

(e) Acceptance. Receipt of this Warrant by the Holder shall constitute acceptance of and agreement to all of the terms and conditions contained herein.

(f) Governing Law; Jurisdiction. ALL QUESTIONS CONCERNING THE CONSTRUCTION, VALIDITY, ENFORCEMENT AND INTERPRETATION OF THIS WARRANT SHALL BE GOVERNED BY AND CONSTRUED AND ENFORCED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK WITHOUT REGARD TO THE PRINCIPLES OF CONFLICTS OF LAW THEREOF. EACH OF THE COMPANY AND THE HOLDER HEREBY IRREVOCABLY SUBMITS TO THE EXCLUSIVE JURISDICTION OF THE STATE AND FEDERAL COURTS SITTING IN THE CITY OF NEW YORK, BOROUGH OF MANHATTAN, FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION HERewith OR WITH ANY TRANSACTION CONTEMPLATED HEREBY OR DISCUSSED HEREIN (INCLUDING WITH RESPECT TO THE ENFORCEMENT OF ANY OF THE TRANSACTION DOCUMENTS), AND HEREBY IRREVOCABLY WAIVES, AND AGREES NOT TO ASSERT IN ANY SUIT, ACTION OR PROCEEDING, ANY CLAIM THAT IT IS NOT PERSONALLY SUBJECT TO THE JURISDICTION OF ANY SUCH COURT. EACH OF THE COMPANY AND THE HOLDER HEREBY IRREVOCABLY WAIVES PERSONAL SERVICE OF PROCESS AND CONSENTS TO PROCESS BEING SERVED IN ANY SUCH SUIT, ACTION OR PROCEEDING BY MAILING A COPY THEREOF VIA REGISTERED OR CERTIFIED MAIL OR OVERNIGHT DELIVERY (WITH EVIDENCE OF DELIVERY) TO SUCH PARTY AT THE ADDRESS IN EFFECT FOR NOTICES TO IT UNDER THE PURCHASE AGREEMENT AND AGREES THAT SUCH SERVICE SHALL CONSTITUTE GOOD AND SUFFICIENT SERVICE OF PROCESS AND NOTICE THEREOF. NOTHING CONTAINED HEREIN SHALL BE DEEMED TO LIMIT IN ANY WAY ANY RIGHT TO SERVE PROCESS IN ANY MANNER PERMITTED BY LAW. EACH OF THE COMPANY AND THE HOLDER HEREBY WAIVES ALL RIGHTS TO A TRIAL BY JURY.

(g) Headings. The headings herein are for convenience only, do not constitute a part of this Warrant and shall not be deemed to limit or affect any of the provisions hereof.

(h) Severability. In case any one or more of the provisions of this Warrant shall be invalid or unenforceable in any respect, the validity and enforceability of the remaining terms and provisions of this Warrant shall not in any way be affected or impaired thereby, and the Company and the Holder will attempt in good faith to agree upon a valid and enforceable provision which as closely as possible reflects the intent of the parties hereto, and upon so agreeing, shall incorporate such substitute provision in this Warrant.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK,
SIGNATURE PAGE FOLLOWS]



IN WITNESS WHEREOF, the Company has caused this Warrant to be duly executed by its authorized officer as of the date first indicated above.

PIERIS PHARMACEUTICALS, INC.

By: _____

Name:

Title:

[Signature Page to Form of Warrant]

SCHEDULE 1

PIERIS PHARMACEUTICALS, INC.

FORM OF EXERCISE NOTICE

[To be executed by the Holder to purchase shares of Common Stock under the Warrant]

Ladies and Gentlemen:

(1) The undersigned is the Holder of Warrant No. _____ (the "**Warrant**") issued by Pieris Pharmaceuticals, Inc., a Nevada corporation (the "**Company**"). Capitalized terms used herein and not otherwise defined herein have the respective meanings set forth in the Warrant.

(2) The undersigned hereby exercises its right to purchase _____ Warrant Shares pursuant to the Warrant.

(3) The Holder intends that payment of the Exercise Price shall be made as (check one):

- Cash Exercise
- "Cashless Exercise" under Section 10 of the Warrant (only if permitted in accordance with Section 10 of the Warrant)

(4) If the Holder has elected a Cash Exercise, the Holder shall pay the sum of \$_____ in immediately available funds to the Company in accordance with the terms of the Warrant.

(5) Pursuant to this Exercise Notice, the Company shall deliver to the Holder Warrant Shares determined in accordance with the terms of the Warrant. Please issue (check applicable box):

- A certificate of certificates representing the Holder Warrant Shares in the name of the undersigned or in such other name as is specified below:

- The Holder Warrant Shares in electronic form to the following account:

Name and Contact for Broker: _____
Broker no: _____
Account no: _____
Account holder: _____

(6) By its delivery of this Exercise Notice, the undersigned represents and warrants to the Company that in giving effect to the exercise evidenced hereby the Holder will not beneficially own in excess of the number of shares of Common Stock (as determined in accordance with Section 13(d) of the Securities Exchange Act of 1934, as amended) permitted to be owned under Section 11 of the Warrant to which this notice relates.

Dated: _____, _____

Name of Holder: _____

By: _____

Name: _____

Title: _____

(Signature must conform in all respects to name of Holder as specified on the face of the Warrant)

SCHEDULE 2

PIERIS PHARMACEUTICALS, INC.

FORM OF ASSIGNMENT

[To be completed and executed by the Holder only upon transfer of the Warrant]

FOR VALUE RECEIVED, the undersigned hereby sells, assigns and transfers unto _____ (the "**Transferee**") the right represented by the within Warrant to purchase _____ shares of Common Stock of Pieris Pharmaceuticals, Inc., a Nevada corporation (the "**Company**") to which the within Warrant relates and appoints _____ attorney to transfer said right on the books of the Company with full power of substitution in the premises. In connection therewith, the undersigned represents, warrants, covenants and agrees to and with the Company that:

- (a) the offer and sale of the Warrant contemplated hereby is being made in compliance with Section 4(1) of the United States Securities Act of 1933, as amended (the "**Securities Act**"), or another valid exemption from the registration requirements of Section 5 of the Securities Act and in compliance with all applicable securities laws of the states of the United States;
- (b) the undersigned has not offered to sell the Warrant by any form of general solicitation or general advertising, including, but not limited to, any advertisement, article, notice or other communication published in any newspaper, magazine or similar media or broadcast over television or radio, and any seminar or meeting whose attendees have been invited by any general solicitation or general advertising;
- (c) the undersigned has read the Transferee's investment letter included herewith, and to its actual knowledge, the statements made therein are true and correct; and
- (d) the undersigned understands that the Company may condition the transfer of the Warrant contemplated hereby upon the delivery to the Company by the undersigned or the Transferee, as the case may be, of a written opinion of counsel (which opinion shall be in form, substance and scope customary for opinions of counsel in comparable transactions) to the effect that such transfer may be made without registration under the Securities Act and under applicable securities laws of the states of the United States.

Dated: _____

(Signature must conform in all respects to name of holder as specified on the face of the Warrant)

Address of Transferee

In the presence of:

EXECUTION VERSION

REGISTRATION RIGHTS AGREEMENT

This Registration Rights Agreement (this “**Agreement**”) is made and entered into as of November 2, 2019, by and among Pieris Pharmaceuticals, Inc., a Nevada corporation (the “**Company**”), and the several signatories hereto.

This Agreement is made pursuant to the Securities Purchase Agreement (the “**Purchase Agreement**”), dated as of the date hereof between the Company and each purchaser signatory thereto (each a “**Purchaser**” and collectively, the “**Purchasers**”).

NOW, THEREFORE, IN CONSIDERATION of the mutual covenants contained in this Agreement, and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the Company and each of the Holders agree as follows:

1. **Definitions.** Capitalized terms used and not otherwise defined herein that are defined in the Purchase Agreement shall have the meanings given such terms in the Purchase Agreement. As used in this Agreement, the following terms shall have the following meanings:

“**Advice**” has the meaning set forth in Section 6(d).

“**Affiliate**” has the meaning set forth in the Purchase Agreement.

“**Agreement**” has the meaning set forth in the Preamble.

“**Business Day**” has the meaning set forth in the Purchase Agreement.

“**Closing Date**” has the meaning set forth in the Purchase Agreement.

“**Commission**” has the meaning set forth in the Purchase Agreement.

“**Common Stock**” has the meaning set forth in the Purchase Agreement.

“**Company**” has the meaning set forth in the Preamble.

