

**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): **March 10, 2017**

**GEMPHIRE THERAPEUTICS INC.**

(Exact name of registrant as specified in its charter)

**Delaware**  
(State or other jurisdiction  
of incorporation)

**001-37809**  
(Commission  
File No.)

**47-2389984**  
(IRS Employer  
Identification No.)

**17199 N. Laurel Park Drive, Suite 401  
Livonia, Michigan 48152**

(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: **(248) 681-9815**

**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))

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**Cautionary Note Regarding Forward Looking Statements**

This Current Report on Form 8-K contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 with respect to the Company's anticipated closing of the private placement it recently entered into and the anticipated use of proceeds therefrom. Actual results may differ materially from those indicated by such forward-looking statements as a result of various important factors, including: the Company's ability to close the private placement; the success and timing of the Company's regulatory submissions and pre-clinical and clinical trials; regulatory requirements or developments; changes to the Company's clinical trial designs and regulatory pathways; changes in the Company's capital resource requirements; the Company's ability to obtain additional financing; the Company's ability to successfully market and distribute its product candidate, if approved; the Company's ability to obtain and maintain its intellectual property protection; and other factors discussed in the "Risk Factors" section of the Company's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2016, and in other filings the Company makes with the Securities and Exchange Commission from time to time. In addition, the forward-looking statements included in this Current Report on Form 8-K represent the Company's views as of the date hereof. The Company anticipates that subsequent events and developments will cause the Company's views to change. However, while the Company may elect to update these forward-looking statements at some point in the future, the Company specifically disclaims any obligation to do so, except as required by law. These forward-looking statements should not be relied upon as representing the Company's views as of any date subsequent to the date hereof.

**Item 1.01 Entry into a Material Definitive Agreement.**

On March 10, 2017, Gemphire Therapeutics Inc. (the "Company") entered into a Securities Purchase Agreement (the "Purchase Agreement") with certain accredited investors (the "Purchasers"), pursuant to which the Company, in a private placement, agreed to issue and sell to the Purchasers 1,324,256 units at a price of \$9.47 per unit for total gross proceeds to the Company of approximately \$12.5 million before deducting placement agent fees and estimated offering expenses (the "Private Placement"). Each unit consists of one share of the Company's common stock, par value \$0.001 per share (the "Common Stock"), and a warrant to purchase 0.75 shares of Common Stock (the "Warrants"). The Warrants will have an initial exercise price of \$10.40 per share. The Private Placement is expected to close on or about March 15, 2017, subject to the satisfaction of customary closing conditions. Under the Purchase Agreement, the Company has agreed to use the net proceeds from the Private Placement to fund development costs of gemcabene, including the planned Phase 2 clinical trial of gemcabene in NASH patients, to fund manufacturing related activities for gemcabene and for general corporate purposes. The Company has granted the Purchasers indemnification rights with respect to its representations, warranties, covenants and agreements under the Purchase Agreement.

In connection with the Private Placement, the Company entered into a Registration Rights Agreement with the Purchasers, dated as of March 10, 2017 (the "Registration Rights Agreement"), pursuant to which the Company has agreed to file a registration statement with the Securities and Exchange Commission (the "SEC") covering the resale of the shares of Common Stock sold in the Private Placement and the shares of common Stock issuable upon exercise of the Warrants (the "Warrant Shares"). The Company has agreed to file such registration statement within 30 days of the closing of the Private Placement. The Registration Rights Agreement includes customary indemnification rights in connection with the registration statement.

The Warrants will expire on March 15, 2022, five years after the date on which they will be initially issued. Prior to expiration, subject to the terms and conditions set forth in the Warrants, the holders of such Warrants may exercise the Warrants for shares of Common Stock by providing notice to the Company and paying the exercise price per share for each share so exercised.

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The foregoing summary descriptions of the Purchase Agreement, the Registration Rights Agreement and the Warrants do not purport to be complete and are qualified in their entirety by reference to the forms of the Warrant, the Purchase Agreement and the Registration Rights Agreement, which are attached as Exhibits 4.1, 10.1 and 10.2 hereto, respectively, and incorporated herein by reference.

The representations, warranties and covenants contained in the Purchase Agreement, the Registration Rights Agreement and the Warrants were made solely for the benefit of the parties to the Purchase Agreement, the Registration Rights Agreement and the Warrants and may be subject to limitations agreed upon by the contracting parties. Accordingly, the Purchase Agreement, the Registration Rights Agreement and the Warrants are incorporated herein by reference only to provide investors with information regarding the terms of such documents and not to provide investors with any other factual information regarding the Company or its business, and should be read in conjunction with the disclosures in the Company's periodic reports and other filings with the SEC.

### **Item 3.02 Unregistered Sales of Equity Securities.**

Pursuant to the Private Placement described in Item 1.01 above, which description is hereby incorporated by reference into this Item 3.02, the Company has agreed to sell the shares of Common Stock and the Warrants to be issued in the Private Placement to the Purchasers, all of whom are accredited investors, in reliance on the exemption from registration provided by Section 4(a)(2) of the Securities Act of 1933, as amended (the "Securities Act"), and Rule 506 of Regulation D promulgated thereunder. The Company will rely on this exemption from registration based in part on representations made by the Purchasers. Piper Jaffray & Co. acted as sole lead placement agent and Laidlaw & Company (UK) Ltd. and LifeSci Capital LLC acted as co-placement agents for the Company in connection with the Private Placement and will receive fees of approximately \$1.0 million in the aggregate. The net proceeds to the Company from the Private Placement, after deducting the placement agent fees and other expenses payable by the Company, are expected to be approximately \$11.2 million and are expected, together with cash on hand, to be sufficient to fund the Company's operations through 2018. The shares of Common Stock, Warrants and Warrant Shares have not been registered under the Securities Act or applicable state securities laws and may not be offered or sold in the United States absent registration under the Securities Act or an exemption from such registration requirements. Neither this Current Report on Form 8-K nor any exhibit attached hereto shall constitute an offer to sell or the solicitation of an offer to buy shares of Common Stock, Warrants or any other securities of the Company.

### **Item 9.01 Financial Statements and Exhibits.**

(d) Exhibits

- 4.1 Form of Warrant.
- 10.1 Form of Securities Purchase Agreement, dated as of March 10, 2017.
- 10.2 Form of Registration Rights Agreement, dated as of March 10, 2017.

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### **SIGNATURE**

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

Dated: March 13, 2017

GEMPHIRE THERAPEUTICS INC.

By           /s/ Jeffrey S. Mathiesen            
Name: Jeffrey S. Mathiesen  
Title: Chief Financial Officer

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### **EXHIBIT INDEX**

<b>Exhibit</b>	<b>Description</b>
4.1	Form of Warrant.
10.1	Form of Securities Purchase Agreement, dated as of March 10, 2017.



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. NOTWITHSTANDING THE FOREGOING, THE SECURITIES MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT OR OTHER LOAN OR FINANCING ARRANGEMENT SECURED BY THE SECURITIES.

**GEMPHIRE THERAPEUTICS INC.**

**FORM OF WARRANT TO PURCHASE COMMON STOCK**

Warrant No.

Original Issue Date: March 15, 2017

Gemphire Therapeutics Inc., a Delaware 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 (each such share, a "*Warrant Share*" and all such shares, the "*Warrant Shares*") at an exercise price per share equal to \$10.40 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 and through and including 5:30 P.M., New York City time, on March 15, 2022 (the "*Expiration Date*"), and subject to the following terms and conditions:

This Warrant (this "*Warrant*") is one of a series of similar warrants issued pursuant to that certain Securities Purchase Agreement, dated March 10, 2017 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.
2. Registration of Warrants. The Company shall register this Warrant, upon records to be maintained by the Company for that purpose (the "*Warrant Register*"), in the name of the record Holder (which shall be the initial Holder set forth above 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 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 and making the representations and certifications set forth in Sections 3.2(c), (e) and (f) of the Purchase Agreement, 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 Warrants.

(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 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 of this Warrant not exercised prior thereto shall be and become void and of no value and this Warrant shall be terminated and no longer outstanding.

(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 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 the last of such items 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 Sections 3.2(c), (d), (e) and (f) of the Purchase Agreement are true and correct as of the Exercise Date 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. 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 (if any).

5. Delivery of Warrant Shares.

(a) Upon exercise of this Warrant, the Company shall promptly (but in no event later than three (3) Trading Days after the Exercise Date) 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 (or uncertificated 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 volume and manner of sale restrictions pursuant to Rule 144 under the Securities Act, in which case such Holder shall receive a certificate for the Warrant Shares (or uncertificated 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. 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.

(b) If by the close of the third (3<sup>rd</sup>) Trading Day after delivery of an 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 (or such number of uncertificated Warrant Shares) in the manner required pursuant to Section 5(a), and if after such third (3<sup>rd</sup>) Trading Day and prior to the receipt of such Warrant Shares, the Holder purchases (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, within three (3) Trading Days after the Holder's request and in the Holder's sole discretion, 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 Company's obligation to deliver such Warrant Shares shall terminate or (2) promptly honor its obligation to deliver to the Holder a certificate or certificates representing such Warrant Shares (or such Warrant Shares in uncertificated form) 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, times (B) the closing bid price of a share of Common Stock on the Exercise Date.

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(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 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 the Warrant Shares (or uncertificated Warrant Shares) as required pursuant to the terms hereof.

6. Charges, Taxes and Expenses. Issuance and delivery of certificates for Warrant Shares (or uncertificated Warrant Shares) issuable 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 (or uncertificated shares of Common Stock), 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 uncertificated 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 covenants that it will at all times 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 nonassessable. 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.

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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 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 of the Company, then in each such case the Exercise Price shall be multiplied by a fraction, the numerator of which shall be the number of shares of Common Stock outstanding immediately before such event and the denominator of which shall be the number of shares of Common Stock outstanding immediately after 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 (in each case, "*Distributed Property*"), 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 without regard to any limitation on exercise contained therein.

(c) Fundamental Transactions. If, at any time while this Warrant is outstanding (i) the Company effects any merger or consolidation of the Company with or into another Person, in which the Company is not the survivor or the stockholders of the Company immediately prior to such merger or consolidation do not own, directly or indirectly, at least 50% of the voting securities of the surviving entity, (ii) the Company effects any sale of all or substantially all of its assets or a majority of its Common Stock is acquired by a third party, in each case, in one or a series of related transactions, (iii) any tender offer or exchange offer (whether by the Company or another Person) is completed pursuant to which all or substantially all of the holders of Common Stock are permitted to 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) (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*"). The Company shall not effect any such Fundamental Transaction unless any successor to the Company, surviving entity or the corporation purchasing or otherwise acquiring such assets or other appropriate corporation or Person ("*Successor Company*") assumes

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the obligation to deliver to the Holder such Alternate Consideration in accordance with the foregoing provisions and, except where the Fundamental Transaction occurs under clauses (ii), (iii) or (iv) above, no Warrants remain outstanding following the Fundamental Transaction and the Alternate Consideration consists entirely of cash, such Successor Company is a publicly traded corporation whose stock is quoted or listed for trading on The New York Stock Exchange, Inc. or the Nasdaq Stock Market. The provisions of this paragraph (c) shall similarly apply to subsequent transactions analogous of a Fundamental Transaction type.

(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, at the written request of the Holder, 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 detail the facts upon which such adjustment is based. Upon written request, 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 or any subsidiary, (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. To the extent that any notice provided hereunder constitutes, or contains, material, non-public information regarding the Company or any of its subsidiaries, the Company shall simultaneously file such notice with the Commission (as defined in the Purchase Agreement) pursuant to a Current Report on Form 8-K.

10. Payment of Exercise Price. The Holder shall pay the Exercise Price in immediately available funds; *provided, however*, that if, on any Exercise Date there is not an effective Registration Statement (as defined in that certain Registration Rights Agreement, of even date herewith, by and among the Company and the several Purchasers signatory thereto) registering, or no current prospectus available for, the resale of the Warrant Shares by the Holder, then the Holder may, in its sole discretion, satisfy its obligation to pay the Exercise Price through a

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“cashless exercise”, in which event the Company shall issue to the Holder the number of Warrant Shares determined as follows:

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

where:

“X” equals the number of Warrant Shares to be issued to the Holder;

“Y” equals the total number of Warrant Shares with respect to which this Warrant is being exercised;

“A” equals the average of the Closing Sale Prices of the shares of Common Stock (as reported by Bloomberg Financial Markets) for the five (5) consecutive Trading Days ending on the date immediately preceding the Exercise Date; and

“B” equals 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 the 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 trade 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 last trade price is reported for such security by Bloomberg Financial Markets, the average of the bid prices, or the ask prices, respectively, of any market makers for such security as reported in the “pink sheets” by Pink Sheets LLC (or its successor entity). 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 promulgated under the Securities Act, it is intended, understood and acknowledged that the Warrant Shares issued in a “cashless exercise” transaction shall be deemed to have been acquired by the Holder, and the holding period for the Warrant Shares shall be deemed to have commenced, on the date this Warrant was originally issued pursuant to the Purchase Agreement (provided that the Commission continues to take the position that such treatment is proper at the time of such exercise).