“**Effective Date**” means the date that the Registration Statement filed pursuant to Section 2(a) is first declared effective by the Commission.

“**Effectiveness Deadline**” means, with respect to the Initial Registration Statement or the New Registration Statement, the 90th calendar day following the Closing Date (or, in the event the Commission reviews and has written comments to the Initial Registration Statement or the New Registration Statement, the 120th calendar day following the Closing Date); *provided, however*, that if the Company is notified by the Commission that the Initial Registration Statement or the New Registration Statement will not be reviewed or is no longer subject to further review and comments, the Effectiveness Deadline as to such Registration Statement shall be the 5th Trading Day following the date on which the Company is so notified if such date precedes the dates otherwise required above; *provided, further*, that if the Effectiveness Deadline falls on a Saturday, Sunday or other day that the Commission is closed for business, the Effectiveness Deadline shall be extended to the next Business Day on which the Commission is open for business.

“**Effectiveness Period**” has the meaning set forth in Section 2(b).

“**Event**” has the meaning set forth in Section 2(c).

“**Event Date**” has the meaning set forth in Section 2(c).

“**Exchange Act**” has the meaning set forth in the Purchase Agreement.

“**Filing Deadline**” means, with respect to the Initial Registration Statement required to be filed pursuant to Section 2(a), the 30th calendar day following the Closing Date; *provided, however*, that if the Filing Deadline falls on a Saturday, Sunday or other day that the Commission is closed for business, the Filing Deadline shall be extended to the next business day on which the Commission is open for business.

“**Holder**” or “**Holders**” means the holder or holders, as the case may be, from time to time of Registrable Securities.

“**Indemnified Party**” has the meaning set forth in Section 5(c).

“**Indemnifying Party**” has the meaning set forth in Section 5(c).

“**Initial Registration Statement**” means the initial Registration Statement filed pursuant to Section 2(a) of this Agreement.

“**Liquidated Damages**” has the meaning set forth in Section 2(c).

“**Losses**” has the meaning set forth in Section 5(a).

“**New Registration Statement**” has the meaning set forth in Section 2(a).

“**Person**” has the meaning set forth in the Purchase Agreement.

“**Principal Market**” means the Trading Market on which the Common Stock is primarily listed on and quoted for trading, which, as of the Closing Date, shall be the Nasdaq Capital Market.

“**Preferred Stock**” means the Series C Convertible Preferred Stock of the Company, par value \$0.001 per share.

“**Proceeding**” has the meaning set forth in the Purchase Agreement.

“**Prospectus**” means the prospectus included in a Registration Statement (including, without limitation, a prospectus that includes any information previously omitted from a prospectus filed as part of an effective registration statement in reliance upon Rule 430A promulgated under the Securities Act), as amended or supplemented by any prospectus supplement, with respect to the terms of the offering of any portion of the Registrable Securities covered by a Registration Statement, and all other amendments and supplements to the Prospectus, including post-effective amendments, and all material incorporated by reference or deemed to be incorporated by reference in such Prospectus.

“**Purchase Agreement**” has the meaning set forth in the Recitals.

“**Purchaser**” or “**Purchasers**” has the meaning set forth in the Recitals.

“**Registrable Securities**” means all of (i) the Shares, (ii) the Warrant Shares and (iii) any securities issued or issuable upon conversion, dividend or other distribution, recapitalization or similar

securities issued or issuable upon any stock split, dividend or other distribution, recapitalization or similar

event with respect to the foregoing, *provided*, that the Holder has completed and delivered to the Company a Selling Stockholder Questionnaire; and *provided, further*, that with respect to a particular Holder, such Holder's Shares and/or Warrant Shares shall cease to be Registrable Securities upon the earliest to occur of the following: (A) a sale pursuant to a Registration Statement or Rule 144 under the Securities Act (in which case, only such security sold by the Holder shall cease to be a Registrable Security); (B) becoming eligible for resale by the Holder under Rule 144 without the requirement for the Company to be in compliance with the current public information requirement thereunder and without volume or manner-of-sale restrictions, pursuant to a written opinion letter to such effect, addressed, delivered and acceptable to the Transfer Agent; or (C) the date that is two years following the Closing Date.

“Registration Statements” means any one or more registration statements of the Company filed under the Securities Act that covers the resale of any of the Registrable Securities pursuant to the provisions of this Agreement (including, without limitation, the Initial Registration Statement, the New Registration Statement and any Remainder Registration Statements), including (in each case) the amendments and supplements to such Registration Statements, including pre- and post-effective amendments thereto, all exhibits and all material incorporated by reference or deemed to be incorporated by reference in such Registration Statements.

“Remainder Registration Statements” has the meaning set forth in Section 2(a).

“Rule 144” means Rule 144 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same effect as such Rule.

“Rule 415” means Rule 415 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same effect as such Rule.

“Rule 424” means Rule 424 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same effect as such Rule.

“SEC Guidance” means (i) any publicly-available written or oral guidance, comments, requirements or requests of the Commission staff, provided, that any such oral guidance, comments, requirements or requests are reduced to writing by the Commission and (ii) the Securities Act.

“Securities Act” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

“Selling Stockholder Questionnaire” means a questionnaire in the form attached as Annex B hereto, or such other form of questionnaire as may reasonably be adopted by the Company from time to time.

“Shares” means the shares of Common Stock issued or issuable to the Purchasers pursuant to the Purchase Agreement, including shares of Common Stock issuable upon conversion of the Preferred Stock.

“Trading Day” means (i) a day on which the Common Stock is listed or quoted and traded on its Principal Market (other than the OTCMarkets), or (ii) if the Common Stock is not listed on a Trading Market (other than the OTCMarkets), a day on which the Common Stock is traded in the over-

the-counter market, as reported by the OTCMarkets, or (iii) if the Common Stock is not quoted on any Trading Market, a day on which the Common Stock is quoted in the over-the-counter market as reported in the “pink sheets” by Pink Sheets LLC (or any similar organization or agency succeeding to its functions of reporting prices); *provided*, that in the event that the Common Stock is not listed or quoted as set forth in (i), (ii) and (iii) hereof, then Trading Day shall mean a Business Day.

“**Trading Market**” means whichever of the New York Stock Exchange, the NYSE Mkt, the Nasdaq Global Select Market, the Nasdaq Global Market, the Nasdaq Capital Market or the OTC Bulletin Board on which the Common Stock is listed or quoted for trading on the date in question.

“**Warrants**” means the Warrants issued pursuant to the Purchase Agreement.

“**Warrant Shares**” has the meaning set forth in the Purchase Agreement.

2. Registration.

(a) On or prior to the Filing Deadline, the Company shall prepare and file with the Commission a Registration Statement covering the resale of all of the Registrable Securities not already covered by an existing and effective Registration Statement for an offering to be made on a continuous basis pursuant to Rule 415 or, if Rule 415 is not available for offers and sales of the Registrable Securities, by such other means of distribution of Registrable Securities as the Holders may reasonably specify (the “**Initial Registration Statement**”). The Initial Registration Statement shall be on Form S-3 (except that if the Company is then ineligible to register for resale the Registrable Securities on Form S-3, in which case such registration shall be on such other form available to register for resale the Registrable Securities as a secondary offering) subject to the provisions of Section 2(e) and shall contain (except if otherwise required pursuant to written comments received from the Commission upon a review of such Registration Statement) a “Plan of Distribution” section substantially in the form attached hereto as Annex A (which may be modified to respond to comments, if any, provided by the Commission).

(i) Notwithstanding the registration obligations set forth in this Section 2, in the event the Commission informs the Company that all of the Registrable Securities cannot, as a result of the application of Rule 415, be registered for resale as a secondary offering on a single registration statement or that any Holder must be named as an underwriter in the Registration Statement, the Company agrees to promptly (x) inform each of the Holders thereof and use its commercially reasonable efforts to file amendments to the Initial Registration Statement as required by the Commission and/or (y) withdraw the Initial Registration Statement and file a new registration statement (a “**New Registration Statement**”), in either case covering the maximum number of Registrable Securities permitted to be registered by the Commission, on Form S-1 or such other form available to register for resale the Registrable Securities as a secondary offering; *provided, however*, that prior to filing such amendment or New Registration Statement, the Company shall be obligated to use its commercially reasonable efforts to advocate with the Commission for the registration of all of the Registrable Securities in accordance with SEC Guidance, including without limitation, Compliance and Disclosure Interpretation 612.09, in each case without naming any Holder as an underwriter in the Registration Statement. The Lead Investor shall have the right to comment or have their counsel comment on any written submission made to the staff of Commission (the “Staff”) with respect to any disclosure specifically relating to the Lead Investor. No such written submission shall be made to the Staff containing disclosure specifically relating to the Lead Investor to which the Lead Investor’s counsel reasonably objects.

(ii) Notwithstanding any other provision of this Agreement and subject to the payment of liquidated damages in Section 2(c), if any SEC Guidance sets forth a limitation of the number of Registrable Securities permitted to be registered on a particular Registration Statement as a secondary

offering without naming any Holder as an underwriter (and notwithstanding that the Company used commercially reasonable efforts to advocate with the Commission for the registration of all or a greater number of Registrable Securities), unless otherwise directed in writing by a Holder as to its Registrable Securities, the Registrable Securities to be registered on such Registration Statement will first be reduced by the Warrant Shares (applied, in the case that some Warrant Shares may be registered, to the Holders on a pro rata basis based on the total number of unregistered Warrant Shares held by such Holders) and second by the Shares (applied, in the case that some Shares may be registered, to the Holders on a pro rata basis based on the total number of unregistered Shares held by such Holders), subject to a determination by the Commission that certain Holders must be reduced first based on the number of Registrable Securities held by such Holders. In the event the Company amends the Initial Registration Statement or files a New Registration Statement, as the case may be, under clauses (x) or (y) above, the Company will use its commercially reasonable efforts to file with the Commission, as promptly as allowed by Commission or SEC Guidance provided to the Company or to registrants of securities in general, one or more registration statements on Form S-1 or such other form available to register for resale those Registrable Securities that were not registered for resale on the Initial Registration Statement, as amended, or the New Registration Statement (the “**Remainder Registration Statements**”). No Holder shall be named as an “underwriter” in any Registration Statement without such Holder’s prior written consent.

(b) The Company shall use its commercially reasonable efforts to cause each Registration Statement to be declared effective by the Commission as soon as practicable and, with respect to the Initial Registration Statement or the New Registration Statement, as applicable, no later than the Effectiveness Deadline (including, with respect to the Initial Registration Statement or the New Registration Statement, as applicable, filing with the Commission a request for acceleration of effectiveness in accordance with Rule 461 promulgated under the Securities Act within five (5) Business Days after the date that the Company is notified (orally or in writing, whichever is earlier) by the Commission that such Registration Statement will not be “reviewed,” or not be subject to further review and the effectiveness of such Registration Statement may be accelerated), and, subject to Sections 2(e) and (f), shall use its commercially reasonable efforts to keep each Registration Statement continuously effective under the Securities Act for so long as the securities registered for resale thereunder retain their character as “Registrable Securities” (the “**Effectiveness Period**”). The Company shall promptly notify the Holders via facsimile or electronic mail of the effectiveness of a Registration Statement or any post-effective amendment thereto on or before the 1st Trading Day after the date that the Company telephonically confirms effectiveness with the Commission. The Company shall, by 9:30 a.m. New York City time on the first Trading Day after the Effective Date, file a final Prospectus with the Commission, as required by Rule 424(b).

(c) If: (i) the Initial Registration Statement is not filed with the Commission on or prior to the Filing Deadline, (ii) the Initial Registration Statement or the New Registration Statement, as applicable, is not declared effective by the Commission (or otherwise does not become effective) for any reason on or prior to the Effectiveness Deadline, or (iii) after its Effective Date and except for the reasons as set forth in Section 3(h), (A) such Registration Statement ceases for any reason (including, without limitation, by reason of a stop order or the Company’s failure to update the Registration Statement), to remain continuously effective as to all Registrable Securities included in such Registration Statement or (B) the Holders are not permitted to utilize the Prospectus therein to resell such Registrable Securities for any reason (other than due to a change in the “Plan of Distribution” or the inaccuracy of any information regarding the Holders), in each case, for more than an aggregate of 30 consecutive calendar days or 45 calendar days (which need not be consecutive days) during any 12-month period (other than as a result of a breach of this Agreement by a Holder or a Holder’s failure to return a Selling Stockholder Questionnaire within the time period provided by Section 2(d) hereof) (any such failure or breach in clauses (i) through (iii) above being referred to as an “**Event**” and, for purposes of clauses (i) or (ii), the

clauses (i) through (iii) above being referred to as an Event, and, for purposes of clauses (i) or (ii), the

date on which such Event occurs, or for purposes of clause (iii), the date on which such 30 or 45 calendar day period is exceeded, being referred to as an “**Event Date**”), then in addition to any other rights the Holders may have hereunder or under applicable law: (x) within five (5) Business Days after an Event Date relating to a failure in clause (i) only, the Company shall pay to each Holder an amount in cash, as liquidated damages and not as a penalty, equal to 1.0% of the aggregate purchase price paid by such Holder pursuant to the Purchase Agreement for any Registrable Securities held by such Holder on such Event Date; and (y) on each 30-day anniversary (or pro rata portion thereof) following any Event Date (including, for the avoidance of doubt, a failure in clause (i), in which case each 30-day anniversary shall be measured commencing on the 31st day following such Event Date) until the earlier of (1) the applicable Event is cured or (2) the Registrable Securities are eligible for resale pursuant to Rule 144 without manner of sale or volume restrictions, the Company shall pay to each Holder an amount in cash, as liquidated damages and not as a penalty, equal to 1.0% of the aggregate purchase price paid by such Holder pursuant to the Purchase Agreement for any unregistered Registrable Securities then held by such Holder. The amounts payable pursuant to the foregoing clauses (x) and (y) are referred to collectively as “**Liquidated Damages**.” The parties agree that (1) the Company will not be liable for Liquidated Damages under this Agreement with respect to any Warrants or any Warrant Shares (prior to their issuance), (2) notwithstanding anything to the contrary herein or in the Purchase Agreement, no Liquidated Damages shall be payable with respect to any period after the expiration of the Effectiveness Period and in no event shall the aggregate amount of Liquidated Damages payable to a Holder exceed, in the aggregate, 6% of the aggregate purchase price paid by such Holder pursuant to the Purchase Agreement and (3) in no event shall the Company be liable in any 30-day period for Liquidated Damages under this Agreement in excess of 1.0% of the aggregate purchase price paid by the Holders pursuant to the Purchase Agreement. If the Company fails to pay any Liquidated Damages pursuant to this Section 2(c) in full within 10 Business Days after the date payable, the Company will pay interest thereon at a rate of 1.0% per month (or such lesser maximum amount that is permitted to be paid by applicable law) to the Holder, accruing daily from the date such Liquidated Damages are due until such amounts, plus all such interest thereon, are paid in full. Unless otherwise specified in Section 2(c), the Liquidated Damages pursuant to the terms hereof shall apply on a daily pro-rata basis for any portion of a month prior to the cure of an Event, except in the case of the first Event Date. Notwithstanding the foregoing, nothing shall preclude any Holder from pursuing or obtaining any available remedies at law, specific performance or other equitable relief with respect to this Section 2(c) in accordance with applicable law. The Company shall not be liable for Liquidated Damages under this Agreement as to any Registrable Securities which are not permitted by the Commission to be included in a Registration Statement due solely to SEC Guidance from the time that it is determined that such Registrable Securities are not permitted to be registered until such time as the provisions of this Agreement as to the Remainder Registration Statements required to be filed hereunder are triggered, in which case the provisions of this Section 2(c) shall once again apply, if applicable. In such case, the Liquidated Damages shall be calculated to only apply to the percentage of Registrable Securities which are permitted in accordance with SEC Guidance to be included in such Registration Statement. The Effectiveness Deadline for a Registration Statement shall be extended without default or Liquidated Damages hereunder in the event that the Company’s failure to obtain the effectiveness of the Registration Statement on a timely basis results from the failure of a Holder to timely provide the Company with information requested by the Company and necessary to complete the Registration Statement in accordance with the requirements of the Securities Act (in which the Effectiveness Deadline would be extended with respect to Registrable Securities held by such Holder).