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 and its Affiliates and any other Persons whose beneficial ownership of Common Stock would be aggregated with the Holder’s for purposes of Section 13(d) of the

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Exchange Act, does not exceed 4.999% 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), 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 limitation contained in this Section 11 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 such aggregate percentage limitation, 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 (3) 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, which will not be effective until the sixty-first (61<sup>st</sup>) day after such notice is delivered to the Company, the Holder may waive the provisions of this Section 11 (but such waiver will not affect any other holder) to change the beneficial ownership limitation to 9.999% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon exercise of this Warrant, and the provisions of this Section 11 shall continue to apply. Upon such a change by a Holder of the beneficial ownership limitation from such 4.999% limitation to such 9.999% limitation, the beneficial ownership limitation may not be further waived by such Holder.

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 (2) Trading Days' prior notice to the other Persons in accordance with this Section 13.

14. Warrant Agent. The Company shall serve as warrant agent under this Warrant. Upon thirty (30) 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, 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 (upon exercise of this Warrant or otherwise) or as a stockholder of the Company, whether such liabilities are asserted by the Company or by creditors of the Company.

(b) Authorized Shares. (i) The Company covenants that during the period the Warrant is outstanding, it will reserve from its authorized and unissued Common Stock a sufficient number of shares to provide for the issuance of the Warrant Shares upon the exercise of any purchase rights under this Warrant. 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 applicable certificates for the Warrant Shares (or uncertificated Warrant Shares) upon the exercise of the purchase rights under this Warrant. 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 Principal Trading Market. The Company covenants that all Warrant Shares which may be issued upon the exercise of the purchase rights represented by this Warrant will, upon exercise of the purchase rights represented by this Warrant, be duly authorized, validly issued, fully paid and nonassessable and free from all taxes, liens and charges created by the Company in respect of the issue thereof (other than taxes in respect of any transfer occurring contemporaneously with such issue).

(ii) Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including, without limitation, amend its certificate of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such 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. This Warrant may be amended only in writing signed by the Company and the Holder, or their successors and assigns.

(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 (OTHER THAN SECTIONS 5-1401 AND 5-1402 OF THE GENERAL OBLIGATIONS LAW). 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 PERSON 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 shall be a commercially reasonable substitute therefor, and upon so agreeing, shall incorporate such substitute provision in this Warrant.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

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

**GEMPHIRE THERAPEUTICS INC.**

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

SCHEDULE 1

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 Gemphire Therapeutics Inc., a Delaware 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

(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.

(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) 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)

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SCHEDULE 2  
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 Gemphire Therapeutics Inc. (the "Company") to which the within Warrant relates and appoints \_\_\_\_\_ as 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(a)(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:  
\_\_\_\_\_  
\_\_\_\_\_

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## SECURITIES PURCHASE AGREEMENT

This Securities Purchase Agreement (this “*Agreement*”) is dated as of March 10, 2017 by and among Gemphire Therapeutics Inc., a Delaware corporation (the “*Company*”), and each purchaser listed on Schedule A attached 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 of the Company, par value \$0.001 per share (the “*Common Stock*”), set forth below such Purchaser’s name on the signature page of this Agreement (which aggregate amount for all Purchasers together shall be 1,324,256 shares of Common Stock and shall be collectively referred to herein as the “*Shares*”), and (ii) warrants, in substantially the form attached hereto as Exhibit I (the “*Warrants*”) to acquire up to that number of additional shares of Common Stock equal to seventy-five percent (75%) of the number of Shares purchased by such Purchaser (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 Warrants and the Warrant Shares collectively are referred to herein as the “*Securities*”.

D. The Company has engaged Piper Jaffray & Co. as its sole lead placement agent and Laidlaw & Company (UK) Ltd. and LifeSci Capital LLC as its co-placement agents (collectively, the “*Placement Agents*”) for the offering of the Shares and the 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 A (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 agrees as follows:

ARTICLE I.  
DEFINITIONS

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:

“*Acquiring Person*” has the meaning set forth in Section 4.5.

“*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 in writing against the Company, or any of its 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.

“*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.

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

“*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.

“*Buy-In*” has the meaning set forth in Section 4.1(f).

“*Buy-In Price*” has the meaning set forth in Section 4.1(f).

“*Closing*” means the closing of the purchase and sale of the Shares and the Warrants pursuant to this Agreement.

“*Closing Bid Price*” means, for any security as of any date, (a) the last reported closing bid price per share of Common Stock 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 (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

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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. 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.

“*Commission*” has the meaning set forth in the Recitals.

“*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 into.

“*Common Stock Equivalents*” means any securities of the Company that 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*” has the meaning set forth in the Preamble.

“*Company Counsel*” means Honigman Miller Schwartz and Cohn LLP, with offices located at 350 East Michigan Avenue, Suite 300, Kalamazoo, Michigan 49007.

“*Company Deliverables*” has the meaning set forth in Section 2.2(a).

“*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 executive officers of the Company having responsibility for the matter or matters that are the subject of the statement.

“*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.

“*Deadline Date*” has the meaning set forth in Section 4.1(f).

“*Disclosure Materials*” has the meaning set forth in Section 3.1(h).

“*Disclosure Schedules*” has the meaning set forth in Section 3.1.

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“*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.

“*Environmental Laws*” has the meaning set forth in Section 3.1(dd).

“*Evaluation Date*” has the meaning set forth in Section 3.1(t).

“*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.

“*Intellectual Property*” has the meaning set forth in Section 3.1(p).

“*Irrevocable Transfer Agent Instructions*” means, with respect to the Company, the Irrevocable Transfer Agent Instructions, in the form of Exhibit C, executed by the Company and delivered to and acknowledged in writing by the Transfer Agent.

“*Legend Removal Date*” has the meaning set forth in Section 4.1(c).

“*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 and the Subsidiaries, taken as a whole, 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. 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, (ii) effects resulting from or relating to the announcement or disclosure of the sale of the Securities or other transactions contemplated by this Agreement, or (iii) effects caused by any event, occurrence or condition resulting from or relating to the taking of any action in accordance with this Agreement.

“*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.

“*Material Permits*” has the meaning set forth in [Section 3.1\(n\)](#).

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

“*OFAC*” has the meaning set forth in [Section 3.1\(kk\)](#).

“*Outside Date*” means the thirtieth day following the date of this Agreement.

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“*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.

“*Placement Agents*” has the meaning set forth in the Recitals.

“*Press Release*” has the meaning set forth in [Section 4.5](#).

“*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 Global Market.

“*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 the price per Unit paid by each Purchaser, severally and not jointly, as set forth opposite such Purchaser’s name on [Schedule A](#) under the heading “Purchase Price,” with \$0.125 of each Unit attributable to the Warrant included therein to purchase one Warrant Share.

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

“*Purchaser Deliverables*” has the meaning set forth in [Section 2.2\(b\)](#).

“*Purchaser Party*” has the meaning set forth in [Section 4.9](#).

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

“*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).

“*Regulation D*” has the meaning set forth in the Recitals.

“*Required Approvals*” has the meaning set forth in [Section 3.1\(e\)](#).

“*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.

“*SEC Reports*” has the meaning set forth in [Section 3.1\(h\)](#).

“*Secretary’s Certificate*” has the meaning set forth in [Section 2.2\(a\)\(vi\)](#).

“*Securities Act*” has the meaning set forth in the Recitals.

“*Shares*” has the meaning set forth in the Recitals.

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“*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 Warrants purchased hereunder as indicated opposite such Purchaser’s name on [Schedule A](#) to this Agreement under the heading “Aggregate Purchase Price (Subscription Amount)” in United States dollars and in immediately available funds.

“*Subsidiary*” means any subsidiary of the Company and shall, where applicable, include any subsidiary of the Company formed or acquired after the date hereof.

“*Trading Affiliate*” has the meaning set forth in [Section 3.2\(h\)](#).

“*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 OTC Bulletin Board), or (ii) if the Common Stock is not listed on a Trading Market (other than the OTC Bulletin Board), a day on which the Common Stock is traded in the over-the-counter market, as reported by the OTC Bulletin Board, 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 Alternext (formerly the American Stock Exchange), 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.

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

“*Transfer Agent*” means Computershare, Inc., the current transfer agent of the Company, with a mailing address of 250 Royal Street, Canton, Massachusetts 02021, or any successor transfer agent for the Company.

A “*Unit*” consists of one share of Common Stock and a Warrant to purchase 75% of a share of Common Stock.

“*Warrants*” has the meaning set forth in the Recitals.

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

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## ARTICLE II. PURCHASE AND SALE

### 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 as indicated below such Purchaser’s name on Schedule A, which Unit results from dividing (i) the Subscription Amount for such Purchaser by (ii) the Purchase Price applicable to such Purchaser, rounded down. The Warrants shall have an exercise price equal to \$10.40 per Warrant Share, subject to adjustment as provided in such Warrants.

(b) Closing. The Closing of the purchase and sale of the Shares and the Warrants shall take place at the offices of Cooley LLP, 1114 Sixth Avenue, New York, New York 10036 on the Closing Date or at such other locations 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 as to such Purchaser(s), 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 non-interest bearing escrow account established by the Company and Piper Jaffray & Co. with American Stock Transfer & Trust Company, LLC (the “*Escrow Agent*”) as set forth on Exhibit F hereto (the aggregate amount received and held in escrow by the Escrow Agent is referred to herein as the “*Escrow Amount*”). On the Closing Date, (a) the Company and Piper Jaffray & Co. shall instruct the Escrow Agent to deliver, in immediately available funds, the Escrow Amount constituting the aggregate Purchase Price as follows: (1) to the Placement Agents, the fees and reimbursable expenses payable to the Placement Agents (which fees and expenses shall be set forth in such instructions), and (2) the balance of the aggregate Purchase Price to the Company, (b) the Company shall irrevocably instruct the Transfer Agent to enter in the name of each Purchaser a book entry position, 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 Schedule A under the heading “Number of Shares to be Acquired”, within three (3) Trading Days after the Closing, and (c) the Company shall deliver 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 Warrants such Purchaser is purchasing as is set forth on Schedule A under the heading “Underlying Shares Subject to Warrant,” within three (3) Trading Days after the Closing.

### 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) this Agreement, duly executed by the Company;

(ii) evidence of a book entry position, free and clear of all restrictive and other legends (except as provided in Section 4.1(b) hereof), evidencing the Shares subscribed for by

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such Purchaser hereunder, registered in the name of such Purchaser as set forth on the Securities Issuance Questionnaire included as Exhibit B-2 hereto;

(iii) facsimile copies of one or more Warrants, executed by the Company and registered in the name of such Purchaser as set forth on the Securities Issuance Questionnaire included as Exhibit B-2 hereto, pursuant to which such Purchaser shall have the right to acquire such number of Warrant Shares equal to seventy-five percent (75%) of the number of Shares issuable to such Purchaser pursuant to Section 2.2(a)(ii), rounded up to the nearest whole share, on the terms set forth therein, with the original Warrants delivered within three (3) Trading Days of Closing;

- (iv) a legal opinion of Company Counsel, dated as of the Closing Date, in form and substance satisfactory to the Purchasers, executed by such counsel and addressed to the Purchasers and expressly stating that such opinion may be relied upon by the Placement Agents;
- (v) the Registration Rights Agreement, duly executed by the Company;
- (vi) duly executed Irrevocable Transfer Agent Instructions acknowledged in writing by the Transfer Agent in the form attached hereto as Exhibit C;
- (vii) a certificate of the Secretary of the Company (the “*Secretary’s Certificate*”), dated as of the Closing Date, (a) certifying the resolutions adopted by the Board of Directors of the Company or a duly authorized committee thereof approving the transactions contemplated by this Agreement and the other Transaction Documents and the issuance of the Securities, (b) certifying the current versions of the certificate of incorporation, as amended, and by-laws, as amended, of the Company, and (c) certifying as to the signatures and authority of persons signing the Transaction Documents and related documents on behalf of the Company, in the form attached hereto as Exhibit D;
- (viii) a certificate signed by its Chief Executive Officer or its Chief Financial Officer, dated as of the Closing Date, certifying to the fulfillment of the conditions specified in Sections 5.1(a) and (b) in the form attached hereto as Exhibit E;
- (ix) a Lock-Up Agreement, substantially in the form of Exhibit G hereto (the “*Lock-Up Agreement*”) executed by each person listed on Exhibit H hereto, and each such Lock-Up Agreement shall be in full force and effect on the Closing Date;
- (x) a certificate evidencing the formation and good standing of the Company issued by the Secretary of State (or comparable office) of Delaware, as of a date within three (3) Business Days of the Closing Date;
- (xi) a certificate evidencing the Company’s qualification as a foreign corporation and good standing issued by the Secretary of State (or comparable office) of Michigan, as of a date within three (3) Business Days of the Closing Date; and
- (xii) a certified copy of the certificate of incorporation, as amended, as certified by the Secretary of State of Delaware, as of a date within three (3) Business Days of the Closing Date.

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- (b) On or prior to the Closing, each Purchaser shall deliver or cause to be delivered the following (the “*Purchaser Deliverables*”):
  - (i) to the Company, this Agreement, duly executed by such Purchaser;
  - (ii) to the Escrow Agent, its Subscription Amount, in United States dollars and in immediately available funds, in the amount indicated on Schedule A hereto under the heading “Aggregate Purchase Price (Subscription Amount)” by wire transfer to the Escrow Account, as set forth on Exhibit F attached hereto;
  - (iii) to the Company, the Registration Rights Agreement, duly executed by such Purchaser;
  - (iv) to the Company, a fully completed and duly executed Selling Stockholder Questionnaire in the form attached as Annex B to the Registration Rights Agreement; and
  - (v) to the Company, a fully completed and duly executed Accredited Investor Questionnaire, satisfactory to the Company, and Securities Issuance Questionnaire in the forms attached hereto as Exhibits B-1 and B-2, respectively.