(d) Each Holder agrees to furnish to the Company a completed Selling Stockholder Questionnaire not more than ten Trading Days following the date of this Agreement. At least five (5) Trading Days prior to the first anticipated filing date of a Registration Statement for any registration under this Agreement, the Company will notify each Holder of the information the Company requires from that Holder other than the information contained in the Selling Stockholder Questionnaire, if any.

which shall be completed and delivered to the Company promptly upon request and, in any event, within two Trading Days prior to the applicable anticipated filing date. Each Holder further agrees that it shall not be entitled to be named as a selling security holder in the Registration Statement or use the Prospectus for offers and resales of Registrable Securities at any time, unless such Holder has returned to the Company a completed and signed Selling Stockholder Questionnaire and a response to any requests for further information as described in the previous sentence. If a Holder of Registrable Securities returns a Selling Stockholder Questionnaire or a request for further information, in either case, after its respective deadline, the Company shall use its commercially reasonable efforts to take such actions as are required to name such Holder as a selling security holder in the Registration Statement or any pre-effective or post-effective amendment thereto and to include (to the extent not theretofore included) in the Registration Statement the Registrable Securities identified in such late Selling Stockholder Questionnaire or request for further information. Each Holder acknowledges and agrees that the information in the Selling Stockholder Questionnaire or request for further information as described in this Section 2(d) will be used by the Company in the preparation of the Registration Statement and hereby consents to the inclusion of such information in the Registration Statement.

(e) In the event that Form S-3 is not available for the registration of the resale of Registrable Securities hereunder, the Company shall (i) register the resale of the Registrable Securities on Form S-1 and (ii) undertake to register the Registrable Securities on Form S-3 promptly after such form is available, provided that the Company shall maintain the effectiveness of the Registration Statement then in effect until such time as a Registration Statement on Form S-3 covering the Registrable Securities has been declared effective by the Commission.

3. Registration Procedures.

In connection with the Company's registration obligations hereunder, the Company shall:

(a) Not less than five (5) Trading Days prior to the filing of each Registration Statement and not less than one (1) Trading Day prior to the filing of any related Prospectus or any amendment or supplement thereto (except for Annual Reports on Form 10-K, and Quarterly Reports on Form 10-Q and Current Reports on Form 8-K and any similar or successor reports), (i) furnish to the Holder copies of such Registration Statement, Prospectus or amendment or supplement thereto, as proposed to be filed, which documents will be subject to the review of such Holder (it being acknowledged and agreed that if a Holder does not object to or comment on the aforementioned documents within such five (5) Trading Day or one (1) Trading Day period, as the case may be, then the Holder shall be deemed to have consented to and approved the use of such documents) and (ii) use commercially reasonable efforts to cause its officers and directors, counsel and independent registered public accountants to respond to such inquiries as shall be necessary, in the reasonable opinion of respective counsel to each Holder, to conduct such review. The Company shall not file any Registration Statement or Prospectus or any amendment or supplement thereto in a form to which a Holder reasonably objects in good faith, provided that, the Company is notified of such objection in writing within the five (5) Trading Day or one (1) Trading Day period described above, as applicable.

(b) (i) Subject to Section 3(h), prepare and file with the Commission such amendments (including post-effective amendments) and supplements to each Registration Statement and the Prospectus used in connection therewith as may be necessary to keep such Registration Statement continuously effective as to the applicable Registrable Securities for its Effectiveness Period; (ii) cause the related Prospectus to be amended or supplemented by any required Prospectus supplement (subject to the terms of this Agreement), and, as so supplemented or amended, to be filed pursuant to Rule 424; (iii) respond as promptly as reasonably practicable to any comments received from the Commission with respect to each Registration Statement or any amendment thereto and, as promptly as reasonably possible,



provide the Holders true and complete copies of all correspondence from and to the Commission relating to such Registration Statement that pertains to the Holders as “Selling Stockholders” but not any comments that would result in the disclosure to the Holders of material and non-public information concerning the Company; and (iv) comply with the provisions of the Securities Act and the Exchange Act with respect to the disposition of all Registrable Securities covered by a Registration Statement until such time as all of such Registrable Securities cease to be Registrable Securities or shall have been disposed of (subject to the terms of this Agreement) in accordance with the intended methods of disposition by the Holders thereof as set forth in such Registration Statement as so amended or in such Prospectus as so supplemented; *provided, however*, that in the event the Company informs the Holders in writing that it does not satisfy the conditions specified in Rule 172 and, as a result thereof, the Holders are required to deliver a Prospectus in connection with any disposition of Registrable Securities, the Company shall deliver to the Holders a copy of the Prospectus in electronic format and each such Holder shall be responsible for the delivery of the Prospectus to the Persons to whom such Holder sells any of the Registrable Securities, and each Holder agrees to dispose of Registrable Securities in compliance with the “Plan of Distribution” described in the Registration Statement and otherwise in compliance with applicable federal and state securities laws. In the case of amendments and supplements to a Registration Statement which are required to be filed pursuant to this Agreement (including pursuant to this Section 3(b)) by reason of the Company filing a report on Form 10-K, Form 10-Q or Form 8-K or any analogous report under the Exchange Act, the Company shall have incorporated such report by reference into such Registration Statement, if applicable, or shall file such amendments or supplements with the Commission on the same day on which the Exchange Act report which created the requirement for the Company to amend or supplement such Registration Statement was filed.

(c) Notify the Holders (which notice shall, pursuant to clauses (iii) through (vi) hereof, be accompanied by an instruction to suspend the use of the Prospectus until the requisite changes have been made) as promptly as reasonably practicable via facsimile or electronic mail (and, in the case of (i)(A) below, not less than one (1) Trading Day prior to such filing) and no later than one (1) Trading Day following the day: (i)(A) when a Prospectus or any Prospectus supplement or post-effective amendment to a Registration Statement is proposed to be filed; (B) when the Commission notifies the Company whether there will be a “review” of such Registration Statement and whenever the Commission comments in writing on any Registration Statement (in which case the Company shall provide to each of the Holders true and complete copies of all comments that pertain to the Holders as a “Selling Stockholder” or to the “Plan of Distribution” and all written responses thereto, but not information that the Company believes would constitute material and non-public information); and (C) with respect to each Registration Statement or any post-effective amendment thereto, when the same has become effective; (ii) of any request by the Commission or any other Federal or state governmental authority for amendments or supplements to a Registration Statement or Prospectus or for additional information that pertains to the Holders as “Selling Stockholders” or the “Plan of Distribution”; (iii) of the issuance by the Commission or any other federal or state governmental authority of any stop order suspending the effectiveness of a Registration Statement covering any or all of the Registrable Securities or the initiation of any Proceedings for that purpose; (iv) of the receipt by the Company of any notification with respect to the suspension of the qualification or exemption from qualification of any of the Registrable Securities for sale in any jurisdiction, or the initiation or threatening of any Proceeding for such purpose and (v) of the occurrence of any event or passage of time that makes the financial statements included in a Registration Statement ineligible for inclusion therein or any statement made in such Registration Statement or Prospectus or any document incorporated or deemed to be incorporated therein by reference untrue in any material respect or that requires any revisions to such Registration Statement, Prospectus or other documents so that, in the case of such Registration Statement or the Prospectus, as the case may be, it will not contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein (in the case of any Prospectus, form of prospectus or supplement thereto, in light of the circumstances under which they were made), not misleading and (vi) of

the occurrence or existence of any pending corporate development with respect to the Company that the Company believes may be material and that, in the determination of the Company, makes it not in the best interest of the Company to allow continued availability of a Registration Statement or Prospectus, *provided* that, any and all such information shall remain confidential to each Holder until such information otherwise becomes public, unless disclosure by a Holder is required by law; and *provided, further*, that notwithstanding each Holder's agreement to keep such information confidential, each such Holder makes no acknowledgement that any such information is material, non-public information.

(d) Use commercially reasonable efforts to avoid the issuance of, or, if issued, obtain the withdrawal of (i) any order suspending the effectiveness of a Registration Statement, or (ii) any suspension of the qualification (or exemption from qualification) of any of the Registrable Securities for sale in any jurisdiction, as soon as practicable.

(e) If requested by a Holder, furnish to such Holder, without charge, at least one conformed copy of each Registration Statement and each amendment thereto and all exhibits to the extent requested by such Person (including those previously furnished or incorporated by reference) promptly after the filing of such documents with the Commission; *provided*, that the Company shall have no obligation to provide any document pursuant to this clause that is available on the Commission's EDGAR system.

(f) Prior to any resale of Registrable Securities by a Holder, use its commercially reasonable efforts to register or qualify or cooperate with the selling Holders in connection with the registration or qualification (or exemption from the registration or qualification) of such Registrable Securities for the resale by the Holder under the securities or Blue Sky laws of such jurisdictions within the United States as any Holder reasonably requests in writing, to keep each registration or qualification (or exemption therefrom) effective during the Effectiveness Period and to do any and all other acts or things reasonably necessary to enable the disposition in such jurisdictions of the Registrable Securities covered by each Registration Statement; *provided*, that the Company shall not be required to qualify generally to do business in any jurisdiction where it is not then so qualified, would subject the Company to any material tax in any such jurisdiction where it is not then so subject or file a general consent to service of process in any such jurisdiction.

(g) If requested by a Holder, cooperate with such Holder to facilitate the timely preparation and delivery of certificates or book-entry statements representing Registrable Securities to be delivered to a transferee pursuant to the Registration Statement, which certificates or book entry statements shall be free, to the extent permitted by the Purchase Agreement, and under law, of all restrictive legends, and to enable such Registrable Securities to be in such denominations and registered in such names as any such Holders may reasonably request.

(h) Following the occurrence of any event contemplated by Section 3(c), as promptly as reasonably practicable (taking into account the Company's good faith assessment of any adverse consequences to the Company and its stockholders of the premature disclosure of such event), prepare a supplement or amendment, including a post-effective amendment, to the affected Registration Statements or a supplement to the related Prospectus or any document incorporated or deemed to be incorporated therein by reference, and file any other required document so that, as thereafter delivered, no Registration Statement nor any Prospectus will contain 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 (in the case of any Prospectus, form of prospectus or supplement thereto, in light of the circumstances under which they were made), not misleading. If the Company notifies the Holders in accordance with clauses (iii) through (vi) of Section 3(c) above to suspend the use of any Prospectus until the requisite changes to such Prospectus have been made, then the Holders shall suspend use of such Prospectus. The Company will

use its commercially reasonable efforts to ensure that the use of the Prospectus may be resumed as promptly as is practicable. The Company shall be entitled to exercise its right under this Section 3(h) to suspend the availability of a Registration Statement and Prospectus for a period not to exceed 60 calendar days (which need not be consecutive days) in any 12-month period without incurring liability for Liquidated Damages otherwise required pursuant to Section 2(c).

(i) The Company may require each selling Holder to furnish to the Company a certified statement as to (i) the number of shares of Common Stock beneficially owned by such Holder and any Affiliate thereof, (ii) any Financial Industry Regulatory Authority, Inc. ("**FINRA**") affiliations, (iii) any natural persons who have the power to vote or dispose of the common stock and (iv) any other information as may be requested by the Commission, FINRA or any state securities commission. During any periods that the Company is unable to meet its obligations hereunder with respect to the registration of Registrable Securities because any Holder fails to furnish such information within three (3) Trading Days of the Company's request, any Liquidated Damages that are accruing at such time as to such Holder only shall be tolled and any Event that may otherwise occur solely because of such delay shall be suspended as to such Holder only, until such information is delivered to the Company; provided, however, if the failure of the Holder to furnish the required information results the occurrence of an Event under 2(c), any Liquidated Damages that are accruing at such time shall be tolled and any such Event that occurs as a result thereof shall be suspended until such time as the Holder furnishes such information.

(j) The Company shall cooperate with any registered broker through which a Holder proposes to resell its Registrable Securities in effecting a filing with FINRA pursuant to FINRA Rule 5110 as reasonably requested by any such Holder, and the Company shall pay the filing fee required for the first such filing within five (5) Business Days of the request therefor.

4. Registration Expenses. All fees and expenses incident to the Company's performance of or compliance with its obligations under this Agreement (excluding any underwriting discounts and selling commissions and all legal fees and expenses of legal counsel for any Holder) shall be borne by the Company whether or not any Registrable Securities are sold pursuant to a Registration Statement. The fees and expenses referred to in the foregoing sentence shall include, without limitation, (i) all registration and filing fees (including, without limitation, fees and expenses (A) with respect to filings required to be made with any Trading Market on which the Common Stock is then listed for trading, (B) with respect to compliance with applicable state securities or Blue Sky laws (including, without limitation, fees and disbursements of counsel for the Company in connection with Blue Sky qualifications or exemptions of the Registrable Securities and determination of the eligibility of the Registrable Securities for investment under the laws of such jurisdictions as requested by the Holders) and (C) if not previously paid by the Company pursuant to Section 3(j) hereof, with respect to any filing that may be required to be made by any broker through which a Holder intends to make sales of Registrable Securities with FINRA pursuant to FINRA Rule 5110, so long as the broker is receiving no more than a customary brokerage commission in connection with such sale), (ii) printing expenses (including, without limitation, expenses of printing certificates for Registrable Securities and of printing prospectuses if the printing of prospectuses is reasonably requested by the Holders of a majority of the Registrable Securities included in the Registration Statement), (iii) messenger, telephone and delivery expenses, (iv) fees and disbursements of counsel for the Company, (v) Securities Act liability insurance, if the Company so desires such insurance, and (vi) fees and expenses of all other Persons retained by the Company in connection with the consummation of the transactions contemplated by this Agreement. In addition, the Company shall be responsible for all of its internal expenses incurred in connection with the consummation of the transactions contemplated by this Agreement (including, without limitation, all salaries and expenses of its officers and employees performing legal or accounting duties), the expense of any annual audit and the fees and expenses incurred in connection with the listing of the Registrable Securities on any securities

exchange as required hereunder. In no event shall the Company be responsible for any underwriting, broker or similar fees or commissions of any Holder or any legal fees or other costs of the Holders.

5. Indemnification.

(a) Indemnification by the Company. The Company shall, notwithstanding any termination of this Agreement, indemnify and hold harmless each Holder, the officers, directors, agents, partners, members, managers, stockholders, Affiliates and employees of each of them, each Person who controls any such Holder (within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act) and the officers, directors, partners, members, managers, stockholders, agents and employees of each such controlling Person, to the fullest extent permitted by applicable law, from and against any and all losses, claims, damages, liabilities, costs (including, without limitation, reasonable costs of preparation and investigation and reasonable attorneys' fees) and expenses (collectively, "Losses"), as incurred, that arise out of or are based upon (i) any untrue or alleged untrue statement of a material fact contained in any Registration Statement, any Prospectus or in any amendment or supplement thereto (it being understood that the Holder has approved Annex A hereto for this purpose), or arising out of or relating to any omission or alleged omission to state a material fact required to be stated therein or necessary to make the statements therein (in the case of any Prospectus or supplement thereto, in light of the circumstances under which they were made) not misleading or (ii) any violation or alleged violation by the Company of the Securities Act, the Exchange Act or any state securities law, or any rule or regulation thereunder relating to the offer or sale of the Registrable Securities pursuant to the Registration Statement, except to the extent, but only to the extent that (A) such untrue statements, alleged untrue statements, omissions or alleged omissions are based solely upon information regarding such Holder furnished in writing to the Company by such Holder, or to the extent that such information relates to such Holder or such Holder's proposed method of distribution of Registrable Securities and was reviewed and approved in writing by such Holder expressly for use in the Registration Statement, such Prospectus or in any amendment or supplement thereto (it being understood that each Holder has approved Annex A hereto for this purpose) or (B) in the case of an occurrence of an event of the type specified in Section 3(c)(iii)-(vi), related to the use by a Holder of an outdated or defective Prospectus after the Company has notified such Holder in writing that the Prospectus is outdated or defective and prior to the receipt by such Holder of the Advice contemplated and defined in Section 6(d) below, following the receipt of the Advice the misstatement or omission giving rise to such Loss would have been corrected, or (C) any such Losses arise out of the Purchaser's (or any other indemnified Person's) failure to send or give a copy of the Prospectus or supplement (as then amended or supplemented), if required pursuant to Rule 172 under the Securities Act (or any successor rule), to the Persons asserting an untrue statement or alleged 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 Prospectus or supplement. The Company shall notify the Holders promptly of the institution, threat or assertion of any Proceeding arising from or in connection with the transactions contemplated by this Agreement of which the Company is aware. Such indemnity shall remain in full force and effect regardless of any investigation made by or on behalf of an Indemnified Party (as defined in Section 5(c)) and shall survive the transfer of the Registrable Securities by the Holders.