### ARTICLE III. REPRESENTATIONS AND WARRANTIES

3.1 Representations and Warranties of the Company. Except (i) as 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 to the Placement Agents:

- (a) Subsidiaries. The Company has no direct or indirect Subsidiaries.
- (b) Organization and Qualification. The Company is an entity duly incorporated or otherwise organized, validly existing and in good standing under the laws of the State of Delaware, 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. The Company is not in violation or default of any of the provisions of its certificate of incorporation or bylaws. The Company 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 writing in any such jurisdiction revoking, limiting or curtailing or seeking to revoke, limit or curtail such power and authority or qualification.

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- (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 does, 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 the 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 certificate of incorporation or bylaws, or otherwise result in a violation of the organizational documents of the Company, (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 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 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.

(e) Filings, Consents and Approvals. The Company is not required to obtain any consent, waiver, 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 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)

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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 the 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 4.5 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 nonassessable 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. 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).

(g) Capitalization. The capitalization of the Company is as described in its most recently filed SEC Report on Form 10-Q, except for issuances to reflect stock option exercises after September 30, 2016 that do not, individually or in the aggregate, have a material effect on its issued and outstanding capital stock. The Company has not issued any capital stock since the date of the balance sheet included in its most recently filed SEC Report other than to reflect stock option exercises that do not, individually or in the aggregate, have a material effect on its issued and outstanding capital stock. 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 in the SEC Reports, in the first sentence of this Section 3.1(g) or a result of the purchase and sale of the Securities, 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 is or may become bound to issue additional shares of Common Stock or Common Stock Equivalents. The issuance and sale of the Securities will not obligate the Company to issue shares of Common Stock or other securities to any Person (other than the Purchasers or their

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permitted assignees) 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 nonassessable, have been issued in compliance 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. No further approval or authorization of any stockholder, the Board of Directors or others is required for the issuance and sale of the Securities. 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 two years preceding the date hereof (or such shorter period as the Company was required by law or regulation to file such material) (the foregoing materials, together with the registration statement on Form S-1, as amended (File No. 333-210815), filed by the Company with the Commission and related prospectus filed by the Company with the Commission on August 8, 2016 under Rule 424(b) of the Act, 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 (including, for this purpose only, any failure to qualify to register the Shares and the Warrant Shares for resale on the applicable Commission form required by the Registration Rights Agreement or which would prevent any Purchaser from using Rule 144 to resell any Securities). As of their respective filing dates, or to the extent corrected by a subsequent amendment or restatement, 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. The Company has never been an issuer subject to Rule 144(i) under the Securities Act. Each of the Material Contracts to which the Company is a party or to which the property or assets of the Company is subject has been filed or incorporated by reference as an exhibit to the SEC Reports.

(i) Financial Statements. The 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 or restatement). Such 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 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 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.

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(j) Material Changes. Since the date of the latest audited financial statements included within the SEC Reports, except as specifically disclosed in a subsequent SEC Report filed prior to the date hereof, (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 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 for the issuance of the Securities contemplated by this Agreement, no event, liability or development has occurred or exists with respect to the Company or its 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 (1) 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) would, if there were an unfavorable decision, individually or in the aggregate, have or reasonably be expected to result in a Material Adverse Effect. Neither the Company 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. 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 reasonably be expected to result in a Material Adverse Effect. None of the Company’s employees is a member of a union that relates to such employee’s relationship with the Company, and the Company is not a party to a collective bargaining agreement, and the Company believes that its relationship with its employees is good. No executive officer of the Company (as defined in Rule 501(f) of the Securities Act) has notified the Company that such officer intends to leave the Company or otherwise terminate such officer’s employment with the Company, and the Company has not notified any such officer that he or she has been or will be terminated. To the Company’s Knowledge, no executive officer, to the Company’s Knowledge, 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 restrictive covenant in favor of a third party and, to the Company’s Knowledge, the continued employment of each such executive officer

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does not subject the Company to any liability with respect to any of the foregoing matters. 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, have or reasonably be expected to result in a Material Adverse Effect.

(m) Compliance. The Company (i) is not 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 not in violation of any order of any court, arbitrator or governmental body having jurisdiction over the Company or its properties or assets, or (iii) is not 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, 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 possesses all certificates, authorizations and permits issued by the appropriate federal, state, local or foreign regulatory authorities necessary to conduct its respective business as currently conducted and as described in the SEC Reports, except where the failure to possess such permits, individually or in the aggregate, has not and would not have or reasonably be expected to result in a Material Adverse Effect (“*Material Permits*”), and the Company has not received any notice of Proceedings relating to the revocation or modification of any such Material Permits.

(o) Title to Assets. The Company has good and marketable title in fee simple to all real property owned by them as described in the SEC Reports. The Company has good and marketable title to all tangible personal property owned by them that is material to the business of the Company, taken as whole, 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 as described in the SEC Reports are held by them 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.

(p) Intellectual Property. The Company owns, or has obtained valid and enforceable licenses for, the inventions, patent applications, patents, trademarks, trade names, service names, copyrights, trade secrets and other intellectual property described in the SEC Reports as being owned or licensed by them and that are necessary for the conduct of its business as currently conducted or as currently proposed to be conducted (collectively, “*Intellectual Property*”). To the Company’s Knowledge, except as described in the SEC Reports: (i) there are no third parties who have rights to any Intellectual Property, except for customary reversionary rights of third-party licensors with respect to Intellectual Property that is disclosed in the SEC Reports as licensed to the Company; and (ii) there is no infringement by third parties of any Intellectual Property. There is no pending or, to the Company’s Knowledge, threatened action, suit, proceeding or claim by others: (A) challenging the Company’s rights in or to any Intellectual Property, and the Company is unaware of any facts which would form a reasonable basis for any such action, suit,

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proceeding or claim; (B) challenging the validity, enforceability or scope of any Intellectual Property, and the Company is unaware of any facts which would form a reasonable basis for any such action, suit, proceeding or claim; or (C) asserting that the Company infringes or otherwise violates, or would, upon the commercialization of any product or service described in the SEC Reports as under development, infringe or violate, any patent, trademark, trade name, service name, copyright, trade secret or other proprietary rights of others, and the Company is unaware of any facts which would form a reasonable basis for any such action, suit, proceeding or claim. The Company has complied with the terms of each agreement pursuant to which Intellectual Property has been licensed to the Company except where the failure to so comply would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect, and all such agreements are in full force and effect. The product candidates described in the SEC Reports as under development by the Company fall within the scope of the claims of one or more patents or patent applications owned by, or exclusively licensed to, the Company.

(q) Insurance. The Company 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, including, but not limited to, directors and officers insurance coverage. The Company has not received any written notice of cancellation of any such insurance, nor, to the Company’s Knowledge, will it be unable to renew their respective 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 significant increase in cost.

(r) Transactions With Affiliates and Employees. Except as set forth in the SEC Reports, none of the 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 in the SEC Reports 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 as of the Closing Date. 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

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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 has materially affected, or is reasonably likely to materially affect, the Company’s internal control over financial reporting.

(u) Certain Fees. Except as set forth on Schedule 3.1(u), no person or entity 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 Agents with respect to the offer and sale of the Securities (which placement agent fees are being paid by the Company). The Purchasers shall have no obligation with respect to any fees or with respect to any claims 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 immediately after receipt of payment for the Securities, will not be 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 set forth in the SEC Reports, no Person has any right to cause the Company to effect the registration under the Securities Act of any securities of the Company other than those securities which are currently registered on an effective registration statement on file with the Commission.

(y) Listing and Maintenance Requirements. The Company's Common Stock is registered pursuant to Section 12(b) 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 twelve (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

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Trading Market. The Company is in compliance with all listing and maintenance requirements of the Principal Trading Market on the date hereof.

(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) Disclosure. The Company confirms that it has not provided, and to the Company's Knowledge, none of its officers or directors nor any other Person acting on its or their behalf has provided, and it has not authorized the Placement Agents to provide, any Purchaser or its respective agents or counsel with any information that it believes constitutes material, non-public information except (i) insofar as the existence, provisions and terms of the Transaction Documents and the proposed transactions hereunder may constitute such information and (ii) except as set forth on Schedule 3.1(aa), all of which information in clauses (i) and (ii) will be disclosed by the Company in the Press Release and/or Current Report on Form 8-K contemplated by Section 4.5 hereof. The Company understands and confirms that the Purchasers will rely on the foregoing representations in effecting transactions in securities of the Company.

(bb) No Integrated Offering. Assuming the accuracy of the Purchasers' representations and warranties set forth in Section 3.2, none of 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 (6) 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.

(cc) Tax Matters. The Company (i) has accurately and timely prepared and filed 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. There are no unpaid taxes in any material amount claimed to be due by the Company by the taxing authority of any jurisdiction.

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(dd) Environmental Matters. The Company (i) is not 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) does not own or operate any real property contaminated with any substance that is in violation of any Environmental Laws, (iii) is not liable for any off-site disposal or contamination pursuant to any Environmental Laws, or (iv) is not subject to any claim relating to any Environmental Laws, in each case, which violation, contamination, liability or claim, as applicable, 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 and an unconsolidated or other off balance sheet entity that is required to be disclosed by the Company in SEC Reports and is not so disclosed.

(gg) 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.

(hh) Regulation M Compliance. The Company has not, and to the Company's Knowledge, neither its directors or officers nor any person 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 securities of the Company 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 Agents in connection with the placement of the Securities.

(ii) PFIC. The Company is not nor does it intend to become a "passive foreign investment company" within the meaning of Section 1297 of the U.S. Internal Revenue Code of 1986, as amended.

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(jj) Foreign Corrupt Practices. Neither the Company, nor to the Company's Knowledge, any agent or other person acting on behalf of the Company, 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 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.

(kk) OFAC. Neither the Company nor, to the Company's Knowledge, any director, officer, agent, employee, Affiliate or Person acting on behalf of the Company 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 any country sanctioned by OFAC, including Cuba, Iran, Syria, Sudan and Myanmar (each, to the extent applicable and not subject to a waiver granted by OFAC), or for the purpose of financing the activities of any Person currently subject to any U.S. sanctions administered by OFAC.

(ll) Money Laundering Laws. The operations of the Company are, and have been conducted at all times, in compliance with applicable financial recordkeeping and reporting requirements, including those of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all applicable jurisdictions, the rules and regulations thereunder and any related or similar applicable rules, regulations or guidelines, issued, administered or enforced by any governmental agency (collectively, the "*Money Laundering Laws*") and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company with respect to the Money Laundering Laws is pending or, to the Company's Knowledge, threatened.

(mm) Clinical Data and Regulatory Compliance. The preclinical tests, clinical trials and other studies (collectively, "studies") that are described in, or the results of which are referred to in, the SEC Reports were conducted in all material respects in accordance with the protocols, procedures and controls designed and approved for such studies and with standard medical and scientific research procedures; each description of the results of such studies is accurate and complete in all material respects and fairly presents the data derived from such studies, and the Company has no knowledge of any other studies the results of which are inconsistent with, or otherwise call into question, the results described or referred to in the SEC Reports; the Company has made all such filings and obtained all such approvals as may be required by the Food and Drug Administration of the U.S. Department of Health and Human Services or any committee thereof or from any other U.S. or foreign government or drug regulatory agency, or health care facility Institutional Review Board (collectively, the "*Regulatory Agencies*") except where such failure or non-compliance would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Event; the Company has not received any notice of, or correspondence from, any Regulatory Agency requiring the termination, suspension or modification of any clinical trials that are described or referred to in the Registration Statement, the Time of Sale Prospectus or the

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Prospectus; and the Company has operated and currently in compliance in all material respects with all applicable rules, regulations and policies of the Regulatory Agencies.

(nn) Compliance with Health Care Laws. The Company is, and at all times has been, in compliance with all Health Care Laws, except for any noncompliance that would not reasonably be expected to have a Material Adverse Effect. For purposes of this Agreement, "Health Care Laws" means: (i) the Federal Food, Drug, and Cosmetic Act and the regulations promulgated thereunder; (ii) all applicable federal, state, local and all applicable foreign health care related fraud and abuse laws, including, without limitation, the U.S. Anti-Kickback Statute (42 U.S.C. Section 1320a-7b(b)), the Anti-Inducement Law (42 U.S.C. § 1320a-7a(a)(5)), the U.S. Civil False Claims Act (31 U.S.C. Section 3729 et seq.), all applicable federal, state, local and all foreign criminal laws relating to health care fraud and abuse, including but not limited to 18 U.S.C. Sections 286 and 287, and the health care fraud criminal provisions under the U.S. Health Insurance Portability and Accountability Act of 1996 ("HIPAA") (42 U.S.C. Section 1320d et seq.), the exclusion laws, the statutes, regulations and directives of applicable government funded or sponsored healthcare programs, and the regulations promulgated pursuant to such statutes; (iii) the Standards for Privacy of Individually Identifiable Health Information (the "Privacy Rule"), the Security Standards, and the Standards for Electronic Transactions and Code Sets promulgated under HIPAA, the Health Information Technology for Economic and Clinical Health Act (42 U.S.C. Section 17921 et seq.), and the regulations promulgated thereunder and any state or non-U.S. counterpart thereof or other law or regulation the purpose of which is to protect the privacy of individuals or prescribers; (iv) the Patient Protection and Affordable Care Act of 2010, as amended by the Health Care and Education Affordability Reconciliation Act of 2010, the regulations promulgated thereunder; (v) the U.S. Controlled Substances Act (21 U.S.C. Section 801

et seq.); (vi) quality, safety and accreditation requirements under applicable federal, state, local or foreign laws or regulatory bodies; and (vii) all other local, state, federal, national, supranational and foreign laws, relating to the regulation of the Company. The Company has not received written notice of any claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from any court or arbitrator or governmental or regulatory authority or third party alleging that any product operation or activity is in material violation of any Health Care Laws nor, to the Company's knowledge, is any such claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action threatened. Except as would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Event, the Company has filed, maintained or submitted all material reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by any Health Care Laws, and all such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were complete and accurate on the date filed in all material respects (or were corrected or supplemented by a subsequent submission). The Company is not a party to any corporate integrity agreements, monitoring agreements, consent decrees, settlement orders, or similar agreements with or imposed by any governmental or regulatory authority. Additionally, neither the Company nor any of its employees, officers or directors has been excluded, suspended or debarred from participation in any U.S. federal health care program or human clinical research or, to the knowledge of the Company, is subject to a governmental inquiry, investigation, proceeding, or other similar action that could reasonably be expected to result in debarment, suspension, or exclusion.