(b) Indemnification by Holders. Each Holder shall, severally and not jointly, indemnify and hold harmless the Company, its directors, officers, agents, stockholders, Affiliates and employees, each Person who controls the Company (within the meaning of Section 15 of the Securities Act and Section 20 of the Exchange Act), and the directors, officers, agents or employees of such controlling Persons, to the fullest extent permitted by applicable law, from and against all Losses, as incurred, arising out of or are based solely upon any untrue or alleged untrue statement of a material fact contained in any Registration Statement, any Prospectus, or in any amendment or supplement thereto, or arising out of or relating to any omission or alleged omission of a material fact required to be stated

therein or necessary to make the statements therein (in the case of any Prospectus, or supplement thereto, in light of the circumstances under which they were made) not misleading (i) to the extent, but only to the extent, that such untrue statements or omissions are based upon information regarding such Holder furnished in writing to the Company by such Holder expressly for use therein or (ii) to the extent that such information relates to such Holder or such Holder's proposed method of distribution of Registrable Securities and was reviewed and approved in writing by such Holder expressly for use in a Registration Statement (it being understood that the Holder has approved Annex A hereto for this purpose), such Prospectus or in any amendment or supplement thereto or (iii) in the case of an occurrence of an event of the type specified in Section 3(c)(iii)-(vi), to the extent, but only to the extent, related to the use by such Holder of an outdated or defective Prospectus after the Company has notified such Holder in writing that the Prospectus is outdated or defective and prior to the receipt by such Holder of the Advice contemplated in Section 6(d). In no event shall the liability of any selling Holder hereunder be greater in amount than the dollar amount of the net proceeds received by such Holder upon the sale of the Registrable Securities giving rise to such indemnification obligation.

(c) Conduct of Indemnification Proceedings. If any Proceeding shall be brought or asserted against any Person entitled to indemnity hereunder (an "**Indemnified Party**"), such Indemnified Party shall promptly notify the Person from whom indemnity is sought (the "**Indemnifying Party**") in writing, and the Indemnifying Party shall have the right to assume the defense thereof, including the employment of counsel reasonably satisfactory to the Indemnified Party and the payment of all reasonable fees and expenses incurred in connection with defense thereof, *provided*, that the failure of any Indemnified Party to give such notice shall not relieve the Indemnifying Party of its obligations or liabilities pursuant to this Agreement, except (and only) to the extent that it shall be finally determined by a court of competent jurisdiction (which determination is not subject to appeal or further review) that such failure shall have materially and adversely prejudiced the Indemnifying Party.

An Indemnified Party shall have the right to employ separate counsel in any such Proceeding and to participate in the defense thereof, but the fees and expenses of such counsel shall be at the expense of such Indemnified Party or Parties unless: (1) the Indemnifying Party has agreed in writing to pay such fees and expenses; (2) the Indemnifying Party shall have failed promptly to assume the defense of such Proceeding and to employ counsel reasonably satisfactory to such Indemnified Party in any such Proceeding; or (3) the named parties to any such Proceeding (including any impleaded parties) include both such Indemnified Party and the Indemnifying Party, and such Indemnified Party shall have been advised by counsel that a conflict of interest exists if the same counsel were to represent such Indemnified Party and 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 thereof and such counsel shall be at the expense of the Indemnifying Party); *provided*, that the Indemnifying Party shall not be liable for the fees and expenses of more than one separate firm of attorneys at any time for all Indemnified Parties. The Indemnifying Party shall not be liable for any settlement of any such Proceeding effected without its prior written consent, which consent shall not be unreasonably withheld, delayed or conditioned. No Indemnifying Party shall, without the prior written consent of the Indemnified Party, effect any settlement of any pending Proceeding in respect of which any Indemnified Party is a party, unless such settlement includes an unconditional release of such Indemnified Party from all liability on claims that are the subject matter of such Proceeding and such settlement does not include any non-monetary limitation on the actions of any Indemnified Party or any of its affiliates or any admission of fault or liability on behalf of any such Indemnified Party.

Subject to the terms of this Agreement, all fees and expenses of the Indemnified Party (including reasonable fees and expenses to the extent incurred in connection with investigating or preparing to defend such Proceeding in a manner not inconsistent with this Section 5) shall be paid to the

Indemnified Party, as incurred, within 20 Trading Days of written notice thereof to the Indemnifying Party; *provided*, that the Indemnified Party shall promptly reimburse the Indemnifying Party for that portion of such fees and expenses applicable to such actions for which such Indemnified Party is finally judicially determined to not be entitled to indemnification hereunder. The failure to deliver written notice to the Indemnifying Party within a reasonable time of the commencement of any such action shall not relieve such Indemnifying Party of any liability to the Indemnified Party under this Section 5, except to the extent that the Indemnifying Party is materially and adversely prejudiced in its ability to defend such action.

(d) Contribution. If a claim for indemnification under Section 5(a) or 5(b) is unavailable to an Indemnified Party or insufficient to hold an Indemnified Party harmless for any Losses, 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 Losses, in such proportion as is appropriate to reflect the relative fault of the Indemnifying Party and Indemnified Party in connection with the actions, statements or omissions that resulted in such Losses as well as any other relevant equitable considerations. The relative fault of such Indemnifying Party and Indemnified Party shall be determined by reference to, among other things, whether any action in question, including any untrue or alleged untrue statement of a material fact or omission or alleged omission of a material fact, has been taken or made by, or relates to information supplied by, such Indemnifying Party or Indemnified Party, and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such action, statement or omission. The amount paid or payable by a party as a result of any Losses shall be deemed to include, subject to the limitations set forth in this Agreement, any reasonable attorneys' or other reasonable fees or expenses incurred by such party in connection with any Proceeding to the extent such party would have been indemnified for such fees or expenses if the indemnification provided for in this Section 5 was available to such party in accordance with its terms.

The parties hereto agree that it would not be just and equitable if contribution pursuant to this Section 5(d) were determined by pro rata allocation or by any other method of allocation that does not take into account the equitable considerations referred to in the immediately preceding paragraph. Notwithstanding the provisions of this Section 5(d), (A) no Holder shall be required to contribute, in the aggregate, any amount in excess of the amount by which the net proceeds actually received by such Holder from the sale of the Registrable Securities subject to the Proceeding exceeds the amount of any damages that such Holder has otherwise been required to pay by reason of such untrue or alleged untrue statement or omission or alleged omission and (B) no contribution will be made under circumstances where the maker of such contribution would not have been required to indemnify the Indemnified Party under the fault standards set forth in this Section 5. 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.

The indemnity and contribution agreements contained in this Section 5 are in addition to any liability that the Indemnifying Parties may have to the Indemnified Parties and are not in diminution or limitation of the indemnification provisions under the Purchase Agreement.

6. Miscellaneous.

(a) Remedies. Subject to the limitations set forth elsewhere in this Agreement, in the event of a breach by the Company or by a Holder of any of their obligations under this Agreement, each Holder or the Company, as the case may be, in addition to being entitled to exercise all rights granted by law and under this Agreement, including recovery of damages, will be entitled to specific performance of its rights under this Agreement. The Company and each Holder agree that monetary damages would not provide adequate compensation for any losses incurred by reason of a breach by it of any of the



provisions of this Agreement and hereby further agrees that, in the event of any action for specific performance in respect of such breach, it shall waive the defense that a remedy at law would be adequate.

(b) No Piggyback on Registrations. Neither the Company nor any of its security holders (other than the Holders in such capacity pursuant hereto) may include securities of the Company in a Registration Statement other than the Registrable Securities.

(c) Compliance. Each Holder covenants and agrees that it will comply with the prospectus delivery requirements of the Securities Act as applicable to it (unless an exemption therefrom is available) in connection with sales of Registrable Securities pursuant to the Registration Statement, and shall sell the Registrable Securities only in accordance with a method of distribution described in the Registration Statement

(d) Discontinued Disposition. By its acquisition of Registrable Securities, the Holder agrees that, upon receipt of a notice from the Company of the occurrence of any event of the kind described in Section 3(c)(iii)-(vi), such Holder will forthwith discontinue disposition of such Registrable Securities under a Registration Statement until it is advised in writing (the "Advice") by the Company that the use of the applicable Prospectus (as it may have been supplemented or amended) may be resumed. The Company will use its commercially reasonable efforts to ensure that the use of the Prospectus may be resumed as promptly as is practicable. The Company may provide appropriate stop orders to enforce the provisions of this paragraph.

(e) No Inconsistent Agreements. The Company has not entered, as of the date hereof, nor shall the Company, on or after the date hereof, enter into any agreement with respect to its securities, that would have the effect of impairing the rights granted to the Holders in this Agreement or otherwise conflicts with the provisions hereof.

(f) Amendments and Waivers. The provisions of this Agreement, including the provisions of this sentence, may not be amended, modified or supplemented, or waived unless the same shall be in writing and signed by the Company and Holders holding no less than a majority of the then outstanding Registrable Securities, *provided* that any party may give a waiver as to itself. Notwithstanding the foregoing, a waiver or consent to depart from the provisions hereof with respect to a matter that relates exclusively to the rights of Holders and that does not directly or indirectly affect the rights of other Holders may be given by Holders of all of the Registrable Securities to which such waiver or consent relates; *provided, however*, that the provisions of this sentence may not be amended, modified, or supplemented except in accordance with the provisions of the immediately preceding sentence.

(g) Notices. Any and all notices or other communications or deliveries required or permitted to be provided hereunder shall be delivered as set forth in the Purchase Agreement.

(h) Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the successors and permitted assigns of each of the parties and shall inure to the benefit of each Holder. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and assigns any rights, remedies, obligations, or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement. The Company may not assign its rights (except by merger or in connection with another entity acquiring all or substantially all of the Company's assets) or obligations hereunder without the prior written consent of all the Holders of the then outstanding Registrable Securities. Each Holder may assign its respective rights hereunder in the manner and to the Persons as permitted under the Purchase Agreement *provided* in each case that (i) the Holder agrees in writing with the transferee or assignee to assign such rights and related obligations under this Agreement, and for the transferee or assignee to assume such obligations, and a

copy of such agreement is furnished to the Company within a reasonable time after such assignment, (ii) the Company is, within a reasonable time after such transfer or assignment, furnished with written notice of the name and address of such transferee or assignee and the securities with respect to which such registration rights are being transferred or assigned, (iii) at or before the time the Company received the written notice contemplated by clause (ii) of this sentence, the transferee or assignee agrees in writing with the Company to be bound by all of the provisions contained herein and (iv) the transferee is an “accredited investor,” as that term is defined in Rule 501 of Regulation D.

(i) Execution and Counterparts. This Agreement may be executed in two or more counterparts, each of which when so executed shall be deemed to be an original and, all of which taken together shall constitute one and the same Agreement and shall become effective when counterparts have been signed by each party and delivered to the other party, it being understood that both parties need not sign the same counterpart. In the event that any signature is delivered by facsimile transmission or by e-mail delivery of a “.pdf” format data file, such signature shall create a valid and binding obligation of the party executing (or on whose behalf such signature is executed) with the same force and effect as if such facsimile or “.pdf” signature were the original thereof.

(j) Governing Law. All questions concerning the construction, validity, enforcement and interpretation of this Agreement shall be determined in accordance with the provisions of the Purchase Agreement.

(k) Cumulative Remedies. Except as provided herein, the remedies provided herein are cumulative and not exclusive of any other remedies provided by law.

(l) Severability. If any term, provision, covenant or restriction of this Agreement is held by a court of competent jurisdiction to be invalid, illegal, void or unenforceable, the remainder of the terms, provisions, covenants and restrictions set forth herein shall remain in full force and effect and shall in no way be affected, impaired or invalidated, and the parties hereto shall use their good faith reasonable efforts to find and employ an alternative means to achieve the same or substantially the same result as that contemplated by such term, provision, covenant or restriction. It is hereby stipulated and declared to be the intention of the parties that they would have executed the remaining terms, provisions, covenants and restrictions without including any of such that may be hereafter declared invalid, illegal, void or unenforceable.

(m) Headings. The headings in this Agreement are for convenience only and shall not limit or otherwise affect the meaning hereof.

[Signature pages follow]



IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement
as of the date first written above.

PIERIS PHARMACEUTICALS, INC.

By: /s/ Stephen S. Yoder
Name: Stephen S. Yoder
Title: President and Chief Executive Officer

IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

HOLDER: Aquilo Capital LP

AUTHORIZED SIGNATORY

By: /s/ Marc Schneidman
Name: Marc Schneidman
Title: Managing Member, Aquilo Capital
Management, LLC, General Partner

ADDRESS FOR NOTICE

c/o: _____

Street: _____

City/State/Zip: _____

Attention: _____

Tel: _____

Fax: _____

Email: _____

IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

HOLDER: Biotechnology Value Fund, L.P.

AUTHORIZED SIGNATORY

By: /s/ Mark Lampert
Name: Mark Lampert
Title: President BVF Inc., GP BVF Partners LP

ADDRESS FOR NOTICE

c/o: _____

Street: _____

City/State/Zip: _____

Attention: _____

Tel: _____

Fax: _____

Email: _____

IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

HOLDER: Biotechnology Value Fund II, L.P.

AUTHORIZED SIGNATORY

By: /s/ Mark Lampert
Name: Mark Lampert
Title: President BVF Inc., GP BVF Partners LP

ADDRESS FOR NOTICE

c/o: _____

Street: _____

City/State/Zip: _____

Attention: _____

Tel: _____

Fax: _____

Email: _____

IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

HOLDER: Biotechnology Value Trading Fund OS, L.P.

AUTHORIZED SIGNATORY

By: /s/ Mark Lampert
Name: Mark Lampert
Title: President BVF Inc., GP BVF Partners LP,
Sole Member for BVF Partners OS, Ltd.

ADDRESS FOR NOTICE

c/o: _____

Street: _____

City/State/Zip: _____

Attention: _____

Tel: _____

Fax: _____

Email: _____

IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

HOLDER: MSI BVF SPV, L.L.C.

AUTHORIZED SIGNATORY

By: /s/ Mark Lampert
Name: Mark Lampert
Title: President BVF Inc., GP BVF Partners LP,
Attorney-in-Fact

ADDRESS FOR NOTICE

c/o: _____

Street: _____

City/State/Zip: _____

Attention: _____

Tel: _____

Fax: _____

Email: _____

IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

HOLDER: EcoR1 Capital Fund, LP

AUTHORIZED SIGNATORY

By: /s/ Oleg Nodelman
Name: Oleg Nodelman
Title: Manager, EcoR1 Capital LLC, as GP

ADDRESS FOR NOTICE

c/o: _____

Street: _____

City/State/Zip: _____

Attention: _____

Tel: _____

Fax: _____

Email: _____

IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

HOLDER: EcoR1 Capital Fund Qualified, LP

AUTHORIZED SIGNATORY

By: /s/ Oleg Nodelman
Name: Oleg Nodelman
Title: Manager, EcoR1 Capital LLC, as GP

ADDRESS FOR NOTICE

c/o: _____

Street: _____

City/State/Zip: _____

Attention: _____

Tel: _____

Fax: _____

Email: _____

IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

HOLDER: Samsara BioCapital, L.P.

AUTHORIZED SIGNATORY

By: Samsara BioCapital GP, LLC

By: /s/ Srinivas Akkaraju, MD, PhD
Name: Srinivas Akkaraju, MD, PhD
Title: Managing Member

ADDRESS FOR NOTICE

c/o: _____

Street: _____

City/State/Zip: _____

Attention: _____

Tel: _____

Fax: _____

Email: _____



IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

HOLDER: CITADEL MULTI-STRATEGY EQUITIES
MASTER FUND LTD.

AUTHORIZED SIGNATORY

By: Citadel Advisors LLC, its portfolio manager

By: /s/ Shellane Mulcahy
Name: Shellane Mulcahy
Title: Authorized Signatory

ADDRESS FOR NOTICE

c/o: _____

Street: _____

City/State/Zip: _____

Attention: _____

Tel: _____

Fax: _____

Email: _____

PLAN OF DISTRIBUTION

We are registering the shares of Common Stock issued to the selling stockholders and issuable upon exercise of the warrants issued to the selling stockholders to permit the resale of these shares of Common Stock by the holders of the shares of Common Stock and warrants from time to time after the date of this prospectus. We will not receive any of the proceeds from the sale by the selling stockholders of the shares of Common Stock. We will bear all fees and expenses incident to our obligation to register the shares of Common Stock.

The selling stockholders may sell all or a portion of the shares of Common Stock beneficially owned by them and offered hereby from time to time directly or through one or more underwriters, broker-dealers or agents. If the shares of Common Stock are sold through underwriters or broker-dealers, the selling stockholders will be responsible for underwriting discounts or commissions or agent's commissions. The shares of Common Stock may be sold on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale, in the over-the-counter market or in transactions otherwise than on these exchanges or systems or in the over-the-counter market and in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices. These sales may be effected in transactions, which may involve crosses or block transactions. The selling stockholders may use any one or more of the following methods when selling shares:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- settlement of short sales entered into after the effective date of the registration statement of which this prospectus is a part;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- through the writing or settlement of options or other hedging transactions, whether such options are listed on an options exchange or otherwise;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

The selling stockholders also may resell all or a portion of the shares in open market transactions in reliance upon Rule 144 under the Securities Act, as permitted by that rule, or Section 4(a)(1) under the Securities Act, if available, rather than under this prospectus, provided that they meet the criteria and conform to the requirements of those provisions.

conform to the requirements of those provisions.