(oo) ERISA Compliance. The Company and any "employee benefit plan" (as defined under the Employee Retirement Income Security Act of 1974, as amended, and the

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regulations and published interpretations thereunder (collectively, "ERISA")) established or maintained by the Company or its "ERISA Affiliates" (as defined below) are in compliance in all material respects with ERISA. "ERISA Affiliate" means, with respect to the Company, any member of any group of organizations described in Sections 414(b), (c), (m) or (o) of the Internal Revenue Code of 1986, as amended, and the regulations and published interpretations thereunder (the "Code") of which the Company is a member. No "reportable event" (as defined under ERISA) has occurred or is reasonably expected to occur with respect to any "employee benefit plan" established or maintained by the Company or its ERISA Affiliates. No "employee benefit plan" established or maintained by the Company or any of its ERISA Affiliates, if such "employee benefit plan" were terminated, would have any "amount of unfunded benefit liabilities" (as defined under ERISA). Neither the Company nor any of its ERISA Affiliates has incurred or reasonably expects to incur any liability under (i) Title IV of ERISA with respect to termination of, or withdrawal from, any "employee benefit plan" or (ii) Sections 412, 4971, 4975 or 4980B of the Code. Each employee benefit plan established or maintained by the Company or any of its ERISA Affiliates that is intended to be qualified under Section 401(a) of the Code is so qualified and nothing has occurred, whether by action or failure to act, which would cause the loss of such qualification.

(pp) Bad Actor Disqualification. None of the Company, any predecessor or affiliated issuer of the Company nor, to the Company's Knowledge, any director or executive officer of the Company or any promoter connected with the Company in any capacity, qualifies as a "bad actor" within the meaning of Rule 506(d) under the Securities Act.

(qq) 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.

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 Agents as follows:

(a) Organization; Authority. Except as to any Purchaser who is a natural person, 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 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, and 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 other 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

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the transactions contemplated hereby and thereby will not (i) result in a violation of the organizational documents of such Purchaser (except as to any Purchaser who is a natural person), (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 the 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 or entity; 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 Securities, it was, 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 (i) the opportunity to ask such

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questions as it has deemed necessary of, and to receive answers from, representatives of the Company concerning the terms and conditions of the offering of the Securities and the merits and risks of investing in the Securities; (ii) access to information about the Company and its financial condition, results of operations, business, properties, management and prospects sufficient to enable it to evaluate its investment; and (iii) the opportunity to obtain such additional information that the Company possesses or can acquire without unreasonable effort or expense that is necessary to make an informed investment decision with respect to the investment. 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 Disclosure Materials and the Company’s representations and warranties contained in the Transaction Documents. Such Purchaser has sought such accounting, legal and tax advice as it has considered necessary to make an informed decision with respect to its acquisition of the Securities.

(h) Certain Trading Activities. Other than with respect to the transactions contemplated herein, since the time that such Purchaser was first contacted by the Company, the Placement Agents or any other Person regarding the transactions contemplated hereby, neither the Purchaser nor any Affiliate of such Purchaser which (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 (collectively, “*Trading Affiliates*”) has directly or indirectly, nor has any Person acting on behalf of or pursuant to any understanding with such Purchaser or Trading Affiliate, effected or agreed to effect any purchases or sales of the securities of the Company (including, without limitation, any Short Sales involving the Company’s securities). Notwithstanding the foregoing, in the case of a Purchaser and/or Trading Affiliate that is, individually or collectively, a multi-managed investment bank or vehicle whereby separate portfolio managers manage separate portions of such Purchaser’s or Trading Affiliate’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 or Trading Affiliate’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. Other than to other Persons party to this Agreement, such Purchaser has maintained the confidentiality of all disclosures made to it in connection with this transaction (including the existence and terms of this transaction). Notwithstanding the foregoing, for avoidance of doubt, nothing contained herein shall constitute a representation or warranty, or preclude any actions, with respect to the identification of the availability of, or securing of, available shares to borrow in order to effect short sales or similar transactions in the future.

(i) 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 the Purchaser.

(j) 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

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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 Agents have acted solely as the agent of the Company in this placement of the Securities and such Purchaser has not relied on the business or legal advice of the Placement Agents or any of their 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.

(k) Reliance on Exemptions. Such Purchaser understands that the Securities 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.

(l) 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.

(m) Regulation M. Such Purchaser is aware that the anti-manipulation rules of Regulation M under the Exchange Act may apply to sales of Common Stock and other activities with respect to the Common Stock by the Purchasers.

(n) Beneficial Ownership. The purchase by such Purchaser of the Shares and Warrants issuable to it at the Closing will not result in such Purchaser (individually or together with any other Person with whom such Purchaser has identified, or will have identified, itself as part of a “group” in a public filing made with the Commission involving the Company’s securities) acquiring, or obtaining the right to acquire, in excess of 19.999% of the outstanding shares of Common Stock or the voting power of the Company on a post-transaction basis that assumes that such Closing shall have occurred. Such Purchaser does not presently intend to, alone or together with others, make a public filing with the Commission to disclose that it has (or that it together with such other Persons have) acquired, or obtained the right to acquire, as a result of such Closing (when added to any other securities of the Company that it or they then own or have the right to acquire), in excess of 19.999% of the outstanding shares of Common Stock or the voting power of the Company on a post transaction basis that assumes that each Closing shall have occurred.

(o) 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.

(p) Bad Actor Disqualification. If such Purchaser is an officer of the Company or beneficial owner of 20% or more of the Company’s outstanding voting equity securities, such Purchaser does not qualify as a “bad actor” within the meaning of Rule 506(d) under the Securities Act.

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(q) 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 such Accredited Investor Questionnaire and the Selling Stockholder Questionnaire delivered to the Company by such Purchaser will be complete and accurate as of the Closing Date and the Effective Date; provided, that such Purchaser shall be entitled to update such information by providing written notice thereof to the Company.

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

4.1 Transfer Restrictions.

(a) Compliance with Laws. Notwithstanding any other provision of this Article IV, each Purchaser 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 the 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. Book entry notations 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 [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

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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. NOTWITHSTANDING THE FOREGOING, THE SECURITIES MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT OR OTHER LOAN OR FINANCING ARRANGEMENT SECURED BY THE SECURITIES.

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 the Purchaser transferee of the pledge. No notice shall be required of such pledge, but Purchaser’s transferee shall promptly notify the Company of any such subsequent transfer or foreclosure. 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 uncertificated security) without such legend or any other legend to the holder of the applicable Securities upon which it is stamped if (i) such Securities are registered for resale under the Securities Act (provided that, if the Purchaser is selling pursuant to the effective registration statement registering the Securities for resale, the Purchaser agrees to only sell such Securities during such time that such registration statement is effective and not withdrawn or suspended, and only as permitted by such 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 cause Company Counsel to issue to the Transfer

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Agent the legal opinion referred to in the Irrevocable Transfer Agent Instructions. Any fees (with respect to the Transfer Agent, Company Counsel or otherwise) associated with the issuance of such opinion or 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 (in which case a Purchaser shall also be required to provide reasonable assurances in the form of seller and, if applicable, broker representation letters) for certain Securities, the Company will no later than three (3) Trading Days following the delivery by a Purchaser to the Company (with notice to the Company) of (i) a legended certificate representing the 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 book entry position representing the Shares or Warrant Shares or (ii) an Exercise Notice in the manner stated in any Warrants to effect the exercise of such Warrants in accordance with their terms, and an opinion of counsel to the extent required by Section 4.1(a) (such third (3<sup>rd</sup>) Trading Day, the “*Legend Removal Date*”), deliver or cause to be delivered to such Purchaser a certificate or book entry position representing such Securities 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). Certificates for Shares and Warrant Shares subject to legend removal hereunder may be transmitted by the Transfer Agent to the Purchasers by crediting the account of the Purchaser’s prime broker with the Depository Trust Company as directed by such Purchaser.

(d) Irrevocable Transfer Agent Instructions. The Company shall issue irrevocable instructions to its transfer agent, and any subsequent transfer agent, in the form of Exhibit C 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 its 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 hereunder 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. While the Registration Statement remains effective, each Purchaser hereunder may sell the Shares and Warrants 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 and 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, the Purchaser will refrain from selling such Shares

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and/or 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 and/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 hereunder 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 unlegended shares of Common Stock within three (3) Trading Days of 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 (3) Trading Day period, such Purchaser purchases (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 (3) Trading Days after such Purchaser’s request and in such Purchaser’s sole discretion, either (i) pay cash to the 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 Company’s obligation to deliver such shares of Common Stock shall terminate, or (ii) promptly honor its obligation to deliver to such Purchaser 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, times (b) the Closing Bid Price on the Deadline Date.

4.2 Reservation of Common Stock. The Company shall take all action necessary to at all times 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).

4.3 Furnishing of Information. In order to enable the Purchasers to sell the Securities under Rule 144, for a period of twelve (12) months from the Closing, 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. During such twelve (12) month 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.

4.4 Integration. The Company shall not, and shall use its 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.

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4.5 Securities Laws Disclosure; Publicity. By 9:00 A.M., New York City time, on the Trading Day immediately following the date hereof, the Company shall (a) issue a press release (the “Press Release”) reasonably acceptable to the Placement Agents disclosing all material terms of the transactions contemplated hereby, and (b) furnish to and/or file with the Commission a Current Report on Form 8-K 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)) and disclosing any information on Schedule 3.1(aa). 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 laws 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 the confidentiality and use of such information. Each Purchaser, severally and not jointly with the other Purchasers, covenants that until such time as the transactions contemplated by this Agreement are required to be publicly disclosed by the Company as described in this Section 4.5, 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).

4.6 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; provided, however, that no such Purchaser owns any equity in the Company prior to its purchase of the Securities hereunder.

4.7 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.

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4.8 Use of Proceeds. The Company shall use the net proceeds from the sale of the Securities hereunder to fund development costs of gemcabene, including its planned Phase 2 clinical trial of gemcabene in NASH patients, to fund manufacturing related activities for gemcabene and for general corporate purposes, and shall not use such proceeds for: (a) the satisfaction of any portion of the Company’s debt (other than payment of trade payables in the ordinary course of the Company’s business and prior practices), (b) the redemption of any Common Stock or Common Stock Equivalents or (c) the settlement of any litigation outstanding as of the date hereof.

4.9 Indemnification of Purchasers. Subject to the provisions of this Section 4.9, 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 Person 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 (b) any action instituted against a Purchaser in any capacity, or any of them or their respective Affiliates, by any stockholder of the Company who is not an Affiliate of such Purchaser, 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 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 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 action, proceeding or investigation in respect of which indemnity may be sought pursuant to this Section 4.9, 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; 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 written consent, which consent shall not be unreasonably withheld, delayed or conditioned, or to the extent fees and costs incurred pursuant to

this Section 4.9 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, 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 Party, unless such settlement includes an unconditional release of such Indemnified Person from all liability arising out of such proceeding.

4.10 Principal Trading Market Listing. 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 commercially reasonable 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.

4.11 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 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.

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 (3) Trading Days of the Closing Date.

4.13 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 4.5 or (ii) this Agreement is terminated in full pursuant to Section 6.18. 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 4.5, 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 4.5; 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, or (y) the date that such Purchaser no longer holds any Securities. For purposes of this Section 4.13, a "Net Short Sale" by any Purchaser shall mean a sale of Common Stock by such Purchaser that is marked as a short sale and that is made at a time when there is no equivalent offsetting long position in Common Stock 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 unlegended shares of Common Stock prior to the settlement date for such sale (assuming that such certificates or book entry positions meet the requirements set forth in Section 4.1(c) for the removal of legends), the provisions of this Section 4.13 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. Each Purchaser understands and acknowledges, severally and not jointly with any other Purchaser, that the Commission currently takes the position that covering a short position established prior to effectiveness of a resale registration statement with shares included in such registration statement would be a violation of Section 5 of the Securities Act, as set forth in Compliance and Disclosure Interpretation No. 239.10 with respect to the Securities Act Section 5, dated Nov. 26, 2008, compiled by the Commission's Division of Corporation Finance.

4.14 Subsequent Equity Sales. From the date hereof until the earlier of (i) one hundred eighty (180) days following the Closing Date or (ii) thirty (30) days after the Effective Date, the Company shall not issue shares of Common Stock or Common Stock Equivalents; provided, however, the thirty (30) day period set forth in this Section 4.14 shall be extended for the number of Trading Days during such period in which (a) trading in the Common Stock is suspended by any Trading Market, or (b) following the Effective Date, the Registration Statement is not effective or the prospectus included in the Registration Statement may not be used by the Purchasers for the resale of the Shares or the Warrant Shares. Notwithstanding the foregoing, in no event shall this Section 4.14 prohibit the Company from issuing (A) shares of Common Stock or Warrants hereunder, or Warrant Shares upon the exercise of the Warrants, or (B) shares of Common Stock or Common Stock Equivalents (i) upon the exercise of any options outstanding on the date hereof, (ii) to its employees, directors or consultants pursuant to any stock option or equity incentive or employee stock purchase plan in existence on the date hereof, or (iii) in connection with any joint venture, commercial or collaborative relationship or the acquisition or license by the Company of the securities, businesses, property or other assets of another person or entity, provided that (x) such securities issued pursuant to this clause (iii) shall not in the aggregate exceed 5% of the Company's outstanding shares of Common Stock on a fully diluted basis after giving effect to the issuance of the Shares and Warrants contemplated by this Agreement and (y) the recipients thereof provide to the Piper Jaffray & Co. a signed Lock-Up Agreement in the form attached as Exhibit G applicable to the then remaining portion of the Lock-Up Period (as defined therein).

ARTICLE V.  
CONDITIONS PRECEDENT TO CLOSING

5.1 Conditions Precedent to the Obligations of the Purchasers to Purchase Securities. The obligation of each Purchaser to acquire Shares and Warrant 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 (including all Required Approvals), all of which shall be and remain so long as necessary in full force and effect.
- (e) Adverse Changes. 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) Listing. The NASDAQ Global Market shall have approved the listing of additional shares application for the Shares and Warrant Shares.
- (g) 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.
- (h) Company Deliverables. The Company shall have delivered the Company Deliverables in accordance with Section 2.2(a).
- (i) Termination. This Agreement shall not have been terminated as to such Purchaser in accordance with Section 6.18 herein.

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 each Purchaser 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 such Purchaser 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, 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) Listing. The NASDAQ Global Market shall have approved the listing of additional shares application for the Shares and Warrant Shares.
- (g) Termination. This Agreement shall not have been terminated as to such Purchaser in accordance with Section 6.18 herein.

6.1 Fees and Expenses. The Company and the Purchasers shall each 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.

6.2 Entire Agreement. The Transaction Documents, together with the exhibits and schedules thereto, 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

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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.

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:                    Gemphire Therapeutics Inc.  
43334 Seven Mile Road, Suite 1000  
Northville, Michigan 48167  
Telephone No.: (612) 961-7875  
Facsimile No.: (734) 864-5765  
Attention: Jeffrey Mathiesen  
E-mail: jmathiesen@gemphire.com

With a copy to:                        Honigman Miller Schwartz and Cohn LLP  
350 East Michigan Avenue, Suite 300  
Kalamazoo, Michigan 49007-3800  
Telephone No.: (269) 337-7702  
Facsimile No.: (269) 337-7703  
Attention: Phillip D. Torrence  
E-mail: PTorrence@honigman.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.

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 of at least a majority in interest of the Securities still held by 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

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

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.

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 prior written consent of each Purchaser holding or having rights to acquire the Securities at the time of such consent. 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 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".

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 Agents are intended third party beneficiaries of Article III hereof and (ii) each Purchaser Party is an intended third party beneficiary of Section 4.9.

6.8 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 (except Sections 5-1401 and 5-1402 of the General Obligations Law). 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**

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**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.**

6.9 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.

6.10 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.

6.11 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.

6.12 Rescission and Withdrawal Right. Notwithstanding anything to the contrary contained in (and without limiting any similar provisions of) the Transaction Documents, whenever any Purchaser exercises a right, election, demand or option under a Transaction Document and the Company does not timely perform its related obligations within the periods therein provided, then such Purchaser may rescind or withdraw, in its sole discretion from time to time upon written notice to the Company, any relevant notice, demand or election in whole or in part without prejudice to its future actions and rights.

6.13 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.

6.14 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

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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.

6.15 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.

6.16 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.

6.17 Independent Nature of Purchasers' Obligations and Rights. The obligations of each Purchaser under any Transaction Document are several and not joint with the obligations of any other Purchaser, and no Purchaser shall be responsible in any way for the performance of the obligations of any other Purchaser under any Transaction Document. The decision of each Purchaser to purchase Securities pursuant to the Transaction Documents has been made by such Purchaser independently of any other Purchaser and independently of any information, materials, statements or opinions as to the business, affairs, operations, assets, properties, liabilities, results of operations, condition (financial or otherwise) or prospects of the Company that may have been made or given by any other Purchaser or by any agent or employee of any other Purchaser, and no Purchaser and any of its agents or employees shall have any liability to any other Purchaser (or any other Person) relating to or arising from any such information, materials, statement or opinions. Nothing contained herein or in any Transaction Document, and no action taken by any Purchaser pursuant thereto, shall be deemed to constitute the Purchasers as a partnership, an

association, a joint venture or any other kind of entity, or create a presumption that the Purchasers are in any way acting in concert or as a group with respect to such obligations or the transactions contemplated by the Transaction Documents. Each Purchaser acknowledges that no other Purchaser has acted as agent for such Purchaser in connection with making its investment hereunder and that no Purchaser will be acting as agent of such Purchaser in connection with monitoring its investment in the Securities or enforcing its rights under the Transaction Documents. Each Purchaser shall be entitled to independently protect and enforce its rights, including without limitation the rights arising out of this Agreement or out of the other Transaction Documents, and it shall not be necessary for any other Purchaser to be joined as an additional party in any proceeding for such purpose. Each Purchaser has been represented by its own separate legal counsel in its review and negotiation of the Transaction Documents. For reasons of administrative convenience only, Purchasers and their

respective counsels have chosen to communicate with the Company through Cooley LLP, counsel to the Placement Agents. Each Purchaser acknowledges that Cooley LLP has rendered legal advice to the Placement Agents and not to such Purchaser in connection with the transactions contemplated hereby, and that each such Purchaser has relied for such matters on the advice of its own respective counsel. The Company has elected to provide all Purchasers with the same terms and Transaction Documents for the convenience of the Company and not because it was required or requested to do so by any Purchaser.

6.18 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 6.18 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 6.18 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 6.18, the Company shall promptly notify all non-terminating Purchasers. Upon a termination in accordance with this Section 6.18, 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 therefrom.

6.19 Waiver of Conflicts. Each Purchaser acknowledges that Honigman Miller Schwartz and Cohn LLP, 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 Honigman Miller Schwartz and Cohn LLP inform the Purchasers hereunder of this representation and obtain their consent. Honigman Miller Schwartz and Cohn LLP 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, Honigman Miller Schwartz and Cohn LLP 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 Honigman Miller Schwartz and Cohn LLP's representation of the Company in the transactions contemplated by this Agreement.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

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.

GEMPHIRE THERAPEUTICS INC.

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

NAME OF PURCHASER: \_\_\_\_\_

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Aggregate Purchase Price (Subscription Amount): \$ \_\_\_\_\_

Number of Shares to be Acquired: \_\_\_\_\_

Tax ID No.: \_\_\_\_\_

Address for Notice: \_\_\_\_\_

Telephone No.:

Facsimile No.:

E-mail Address:

Attention:

Delivery Instructions:  
(if different than above)

c/o

Street:

City/State/Zip:

Attention:

Telephone No.:

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**EXHIBITS & SCHEDULE:**

- Schedule A: Schedule of Purchasers  
A: Form of Registration Rights Agreement  
B-1: Accredited Investor Questionnaire  
B-2: Securities Issuance Questionnaire  
C: Form of Irrevocable Transfer Agent Instructions  
D: Form of Secretary's Certificate  
E: Form of Officer's Certificate  
F: Wire Instructions  
G: Form of Lock-Up Agreement  
H: List of Directors and Executive Officers Executing Lock-Up Agreements

**DISCLOSURE SCHEDULES:**

- 3.1(u) Certain Fees  
3.1(aa) Disclosure

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**SCHEDULE A**  
**SCHEDULE OF PURCHASERS**

<b>(1) Purchaser</b>	<b>(2) Purchase Price (per Unit)</b>	<b>(3) Number of Shares to be Acquired</b>	<b>(4) Underlying Shares Subject to Warrant</b>	<b>(5) Aggregate Purchase Price (Subscription Amount)</b>	<b>(6) Jurisdiction of Organization (for entities)</b>
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**EXHIBIT A**

**FORM OF REGISTRATION RIGHTS AGREEMENT**

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**INSTRUCTION SHEET**

(to be read in conjunction with the entire Securities Purchase Agreement and Registration Rights Agreement)

- A. Complete the following items in the Securities Purchase Agreement and/or Registration Rights Agreement:

1. Provide the information regarding the Purchaser requested on the signature page. The Securities Purchase Agreement and the Registration Rights Agreement must be executed by an individual authorized to bind the Purchaser.
2. Exhibit B-1 — Accredited Investor Questionnaire:  
Provide the information requested by the Accredited Investor Questionnaire
3. Exhibit B-2 Securities Issuance Questionnaire:  
Provide the information requested by the Securities Issuance Questionnaire
4. Annex B to the Registration Rights Agreement — Selling Securityholder Notice and Questionnaire  
Provide the information requested by the Selling Securityholder Notice and Questionnaire
5. Return the signed Securities Purchase Agreement and Registration Rights Agreement to:

Chad Huber  
Piper Jaffray & Co.  
345 Park Avenue  
New York, NY 10154  
Tel: 212-284-9573  
Email: chad.e.huber@pjc.com

B. Instructions regarding the transfer of funds for the purchase of Shares and Warrants is set forth on Exhibit F to the Securities Purchase Agreement.

EXHIBIT B-1

ACCREDITED INVESTOR QUESTIONNAIRE

(ALL INFORMATION WILL BE TREATED CONFIDENTIALLY)

To: Gemphire Therapeutics Inc.

This Investor Questionnaire (“*Questionnaire*”) must be completed by each potential investor in connection with the offer and sale of the shares of the common stock, par value \$0.001 per share, and shares of common stock that may be issued upon exercise of certain warrants (collectively, the “*Securities*”), of Gemphire Therapeutics Inc., a Delaware corporation (the “*Corporation*”). The Securities are being offered and sold by the Corporation without registration under the Securities Act of 1933, as amended (the “*Act*”), and the securities laws of certain states, in reliance on the exemptions contained in Section 4(a)(2) of the Act and on Regulation D promulgated thereunder and in reliance on similar exemptions under applicable state laws. The Corporation must determine that a potential investor meets certain suitability requirements before offering or selling Securities to such investor. The purpose of this Questionnaire is to assure the Corporation that each investor will meet the applicable suitability requirements. The information supplied by you will be used in determining whether you meet such criteria, and reliance upon the private offering exemptions from registration is based in part on the information herein supplied.

This Questionnaire does not constitute an offer to sell or a solicitation of an offer to buy any security. Your answers will be kept strictly confidential. However, by signing this Questionnaire, you will be authorizing the Corporation to provide a completed copy of this Questionnaire to such parties as the Corporation deems appropriate in order to ensure that the offer and sale of the Securities will not result in a violation of the Act or the securities laws of any state and that you otherwise satisfy the suitability standards applicable to purchasers of the Securities. All potential investors must answer all applicable questions and complete, date and sign this Questionnaire. Please print or type your responses and attach additional sheets of paper if necessary to complete your answers to any item.

PART A. BACKGROUND INFORMATION

Name of Beneficial Owner of the Securities: \_\_\_\_\_

Business Address: \_\_\_\_\_  
(Number and Street)

\_\_\_\_\_  
(City) (State) (Zip Code)

Telephone Number: ( ) \_\_\_\_\_

*If a corporation, partnership, limited liability company, trust or other entity:*

Type of entity:

State of formation:

Approximate Date of formation:

Were you formed for the purpose of investing in the securities being offered?

Yes o No o

If an individual:

Residence Address:

\_\_\_\_\_  
(Number and Street)

\_\_\_\_\_  
(City)

\_\_\_\_\_  
(State)

\_\_\_\_\_  
(Zip  
Code)

Telephone Number: ( )

Age:

Citizenship:

Where  
registered  
to vote:

Set forth in the space provided below the state(s), if any, in the United States in which you maintained your residence during the past two years and the dates during which you resided in each state:

Are you a director or executive officer of the Corporation?

Yes o No o

Social Security or Taxpayer Identification No.

**PART B. ACCREDITED INVESTOR QUESTIONNAIRE**

In order for the Company to offer and sell the Securities in conformance with state and federal securities laws, the following information must be obtained regarding your investor status. Please initial each category applicable to you as a Purchaser of Securities of the Company.