Broker-dealers engaged by the selling stockholders may arrange for other broker-dealers to participate in sales. If the selling stockholders effect such transactions by selling shares of Common Stock to or through underwriters, broker-dealers or agents, such underwriters, broker-dealers or agents may receive commissions in the form of discounts, concessions or commissions from the selling stockholders or commissions from purchasers of the shares of Common Stock for whom they may act as agent or to whom they may sell as principal. Such commissions will be in amounts to be negotiated, but, except as set forth in a supplement to this Prospectus, in the case of an agency transaction will not be in excess of a customary brokerage commission in compliance with FINRA Rule 2121; and in the case of a principal transaction a markup or markdown in compliance with FINRA Rule 2121.01.

In connection with sales of the shares of Common Stock or otherwise, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the shares of Common Stock in the course of hedging in positions they assume. The selling stockholders may also sell shares of Common Stock short and if such short sale shall take place after the date that this Registration Statement is declared effective by the Commission, the selling stockholders may deliver shares of Common Stock covered by this prospectus to close out short positions and to return borrowed shares in connection with such short sales. The selling stockholders may also loan or pledge shares of Common Stock to broker-dealers that in turn may sell such shares, to the extent permitted by applicable law. The selling stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction). Notwithstanding the foregoing, the selling stockholders have been advised that they may not use shares registered on this registration statement to cover short sales of our common stock made prior to the date the registration statement, of which this prospectus forms a part, has been declared effective by the SEC.

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

The selling stockholders and any broker-dealer or agents participating in the distribution of the shares of Common Stock may be deemed to be “underwriters” within the meaning of Section 2(11) of the Securities Act in connection with such sales. In such event, any commissions paid, or any discounts or concessions allowed to, any such broker-dealer or agent and any profit on the resale of the shares purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Selling Stockholders who are “underwriters” within the meaning of Section 2(11) of the Securities Act will be subject to the applicable prospectus delivery requirements of the Securities Act including Rule 172 thereunder and may be subject to certain statutory liabilities of, including but not limited to, Sections 11, 12 and 17 of the Securities Act and Rule 10b-5 under the Securities Exchange Act of 1934, as amended, or the Exchange Act.

Each selling stockholder has informed the Company that it is not a registered broker-dealer and does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the Common Stock. Upon the Company being notified in writing by a selling stockholder that

any material arrangement has been entered into with a broker-dealer for the sale of common stock through a block trade, special offering, exchange distribution or secondary distribution or a purchase by a broker or dealer, a supplement to this prospectus will be filed, if required, pursuant to Rule 424(b) under the Securities Act, disclosing (i) the name of each such selling stockholder and of the participating broker-dealer(s), (ii) the number of shares involved, (iii) the price at which such the shares of Common Stock were sold, (iv) the commissions paid or discounts or concessions allowed to such broker-dealer(s), where applicable, (v) that such broker-dealer(s) did not conduct any investigation to verify the information set out or incorporated by reference in this prospectus, and (vi) other facts material to the transaction.

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

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

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

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

Annex B

PIERIS PHARMACEUTICALS, INC.
SELLING STOCKHOLDER NOTICE AND QUESTIONNAIRE

Pieris Pharmaceuticals Announces \$32 Million Private Placement and Potential Funding Mechanism for PRS-060 Co-development Opt-in

BOSTON, MA, November 04, 2019 - *Pieris Pharmaceuticals, Inc.* (NASDAQ: PIRS), a clinical-stage biotechnology company advancing novel biotherapeutics through its proprietary Anticalin® technology platform for respiratory diseases, cancer and other indications, today announced that it has entered into a securities purchase agreement with existing and new institutional investors to raise \$32 million.

The private placement was led by BVF Partners L.P., with significant additional participation from EcoR1 Capital, Aquilo Capital Management, Surveyor Capital (a Citadel company), and Samsara BioCapital.

The private placement will consist of 9,014,960 units, at a price of \$3.55 per unit. Each unit will consist of (i) one share of Pieris' common stock or 0.001 non-voting Series C convertible preferred stock, and (ii) one immediately-exercisable warrant to purchase one share of common stock at an exercise price of \$7.10 per share. Each share of non-voting Series C convertible preferred stock is convertible into 1,000 shares of Pieris common stock, provided that conversion will be prohibited if, as a result, the holder and its affiliates would own more than 9.99% of the total number of shares of Pieris common stock then outstanding.

The warrants are intended to facilitate Pieris' exercise of its co-development option for PRS-060/AZ1402 following the conclusion of a positive phase 2a study. If top-line results of that study disclose achievement of the primary efficacy endpoint and the stock reaches a pre-specified price, then the warrants will expire sixty days following such disclosure and may only be exercised for cash. Otherwise, the warrants will be exercisable for a period of five years from the date of issuance.

The closing of the financing is expected to take place on or about November 6, 2019 and is subject to standard closing conditions. Pieris expects to use the proceeds from the financing for continued development of its immuno-oncology franchise, including PRS-343, its 4-1BB/HER2 bispecific, and PRS-344, its 4-1BB/PD-L1 bispecific in co-development with Servier. The Company also expects to use these proceeds for advancement of its proprietary pipeline of inhalable respiratory drug candidates following proof-of-mechanism with respect to PRS-060, validating the inhaled Anticalin platform as a potential drug class, as well as for working capital and general corporate purposes.

William Blair & Company, L.L.C. acted as sole placement agent for the transaction.

The securities to be sold in this private placement have not been registered under the Securities Act of 1933, as amended (the "Securities Act"), or applicable state securities laws, and accordingly may not be offered or sold in the United States except pursuant to an effective registration statement or an applicable exemption from the registration requirements of the Securities Act and such applicable state securities laws. Pieris has agreed to file a registration statement with the Securities and Exchange Commission (the "SEC") registering the resale of the shares of common stock, the shares of common stock issuable upon the conversion of the Series C convertible preferred stock, and the common stock issuable upon the exercise of the warrants issued in this private placement.

This press release does not constitute an offer to sell or the solicitation of an offer to buy the securities, nor shall there be any sale of the securities in any state in which such offer, solicitation or sale would be unlawful prior to the registration or qualification under the securities laws of such state. Any offering of the securities under the resale registration statement will only be by means of a prospectus.

About Pieris Pharmaceuticals:

Pieris is a clinical-stage biotechnology company that discovers and develops Anticalin protein-based drugs to target validated disease pathways in a unique and transformative way. Our pipeline includes inhalable Anticalin proteins to treat respiratory diseases and immuno-oncology multi-specifics tailored for the tumor microenvironment. Proprietary to Pieris, Anticalin proteins are a novel class of therapeutics validated in the clinic and by partnerships with leading pharmaceutical companies. Anticalin® is a registered trademark of Pieris. For more information, visit www.pieris.com.

Forward Looking Statement:

This press release contains forward-looking statements as that term is defined in Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. Statements in this press release that are not purely historical are forward-looking statements. Such forward-looking statements include, among other things, the expected closing of the private placement; the expected timing and potential outcomes of the reporting by the Company of key clinical data from its lead programs, references to novel technologies and methods and our business and product development plans, including the advancement of our proprietary and co-development programs into and through the clinic and the expected timing for reporting data or making IND filings related to our programs, and partnering and funding prospects for any such programs. Actual results could differ from those projected in any forward-looking statements due to numerous factors. Such factors include, among others, our ability to satisfy the closing conditions for the private placement; our ability to raise the additional funding we will need to continue to pursue our business and product development plans; the inherent uncertainties associated with developing new products or technologies and operating as



a development stage company; our ability to develop, complete clinical trials for, obtain approvals for and commercialize any of our product candidates, including our ability to recruit and enroll patients in our studies; our ability to address the requests of the FDA; competition in the industry in which we operate; the timing and nature of data from the Phase 2a study of PRS-060/AZD1402; whether or not Pieris opts-into co-development of PRS-060/AZD1402; whether or not any of the warrants to be issued in the private placement will be exercised for cash; the use of any proceeds from any warrant exercise; and market conditions. These forward-looking statements are made as of the date of this press release, and we assume no obligation to update the forward-looking statements, or to update the reasons why actual results could differ from those projected in the forward-looking statements, except as required by law. Investors should consult all of the information set forth herein and should also refer to the risk factor disclosure set forth in the reports and other documents we file with the SEC available at www.sec.gov, including without limitation the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2018 and the Company's Quarterly Reports on Form 10-Q.

Investor Relations Contact:

Pieris Pharmaceuticals, Inc.
Maria Kelman
Director of Investor Relations
+1 857 362 9635
kelman@pieris.com