- (1) A bank as defined in Section 3(a)(2) of the Securities Act, or any savings and loan association or other institution as defined in Section 3(a)(5)(A) of the Securities Act whether acting in its individual or fiduciary capacity;
  - (2) A broker or dealer registered pursuant to Section 15 of the Securities Exchange Act of 1934;
  - (3) An insurance company as defined in Section 2(13) of the Securities Act;
  - (4) An investment company registered under the Investment Company Act of 1940 or a business development company as defined in Section 2(a)(48) of that Act;
- 
- (5) A Small Business Investment Company licensed by the U.S. Small Business Administration under Section 301(c) or (d) of the Small Business Investment Act of 1958;
  - (6) A plan established and maintained by a state, its political subdivisions, or any agency or instrumentality of a state or its political subdivisions, for the benefit of its employees, if such plan has total assets in excess of \$5,000,000;
  - (7) An employee benefit plan within the meaning of the Employee Retirement Income Security Act of 1974, if the investment decision is made by a plan fiduciary, as defined in Section 3(21) of such act, which is either a bank, savings and loan association, insurance company, or registered investment adviser, or if the employee benefit plan has total assets in excess of \$5,000,000 or, if a self-directed plan, with investment decisions made solely by persons that are accredited investors;
  - (8) A private business development company as defined in Section 202(a)(22) of the Investment Advisers Act of 1940;
  - (9) An organization described in Section 501(c)(3) of the Internal Revenue Code, a corporation, Massachusetts or similar business trust, or partnership, not formed for the specific purpose of acquiring the Securities, with total assets in excess of \$5,000,000;
  - (10) A trust, with total assets in excess of \$5,000,000, not formed for the specific purpose of acquiring the Securities, whose purchase is directed by a sophisticated person who has such knowledge and experience in financial and business matters that such person is capable of evaluating the merits and risks of investing in the Company;
  - (11) A natural person whose individual net worth, or joint net worth with that person's spouse, at the time of his purchase exceeds \$1,000,000;
  - (12) A natural person who had an individual income in excess of \$200,000 in each of the two most recent years, or joint income with that person's spouse in excess of \$300,000, in each of those years, and has a reasonable expectation of reaching the same income level in the current year;
  - (13) An executive officer or director of the Company;

o (14) An entity in which all of the equity owners qualify under any of the above subparagraphs. If the undersigned belongs to this investor category only, list the equity owners of the undersigned, and the investor category which each such equity owner satisfies.

**A. FOR EXECUTION BY AN INDIVIDUAL:**

\_\_\_\_\_ By \_\_\_\_\_  
Date  
Print Name: \_\_\_\_\_

**B. FOR EXECUTION BY AN ENTITY:**

\_\_\_\_\_ Entity Name: \_\_\_\_\_  
By \_\_\_\_\_  
Date  
Print Name: \_\_\_\_\_  
Title: \_\_\_\_\_

**C. ADDITIONAL SIGNATURES (if required by partnership, corporation or trust document):**

\_\_\_\_\_ Entity Name: \_\_\_\_\_  
By \_\_\_\_\_  
Date  
Print Name: \_\_\_\_\_  
Title: \_\_\_\_\_

\_\_\_\_\_ Entity Name: \_\_\_\_\_  
By \_\_\_\_\_  
Date  
Print Name: \_\_\_\_\_  
Title: \_\_\_\_\_

EXHIBIT B-2

SECURITIES ISSUANCE QUESTIONNAIRE

Pursuant to Section 2.2(b) of the Agreement, please provide us with the following information:

1. The exact name in which the Securities are to be registered (this is the name that will appear in the Company's stock register). You may use a nominee name if appropriate:
2. The relationship between the Purchaser of the Securities and the Registered Holder listed in response to Item 1 above:
3. The mailing address, telephone and telecopy number of the Registered Holder listed in response to Item 1 above:
4. The Tax Identification Number (or, if an individual, the Social Security Number) of the Registered Holder listed in response to Item 1 above:

EXHIBIT C

FORM OF IRREVOCABLE TRANSFER AGENT INSTRUCTIONS

As of \_\_\_\_\_,

250 Royal Street  
Canton, Massachusetts 02021  
Attn:

Ladies and Gentlemen:

Reference is made to that certain Securities Purchase Agreement, dated as of March 10, 2017 (the “*Agreement*”), by and among Gemphire Therapeutics Inc., a Delaware corporation (the “*Company*”), and the purchasers named on the signature pages thereto (collectively, and including permitted transferees, the “*Holder*s”), pursuant to which the Company is issuing to the Holders shares (the “*Shares*”) of Common Stock of the Company, par value \$0.001 per share (the “*Common Stock*”), and warrants (the “*Warrants*”), which are exercisable for shares of Common Stock.

This letter shall serve as our irrevocable authorization and direction to you (provided that you are the transfer agent of the Company at such time and the conditions set forth in this letter are satisfied), subject to any stop transfer instructions that we may issue to you from time to time, if any: (i) to issue certificates representing shares of Common Stock upon transfer or resale of the Shares; and (ii) to issue shares of Common Stock upon the exercise of the Warrants (the “*Warrant Shares*”) to or upon the order of a Holder from time to time upon delivery to you of a properly completed and duly executed Exercise Notice, in the form attached hereto as Annex I, which has been acknowledged by the Company as indicated by the signature of a duly authorized officer of the Company thereon together with indication of receipt of the exercise price therefor.

You acknowledge and agree that so long as you have received (a) written confirmation from the Company’s legal counsel that either (1) a registration statement covering resales of the Shares and Warrant Shares has been declared effective by the Securities and Exchange Commission (the “*Commission*”) under the Securities Act of 1933, as amended (the “*Securities Act*”), or (2) the Shares or Warrant Shares, as the case may be, have been sold in conformity with Rule 144 under the Securities Act (“*Rule 144*”) or 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, and (b) if applicable, a copy of such registration statement, then, unless otherwise required by law, within three (3) Trading Days of your receipt of a notice of transfer, Shares or the Exercise Notice, you shall issue the certificates representing the Shares and/or Warrant Shares (or a statement of ownership of uncertificated Shares and/or Warrant Shares) registered in the names of such Holders or transferees, as the case may be, and such certificates shall not bear any legend restricting transfer of the Shares and/or Warrant Shares thereby and should not be subject to any stop-transfer restriction; *provided, however*, that if such Shares and/or Warrant Shares are not registered for resale under the Securities Act or able to be sold 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, then the certificates for such Shares and/or Warrant Shares shall bear the following legend:

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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 THE SECURITIES ACT. NOTWITHSTANDING THE FOREGOING, THE SECURITIES MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT OR OTHER LOAN OR FINANCING ARRANGEMENT SECURED BY THE SECURITIES.

A form of written confirmation from the Company’s outside legal counsel that a registration statement covering resales of the Shares and Warrant Shares has been declared effective by the Commission under the Securities Act is attached hereto as Annex I.

Please be advised that the Holders are relying upon this letter as an inducement to enter into the Agreement and, accordingly, each Holder is a third party beneficiary to these instructions.

Please execute this letter in the space indicated to acknowledge your agreement to act in accordance with these instructions.

Very truly yours,

GEMPHIRE THERAPEUTICS INC.

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

Acknowledged and Agreed:

COMPUTERSHARE, INC.

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By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_, \_\_\_\_\_

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Annex I

FORM OF NOTICE OF EFFECTIVENESS OF REGISTRATION STATEMENT

Computershare, Inc.  
250 Royal Street  
Canton, Massachusetts 02021  
Attn:

Re: Gemphire Therapeutics Inc.

Ladies and Gentlemen:

We are counsel to Gemphire Therapeutics Inc., a Delaware corporation (the “*Company*”), and have represented the Company in connection with that certain Securities Purchase Agreement, dated as of March 10, 2017, entered into by and among the Company and the purchasers named therein (collectively, the “*Purchasers*”) pursuant to which the Company issued to the Purchasers shares of the Company’s common stock, \$0.001 par value per share (the “*Common Stock*”), and warrants exercisable for shares of Common Stock (the “*Warrants*”). Pursuant to that certain Registration Rights Agreement of even date, the Company agreed to register the resale of the Common Stock, including shares of Common Stock issuable upon exercise of the Warrants (collectively, the “*Registrable Securities*”), under the Securities Act of 1933, as amended (the “*Securities Act*”). In connection with the Company’s obligations under the Registration Rights Agreement, dated March 10, 2017, the Company filed a Registration Statement on Form S-1 (File No. 333- ) (the “*Registration Statement*”) with the Securities and Exchange Commission (the “*Commission*”) relating to the Registrable Securities, which names each of the Purchasers as a selling stockholder thereunder.

In connection with the foregoing, we advise you that a member of the Commission’s staff has advised us by telephone that the Commission has entered an order declaring the Registration Statement effective under the Securities Act at [a.m.][p.m.] on , 2017, and we have no knowledge, after telephonic inquiry of a member of the staff, that any stop order suspending its effectiveness has been issued or that any proceedings for that purpose are pending before, or threatened by, the Commission and the Registrable Securities are available for resale under the Securities Act pursuant to the Registration Statement.

This letter shall serve as our standing notice to you that the Common Stock may be freely transferred by the Purchasers pursuant to the Registration Statement. You need not require further letters from us to effect any future legend-free issuance or reissuance of shares of Common Stock to the Purchasers or the transferees of the Purchasers, as the case may be, as contemplated by the Company’s Irrevocable Transfer Agent Instructions, dated , 2017, provided at the time of such reissuance, the Company has not otherwise notified you that the Registration Statement is unavailable for the resale of the Registrable Securities. This letter shall serve as our standing instructions with regard to this matter.

Very truly yours,

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Honigman Miller Schwartz and Cohn LLP

By: \_\_\_\_\_

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EXHIBIT D

FORM OF SECRETARY’S CERTIFICATE

The undersigned hereby certifies that he is the duly elected, qualified and acting Secretary of Gemphire Therapeutics Inc., a Delaware corporation (the “*Company*”), and that as such he is authorized to execute and deliver this certificate in the name and on behalf of the Company and in connection with the Securities Purchase Agreement, dated as of March , 2017, by and among the Company and the investors party thereto (the “*Securities Purchase Agreement*”), and further certifies in his official capacity, in the name and on behalf of the Company, the items set forth below. Capitalized terms used but not otherwise defined herein shall have the meaning set forth in the Securities Purchase Agreement.

1. Attached hereto as Exhibit A is a true, correct and complete copy of the resolutions duly adopted by the Board of Directors of the Company at a meeting thereof held][by unanimous written consent] on , 2017 and of the Financing Committee of the Board of Directors of the Company [at a meeting thereof held][by unanimous written consent] on March , 2017. Such resolutions have not in any way been amended, modified, revoked or rescinded, have been in full force and effect since their adoption to and including the date hereof and are now in full force and effect.
2. Attached hereto as Exhibit B is a true, correct and complete copy of the Third Amended and Restated Certificate of Incorporation of the Company, together with any and all amendments thereto currently in effect, and no action has been taken to further amend, modify or repeal such Third Amended and Restated Certificate of Incorporation, the same being in full force and effect in the attached form as of the date hereof.
3. Attached hereto as Exhibit C is a true, correct and complete copy of the Amended and Restated Bylaws of the Company and any and all amendments thereto currently in effect, and no action has been taken to further amend, modify or repeal such Amended and Restated Bylaws, the same being in full force and effect in the attached form as of the date hereof.
4. Each person listed below has been duly elected or appointed to the position(s) indicated opposite his name and is duly authorized to sign the Securities Purchase Agreement and each of the Transaction Documents on behalf of the Company, and the signature appearing opposite such

person's name below is such person's genuine signature.

<u>Name</u>	<u>Position</u>	<u>Signature</u>
Mina Sooch	President and Chief Executive Officer	_____
Jeffrey S. Mathiesen	Chief Financial Officer	_____

IN WITNESS WHEREOF, the undersigned has hereunto set his hand as of this      day of March, 2017.

\_\_\_\_\_  
Secretary

I, Mina Sooch, President and Chief Executive Officer, hereby certify that that the signature set forth above is his true signature.

\_\_\_\_\_ is the duly elected, qualified and acting Secretary of the Company and

\_\_\_\_\_  
President and Chief Executive Officer

**EXHIBIT A**

**Resolutions**

**EXHIBIT B**

**Third Amended and Restated Certificate of Incorporation**

**EXHIBIT C**

**Amended and Restated Bylaws**

EXHIBIT E

FORM OF OFFICER'S CERTIFICATE

The undersigned, the President and Chief Executive Officer of Gemphire Therapeutics Inc., a Delaware corporation (the "*Company*"), pursuant to Section 2.2(a)(vii) of the Securities Purchase Agreement, dated as of March      , 2017, by and among the Company and the investors signatory thereto (the "*Securities Purchase Agreement*"), hereby represents, warrants and certifies as follows (capitalized terms used but not otherwise defined herein shall have the meaning set forth in the Securities Purchase Agreement):

1. The representations and warranties of the Company contained in the Securities Purchase Agreement are 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 date hereof, as though made on and as of such date, except for such representations and warranties that speak as of a specific date.
2. The Company has 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 date hereof.

IN WITNESS WHEREOF, the undersigned has executed this certificate this      day of March, 2017.

\_\_\_\_\_  
President and Chief Executive Officer

EXHIBIT F

WIRE INSTRUCTIONS

EXHIBIT G

FORM OF LOCK-UP AGREEMENT

, 2017

PIPER JAFFRAY & CO.  
800 Nicollet Mall  
Minneapolis, Minnesota 55402

Re: Private Placement of Shares

Ladies and Gentlemen:

The undersigned understands that Piper Jaffray & Co. proposes to act as the sole lead placement agent (the "*Lead Placement Agent*"), for Gemphire Therapeutics Inc., a Delaware corporation (the "*Company*"), in connection with a proposed private placement (the "*Offering*") of shares (the "*Shares*") of common stock, par value \$0.001 per share (the "*Common Stock*"), of the Company.

In order to induce the Lead Placement Agent to continue its efforts in connection with the Offering, the undersigned hereby agrees that for a period (the "*Lock-Up Period*") of thirty (30) days following the date of effectiveness of the registration statement registering the resale of the Shares filed by the Company with the Securities and Exchange Commission in connection with such Offering, the undersigned will not, without the prior written consent of the Lead Placement Agent, directly or indirectly, (1) offer, sell, contract to sell, pledge, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend, or otherwise transfer or dispose of any shares of the Common Stock, or any securities convertible into or exercisable or exchangeable for the Common Stock (including, without limitation, shares of Common Stock or any such securities which may be deemed to be beneficially owned by the undersigned in accordance with the rules and regulations promulgated under the Securities Act of 1933, as the same may be amended or supplemented from time to time (such shares or securities, the "*Beneficially Owned Shares*")); (2) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of the Beneficially Owned Shares, Common Stock, or any securities convertible into or exchangeable for the Common Stock, regardless of whether any such transaction described herein is to be settled by delivery of the Common Stock or such other securities, or by delivery of cash or otherwise; (3) make any demand for, or exercise any right with respect to, the registration of any shares of the Beneficially Owned, Shares, Common Stock or any security convertible into or exercisable of exchangeable for the Common Stock; or (4) publicly announce any intention to do any of the foregoing; *provided, however*, that the obligations under this letter agreement (the "*Lock-Up Agreement*") shall not apply to any Shares acquired in connection with the Offering.

Notwithstanding the foregoing, the restrictions set forth in clause (1) and (2) above shall not apply to (i) transfers as a bona fide gift or gifts, provided that the donee or donees thereof agree to be bound in writing by the restrictions set forth herein, (ii) transfers to any trust for the direct or

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indirect benefit of the undersigned or the immediate family of the undersigned, provided that the trustee of the trust agrees to be bound in writing by the restrictions set forth herein, and provided further that any such transfer shall not involve a disposition for value, (iii) transfers effected pursuant to any exchange of "underwater" options with the Company, (iv) transfers by will, other testamentary document or intestate succession to the legal representative, heir, beneficiary or member of the immediate family of the undersigned, provided that any recipient of such transfer agrees to be bound in writing by the restrictions set forth herein, (v) by operation of law, including pursuant to a qualified domestic relations order or in connection with a divorce settlement, provided that (A) any recipient of such a transfer agrees to be bound in writing by the restrictions set forth herein and (B) any public disclosure or filing under the Exchange Act or otherwise that is required to be made during the Lock-up Period as a result of such transfer shall include a statement that such transfer has occurred by operation of law, (vi) the exercise of an option to purchase shares of Common Stock outstanding on the date hereof, including the sale of a portion of stock to be issued in connection with such exercise to finance a "cashless" exercise, provided that any shares of Common Stock issued upon the exercise of such option shall continue to be subject to this Lock-Up Agreement, (vii) sales to the Company pursuant to agreements under which the Company, (A) upon termination of employment, has the option to repurchase such shares of Common Stock or any securities convertible into or exercisable or exchangeable for the Common Stock, (B) is required to repurchase shares of Common Stock or any securities convertible into or exercisable or exchangeable for the Common Stock or (C) has a right of first refusal with respect to transfers of such shares of Common Stock or any securities convertible into or exercisable or exchangeable for the Common Stock upon termination of service of the undersigned, (viii) the establishment of a trading plan pursuant to Rule 10b5-1 promulgated under the Exchange Act, provided, that there are no sales under or public disclosure of such plan during the Lock-up Period, or (ix) the transfer of shares of Common Stock or any securities convertible into or exercisable or exchangeable for the Common Stock pursuant to a bona fide third party tender offer, merger, consolidation or other similar transaction made to all holders of shares of Common Stock involving a Change of Control. For purposes of this Lock-Up Agreement, "*Change of Control*" means the consummation of any bona fide third party tender offer, merger, consolidation or other similar transaction approved by the Board of Directors of the Company, the result of which is that any "person" (as defined in Section 13(d)(3) of the Exchange Act), or group of persons, other than the Company or its subsidiaries, becomes the beneficial owner (as defined in Rules 13d-3 and 13d-5 of the Exchange Act) of 100% of the voting power of the voting stock of the Company, and "*immediate family*" shall mean any relationship by blood, marriage or adoption, not more remote than first cousin.

None of the restrictions set forth in this Lock-Up Agreement shall apply to Common Stock acquired in open market transactions. In addition, if the undersigned is a partnership, limited liability company, trust, corporation or similar entity, it may distribute the Common Stock or Beneficially Owned Shares to its partners, members or stockholders; *provided, however*, that in each such case, prior to any such transfer, each transferee shall execute a duplicate form of this Lock-Up Agreement or execute an agreement, reasonably satisfactory to the Lead Placement Agent, pursuant to which each transferee shall agree to receive and hold such Common Stock or Beneficially Owned Shares subject to the provisions hereof, and there shall be no further transfer except in accordance with the provisions hereof.

The foregoing restrictions are expressly agreed to preclude the undersigned from engaging in any hedging or other transaction which is designed to or reasonably expected to lead to or result

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in a sale or disposition of the Beneficially Owned Shares or Common Stock even if such Beneficially Owned Shares or Common Stock would be disposed of by someone other than the undersigned. Such prohibited hedging or other transactions would include without limitation any short sale or any purchase, sale or grant of any right (including without limitation any put option or put equivalent position or call option or call equivalent position) with respect to any of the Beneficially Owned Shares or Common Stock or with respect to any security that includes, relates to, or derives any significant part of its value from such Beneficially Owned Shares or Common Stock.

The undersigned hereby agrees and consents to the entry of stop transfer instructions with the Company's transfer agent against the transfer of securities of the Company held by the undersigned during the Lock-Up Period (as may have been extended pursuant hereto), except in compliance with this Lock-Up Agreement.

The undersigned understands that, if the Securities Purchase Agreement executed by Purchasers in connection with the Offering does not become effective, or if the Offering shall terminate or be terminated prior to payment for and delivery of the Shares to be sold thereunder, or if the Purchase Agreement has not been executed within thirty (30) days of the date hereof, this Lock-Up Agreement shall be terminated and the undersigned shall be released from all obligations under this Lock-Up Agreement.

The undersigned hereby represents and warrants that the undersigned has full power and authority to enter into this Lock-Up Agreement. This Lock-Up Agreement is irrevocable and all authority herein conferred or agreed to be conferred shall survive the death or incapacity of the undersigned and any obligations of the undersigned shall be binding upon the heirs, personal representatives, successors and assigns of the undersigned. The undersigned agrees that Purchasers of the Shares in the Offering shall be intended third-party beneficiaries of the undersigned's obligations under this Lock-Up Agreement.

This Lock-Up Agreement shall be governed by and construed in accordance with the laws of the State of New York, without regard to the conflict of laws principles thereof (except Sections 5-1401 and 5-1402 of the General Obligations Law).

Very truly yours,

Print Name: \_\_\_\_\_

Print Title: \_\_\_\_\_

Signature: \_\_\_\_\_

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EXHIBIT H

LIST OF DIRECTORS AND EXECUTIVE OFFICERS  
EXECUTING LOCK-UP AGREEMENTS

Mina Sooch  
Jeff Mathiesen  
Charles Bisgaier  
Lee Golden  
Seth Reno  
Steve Gullans  
Kent Hawryluk  
Kenneth Kousky  
Pedro Lichtinger  
Andrew Sassine

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EXHIBIT I

FORM OF WARRANT

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## REGISTRATION RIGHTS AGREEMENT

This Registration Rights Agreement (this “*Agreement*”) is made and entered into as of March 10, 2017 by and among Gemphire Therapeutics Inc., a Delaware corporation (the “*Company*”), and the several purchasers signatory hereto (each a “*Purchaser*” and collectively, the “*Purchasers*”).

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

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 Purchasers 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*” means, with respect to any person, any other person which directly or indirectly controls, is controlled by, or is under common control with, such person.

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

“*Business Day*” means a day, other than a Saturday or Sunday, on which banks in New York City are open for the general transaction of business.

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

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

“*Commission*” means the Securities and Exchange Commission.

“*Common Stock*” means the common stock of the Company, par value \$0.001 per share, and any securities into which such common stock may hereinafter be reclassified.

“*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 ninetieth (90<sup>th</sup>) 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 one hundred twentieth (120<sup>th</sup>) 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 fifth (5<sup>th</sup>) 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

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

“*Filing Deadline*” means, with respect to the Initial Registration Statement required to be filed pursuant to Section 2(a), the thirtieth (30<sup>th</sup>) 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*” means an 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.

“*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 Global Market.

“*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.

“*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.

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

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

“*Registrable Securities*” means all of (i) the Shares, (ii) the Warrant Shares and (iii) any 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 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); or (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.

“*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), amendments and supplements to such Registration Statements, including post-effective amendments, all exhibits and all material incorporated by reference or deemed to be incorporated by reference in such Registration Statements.

“*Remainder Registration Statement*” 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 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.

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“*Trading Day*” means (i) a day on which the Common Stock is listed or quoted and traded on its Principal Market (other than the OTC Bulletin Board), or (ii) if the Common Stock is not listed on a Trading Market (other than the OTC Bulletin Board), a day on which the Common Stock is traded in the over-the-counter market, as reported by the OTC Bulletin Board, 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 Alternext (formerly the American Stock Exchange), the NASDAQ Global Select Market, the NASDAQ Global Market, the NASDAQ Capital Market or 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.

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-1, 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) the “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). 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, the Company agrees to promptly (i) 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 (ii) withdraw the Initial Registration Statement and file one or more new registration statements (together, the “*New Registration Statement*”), in either case covering the maximum number of Registrable Securities permitted to be registered by the Commission, on Form S-1, subject to the provisions of Section 2(e); *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 the SEC Guidance, including without limitation, the Compliance and Disclosure Interpretation 612.09 with respect to the Securities Act Rule 415, dated Jan. 26, 2009, compiled by the Commission’s Division of Corporation Finance. 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 (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 number of Registrable Securities to be registered on such Registration Statement will first be reduced by Registrable

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Securities not acquired pursuant to the Purchase Agreement (whether pursuant to registration rights or otherwise), and second by Registrable Securities represented by holders of Warrant Shares (applied, in the case that some Warrant Shares may be registered, to such Holders on a pro rata basis based on the number of unregistered Warrant Shares held by such Holders), and third by Registrable Securities represented by Shares (applied, in the case that some Shares may be registered, to such Holders on a pro rata basis based on the 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 Shares and Warrant Shares 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 (i) or (ii) 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, subject to Section 2(e) (the “*Remainder Registration Statements*”).

(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 filing with the Commission a request for acceleration of effectiveness in accordance with Rule 461 promulgated under the Securities Act), and shall use its commercially reasonable efforts to keep each Registration Statement continuously effective under the Securities Act until the earlier of (i) such time as all of the Registrable Securities covered by such Registration Statement have been publicly sold by the Holders or (ii) the date that all Registrable Securities covered by such Registration Statement may be sold by non-affiliates without volume or manner-of-sale restrictions pursuant to Rule 144, without the requirement for the Company to be in compliance with the current public information requirement under Rule 144 as determined by counsel to the Company pursuant to a written opinion letter to such effect, addressed and reasonably acceptable to the Company’s transfer agent (the “*Effectiveness Period*”). The Company shall telephonically request effectiveness of a Registration Statement as of 5:00 P.M. New York City time on a Trading Day. The Company shall promptly notify the Holders via facsimile or electronic mail of a “.pdf” format data file of the effectiveness of a Registration Statement on or before the first Trading Day after the date that the Company telephonically confirms effectiveness with the Commission, which date of confirmation shall initially be the date requested for effectiveness of such Registration Statement. 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, (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) subject to Section 3(h), 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 thirty (30) consecutive calendar days or sixty (60) calendar days (which need not be consecutive days) during any twelve (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), or (iv) the Company fails to satisfy the current public information requirement pursuant to Rule 144(c)(1) as a result of which the Holders who are not affiliates are unable to sell Registrable Securities without restriction under Rule 144 (or any successor thereto), (any such failure or breach in clauses (i) through (iv) above being referred to as an “*Event*,” and, for purposes of clauses (i), (ii) or (iv), the date on which such Event occurs, or for

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purposes of clause (iii), the date on which such thirty (30) or sixty (60) 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, on each such Event Date and on each monthly anniversary of each such Event Date (if the applicable Event shall not have been cured by such 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 (“*Liquidated Damages*”), equal to one percent (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 parties agree that (1) 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 (except in respect of an Event described in Section 2(c)(iv) herein), (it being understood that this sentence shall not relieve the Company of any Liquidated Damages accruing prior to the Effectiveness Deadline) and in no event shall the aggregate amount of Liquidated Damages (excluding Liquidated Damages payable in respect of an Event described in Section 2(c)(iv) herein) payable to a Holder exceed, in the aggregate, four percent (4%) of the aggregate purchase price paid by such Holder pursuant to the Purchase Agreement (eight percent (8%) if the only Event is clause (iv)) and (2) in no event shall the Company be liable in any thirty (30) day period for Liquidated Damages under this Agreement in excess of one percent (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 ten (10) Business Days after the date payable, the Company will pay interest thereon at a rate of one and one-half percent (1.5%) 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. 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. 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 five (5) Trading Days following the date of this Agreement. At least ten (10) 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 three (3) 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 securityholder 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

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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) The Company shall undertake to register the Registrable Securities on Form S-3 promptly after such form is available to the Company, *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 by the Commission to be or otherwise becomes effective. Notwithstanding anything herein to the contrary, any time period commencing on the filing of a Registration Statement on Form S-3 to register the Registrable Securities and continuing until the time such Registration Statement has been declared effective by the Commission shall not be considered an Event hereunder and no Liquidated Damages shall accrue or be payable with respect thereto so long as a Registration Statement on Form S-1 remains effective and available for resale of such Registrable Securities during such period.

### 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 a reasonable investigation within the meaning of the Securities Act. The Company shall not file any Registration Statement or 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) 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

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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) during the Effectiveness Period, 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 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 each Holder shall be responsible for the delivery of the Prospectus to the Persons to whom such Holder sells any of the Shares or the Warrant Shares (including in accordance with Rule 172 under the Securities Act), 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 that created the requirement for the Company to amend or supplement such Registration Statement was filed with the Commission.

(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 electronic mail (and, in the case of (i) (A) below, not less than one (1) Trading Day prior to such filing) and (if requested by any such Person) confirm such notice in writing 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, 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; (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

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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, 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 sixty (60)

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calendar days (which need not be consecutive days) in any twelve (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 (“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.

(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 Rules 5110 and/or 5190 as requested by any such Holder and the Company shall pay the filing fee required for the first such filing promptly and in any case within the time period then required by FINRA.

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) above, 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 the FINRA Rules 5110 and/or 5190, 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, except to the extent provided for in the Transaction Documents, any legal fees or other costs of the Holders.

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5. Indemnification.

(a) Indemnification by the Company. The Company shall, notwithstanding any termination of this Agreement, indemnify, defend 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 any form of prospectus or in any amendment or supplement thereto or in any preliminary prospectus, 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 form of 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, Exchange Act or any state securities law or any rule or regulation thereunder, in connection with the performance of its obligations under this Agreement, 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 expressly for use therein, 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 such form of 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, to the extent that following the receipt of the Advice the misstatement or omission giving rise to such Loss would have been corrected or (C) to the extent that any such Losses arise out of the Holder’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, partners, members, managers, stockholders, 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 upon any untrue or alleged untrue statement of a material fact contained in any Registration Statement, any Prospectus, or any form of prospectus, or in any amendment or supplement thereto or in any preliminary prospectus, 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

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 such form of 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 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 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.

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 twenty (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. In the event of a breach by the Company or by a Holder of any of its 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; Prohibition on Filing Other Registration Statements. Except and to the extent specified in the SEC Reports or the Purchase Agreement, neither the

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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 and the Company shall not prior to the Effective Date enter into any agreement providing any such right to any of its security holders (other than this Agreement). The Company shall not file with the Commission a registration statement relating to an offering for its own account under the Securities Act of any of its equity securities other than a registration statement on Form S-8 or, in connection with an acquisition, on Form S-4 until the earlier of (i) the date that is thirty (30) days after the Effective Date or (ii) the date that all Registrable Securities are eligible for resale by non-affiliates without the requirement for the Company to be in compliance with the current public information requirements under Rule 144. For the avoidance of doubt, the Company shall not be prohibited from preparing and filing with the Commission a registration statement relating to an offering of Common Stock by existing stockholders of the Company under the Securities Act pursuant to the terms of registration rights held by such stockholder or from filing amendments to registration statements filed prior to the date of this Agreement.

(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, each 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 stock transfer orders to enforce the provisions of this Section 6(d). The Company agrees and acknowledges that any periods during which the Holder is required to discontinue the disposition of the Registrable Securities hereunder shall be subject to the provisions of Section 2(c).

(e) No Inconsistent Agreements. Neither the Company nor any of its Subsidiaries has entered, as of the date hereof, nor shall the Company or any of its Subsidiaries, 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, in which case such amendment, modification, supplement or waiver shall be binding on all Holders, 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.

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(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. 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.

(n) Independent Nature of Purchasers' Obligations and Rights. The obligations of each Purchaser under this Agreement are several and not joint with the obligations of any other Purchaser hereunder, and no Purchaser shall be responsible in any way for the performance of the obligations of any

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other Purchaser hereunder. The decision of each Purchaser to purchase the Securities pursuant to the Transaction Documents has been made independently of each other Purchaser. Nothing contained herein or in any other agreement or document delivered at any closing, and no action taken by any Purchaser pursuant hereto or thereto, shall be deemed to constitute the Purchasers as a partnership, an association, a joint venture or any other kind of entity, or create a presumption that the Purchasers are in any way acting in concert with respect to such obligations or the transactions contemplated by this Agreement. Each Purchaser acknowledges that no other Purchaser has acted as agent for such Purchaser in connection with making its investment hereunder and that no Purchaser will be acting as agent of such Purchaser in connection with monitoring its investment in the Securities or enforcing its rights under the Transaction Documents. Each Purchaser shall be entitled to protect and enforce its rights, including, without limitation, the rights arising out of this Agreement, and it shall not be necessary for any other Purchaser to be joined as an additional party in any Proceeding for such purpose. The Company acknowledges that each of the Purchasers has been provided with the same Registration Rights Agreement for the purpose of closing a transaction with multiple Purchasers and not because it was required or requested to do so by any Purchaser.

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

GEMPHIRE THERAPEUTICS INC.

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

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

NAME OF INVESTING ENTITY

\_\_\_\_\_

AUTHORIZED SIGNATORY

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

ADDRESS FOR NOTICE

c/o: \_\_\_\_\_

Street: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Attention: \_\_\_\_\_

Tel: \_\_\_\_\_  
Fax: \_\_\_\_\_  
Email: \_\_\_\_\_

ANNEX A

## 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 those shares of Common Stock by such holders 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.

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 Supplementary Material .01 and Supplementary Material .02 thereto.

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(a)(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(a)(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,

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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. In no event shall any broker-dealer receive fees, commissions and markups, which, in the aggregate, would exceed eight percent (8.0%).

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.

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ANNEX B

## SELLING STOCKHOLDER NOTICE AND QUESTIONNAIRE

The undersigned holder of shares of the common stock, par value \$0.001 per share of Gemphire Therapeutics Inc. (the “*Company*”) issued pursuant to a certain Securities Purchase Agreement by and among the Company and the Purchasers named therein, dated as of March , 2017 (the “*Agreement*”), understands that the Company intends to file with the Securities and Exchange Commission a registration statement on Form S-1 (the “*Resale Registration Statement*”) for the registration and the resale under Rule 415 of the Securities Act of 1933, as amended (the “*Securities Act*”), of the Registrable Securities in accordance with the terms of the Agreement. All capitalized terms not otherwise defined herein shall have the meanings ascribed thereto in the Agreement.

In order to sell or otherwise dispose of any Registrable Securities pursuant to the Resale Registration Statement, a holder of Registrable Securities generally will be required to be named as a selling stockholder in the related prospectus or a supplement thereto (as so supplemented, the “*Prospectus*”), deliver the Prospectus to purchasers of Registrable Securities (including pursuant to Rule 172 under the Securities Act) and be bound by the provisions of the Agreement (including certain indemnification provisions, as described below). Holders must complete and deliver this Notice and Questionnaire in order to be named as selling stockholders in the Prospectus. **Holders of Registrable Securities who do not complete, execute and return this Notice and Questionnaire within three (3) Trading Days following the date of the Agreement (1) will not be named as selling stockholders in the Resale Registration Statement or the Prospectus and (2) may not use the Prospectus for resales of Registrable Securities.**

Certain legal consequences arise from being named as a selling stockholder in the Resale Registration Statement and the Prospectus. Holders of Registrable Securities are advised to consult their own securities law counsel regarding the consequences of being named or not named as a selling stockholder in the Resale Registration Statement and the Prospectus.

**NOTICE**

The undersigned holder (the “*Selling Stockholder*”) of Registrable Securities hereby gives notice to the Company of its intention to sell or otherwise dispose of Registrable Securities owned by it and listed below in Item (3), unless otherwise specified in Item (3), pursuant to the Resale Registration Statement. The undersigned, by signing and returning this Notice and Questionnaire, understands and agrees that it will be bound by the terms and conditions of this Notice and Questionnaire and the Agreement.

The undersigned hereby provides the following information to the Company and represents and warrants that such information is accurate and complete:

### QUESTIONNAIRE

**1. Name.**

(a) Full Legal Name of Selling Stockholder:

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(b) Full Legal Name of Registered Holder (if not the same as (a) above) through which Registrable Securities Listed in Item 3 below are held:

(c) Full Legal Name of Natural Control Person (which means a natural person who directly or indirectly alone or with others has power to vote or dispose of the securities covered by the questionnaire):

**2. Address for Notices to Selling Stockholder:**

Telephone:

Fax:

Contact Person:

E-mail address of Contact Person:

**3. Beneficial Ownership of Registrable Securities Issuable Pursuant to the Purchase Agreement:**

(a) Type and Number of Registrable Securities beneficially owned and issued pursuant to the Agreement:

(b) Number of shares of Common Stock to be registered pursuant to this Notice for resale:

**4. Broker-Dealer Status:**

(a) Are you a broker-dealer?

Yes  No

(b) If “yes” to Section 4(a), did you receive your Registrable Securities as compensation for investment banking services to the Company?

Yes  No

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Note: If no, the Commission’s staff has indicated that you should be identified as an underwriter in the Registration Statement.

(c) Are you an affiliate of a broker-dealer?

Yes  No

Note: If yes, provide a narrative explanation below:

(c) If you are an affiliate of a broker-dealer, do you certify that you bought the Registrable Securities in the ordinary course of business, and at the time of the purchase of the Registrable Securities to be resold, you had no agreements or understandings, directly or indirectly, with any person to distribute the Registrable Securities?

Yes  No

Note: If no, the Commission's staff has indicated that you should be identified as an underwriter in the Registration Statement.

#### 5. Beneficial Ownership of Other Securities of the Company Owned by the Selling Stockholder.

*Except as set forth below in this Item 5, the undersigned is not the beneficial or registered owner of any securities of the Company other than the Registrable Securities listed above in Item 3.*

Type and amount of other securities beneficially owned:

#### 6. Relationships with the Company:

*Except as set forth below, neither the undersigned nor any of its affiliates, officers, directors or principal equity holders (owners of 5% or more of the equity securities of the undersigned) has held any position or office or has had any other material relationship with the Company (or its predecessors or affiliates) during the past three years.*

State any exceptions here:

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#### 7. Plan of Distribution:

*The undersigned has reviewed the form of Plan of Distribution attached as Annex A to the Registration Rights Agreement, and hereby confirms that, except as set forth below, the information contained therein regarding the undersigned and its plan of distribution is correct and complete.*

State any exceptions here:

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The undersigned agrees to promptly notify the Company of any inaccuracies or changes in the information provided herein that may occur subsequent to the date hereof and prior to the effective date of any applicable Resale Registration Statement. All notices hereunder and pursuant to the Agreement shall be made in writing, by hand delivery, confirmed or facsimile transmission, first-class mail or air courier guaranteeing overnight delivery at the address set forth below. In the absence of any such notification, the Company shall be entitled to continue to rely on the accuracy of the information in this Notice and Questionnaire.

By signing below, the undersigned consents to the disclosure of the information contained herein in its answers to Items (1) through (7) above and the inclusion of such information in the Resale Registration Statement and the Prospectus. The undersigned understands that such information will be relied upon by the Company in connection with the preparation or amendment of any such Registration Statement and the Prospectus.

By signing below, the undersigned acknowledges that it understands its obligation to comply, and agrees that it will comply, with the provisions of the Exchange Act and the rules and regulations thereunder, particularly Regulation M in connection with any offering of Registrable Securities pursuant to the Resale Registration Statement. The undersigned also acknowledges that it understands that the answers to this Questionnaire are furnished for use in connection with Registration Statements filed pursuant to the Registration Rights Agreement and any amendments or supplements thereto filed with the Commission pursuant to the Securities Act.

The undersigned hereby acknowledges and is advised of the following Compliance and Disclosure Interpretation 239.10 with respect to the Securities Act Section 5, dated Nov. 26, 2008, compiled by the Commission's Division of Corporation Finance, regarding short selling:

*"An issuer filed a Form S-3 registration statement for a secondary offering of common stock which is not yet effective. One of the selling shareholders wanted to do a short sale of common stock "against the box" and cover the short sale with registered shares after the effective date. The issuer was advised that the short sale could not be made before the registration statement becomes effective, because the shares underlying the short sale are deemed to be sold at the time such sale is made. There would, therefore, be a violation of Section 5 if the shares were effectively sold prior to the effective date."*

By returning this Questionnaire, the undersigned will be deemed to be aware of the foregoing interpretation.

I confirm that, to the best of my knowledge and belief, the foregoing statements (including without limitation the answers to this Questionnaire) are correct.

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IN WITNESS WHEREOF the undersigned, by authority duly given, has caused this Questionnaire to be executed and delivered either in person or by its duly authorized agent.

Dated: \_\_\_\_\_

Beneficial Owner: \_\_\_\_\_

By: \_\_\_\_\_

Name:

Title:

**PLEASE FAX A COPY OF THE COMPLETED AND EXECUTED NOTICE AND QUESTIONNAIRE, AND RETURN THE ORIGINAL BY OVERNIGHT MAIL, TO:**

Chad Huber  
Piper Jaffray & Co.  
345 Park Avenue  
New York, NY 10154  
Tel: 212-284-9573  
Email: chad.e.huber@pjc.com

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