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

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**FORM 8-K**

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**CURRENT REPORT  
Pursuant to Section 13 or 15(d)  
of the Securities Exchange Act of 1934**

**Date of Report (Date of earliest event reported): February 8, 2018**

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**GEMPHIRE THERAPEUTICS INC.**

(Exact name of registrant as specified in its charter)

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**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: (734) 245-1700**

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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))

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

Emerging growth company

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

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

On February 8, 2018, Gemphire Therapeutics Inc. (“Gemphire”) entered into an Underwriting Agreement (the “Underwriting Agreement”) with Piper Jaffray & Co., as representative (the “Representative”) of the underwriters identified therein (collectively, the “Underwriters”), pursuant to which Gemphire agreed to issue and sell 3,142,858 shares of its common stock, \$0.001 par value per share, at a public offering price of \$7.00 per share (the “Offering”).

Under the terms of the Underwriting Agreement, Gemphire granted the Underwriters a 30-day option to purchase up to an additional 471,429 shares of Gemphire’s common stock. Gemphire expects to receive approximately \$20.1 million in net proceeds from the Offering (assuming the option to purchase additional shares is not exercised), after underwriting discounts and estimated expenses payable by Gemphire. The Offering is scheduled to close on or about February 12, 2018, subject to customary closing conditions.

The Underwriting Agreement contains representations, warranties and covenants made by Gemphire that are customary for transactions of this type. Under the terms of the Underwriting Agreement, Gemphire has agreed to indemnify the Underwriters against certain liabilities, including liabilities under the Securities Act of 1933, as amended. In addition, pursuant to the terms of the Underwriting Agreement, Gemphire and its executive officers and directors have entered into agreements with the Underwriters providing that Gemphire and each of these persons may not, without the prior written approval of the Representative, subject to limited exceptions, offer, sell, transfer or otherwise dispose of Gemphire’s securities for a period of 90 days following the Offering.

The Offering was made pursuant to Gemphire’s Registration Statement on Form S-3 (Registration No. 333-220315), filed with the Securities and Exchange Commission (the “SEC”) on September 1, 2017 and declared effective by the SEC on September 12, 2017, and the related prospectus supplement dated February 8, 2018.

A copy of the Underwriting Agreement is filed as Exhibit 1.1 and is incorporated herein by reference. The foregoing description of the Underwriting Agreement does not purport to be complete and is qualified in its entirety by reference to such exhibit.

The opinion of Gemphire’s counsel regarding the legality of the shares issued pursuant to the Offering is also filed as Exhibit 5.1.

**Item 8.01 Other Events.**

On February 8, 2018, Gemphire issued a press release announcing the terms of the Offering.

A copy of the press release dated February 8, 2018 is attached hereto as Exhibit 99.1 and is incorporated herein by reference. Information contained on or accessible through any website reference in the press release is not part of, or incorporated by reference in, this Current Report on Form 8-K, and the inclusion of such website addresses in this Current Report on Form 8-K by incorporation by reference of the press release is as inactive textual references only.

**Item 9.01 Financial Statements and Exhibits.**

(d) Exhibits.

<u>Exhibit</u>	<u>Description</u>
1.1	Underwriting Agreement, by and between Gemphire and Piper Jaffray & Co. dated February 8, 2018.
5.1	Opinion of Honigman Miller Schwartz and Cohn LLP.
23.1	Consent of Honigman Miller Schwartz and Cohn LLP (contained in Exhibit 5.1).
99.1	Press Release dated February 8, 2018.

**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.

**GEMPHIRE THERAPEUTICS INC.**

Dated: February 9, 2018

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

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3,142,858 Shares  
Gemphire Therapeutics Inc.  
Common Stock

UNDERWRITING AGREEMENT

February 8, 2018

PIPER JAFFRAY & CO.  
As Representative of the several  
Underwriters named in Schedule I hereto

c/o Piper Jaffray & Co.  
U.S. Bancorp Center  
800 Nicollet Mall  
Minneapolis, Minnesota 55402

Ladies and Gentlemen:

Gemphire Therapeutics Inc., a Delaware corporation (the “*Company*”), proposes to sell to the several Underwriters named in Schedule I hereto (the “*Underwriters*”) an aggregate of 3,142,858 shares (the “*Firm Shares*”) of common stock, \$0.001 par value per share (the “*Common Stock*”), of the Company. The Company has also granted to the several Underwriters an option to purchase up to 471,429 additional shares of Common Stock on the terms and for the purposes set forth in Section 3 hereof (the “*Option Shares*”). The Firm Shares and any Option Shares purchased pursuant to this Underwriting Agreement are herein collectively called the “*Securities.*”

The Company hereby confirms its agreement with respect to the sale of the Securities to the several Underwriters, for whom Piper Jaffray & Co. is acting as representative (the “*Representative*”).

1. **Registration Statement and Prospectus.** The Company has prepared and filed with the Securities and Exchange Commission (the “*Commission*”) a registration statement on Form S-3 (File No. 333-220315) under the Securities Act of 1933, as amended (the “*Securities Act*” or “*Act*”) and the rules and regulations (the “*Rules and Regulations*”) of the Commission thereunder, and such amendments to such registration statement as may have been required to the date of this Agreement. Such registration statement has been declared effective by the Commission. Each part of such registration statement, including the amendments, exhibits and any schedules thereto, the documents incorporated by reference therein pursuant to Item 12 of Form S-3 under the Securities Act and the documents and information otherwise deemed to be a part thereof or included therein by Rule 430B under the Securities Act (the “*Rule 430B Information*”) or otherwise pursuant to the Rules and Regulations, as of the time the Registration Statement became effective, is herein called the “*Registration Statement.*” Any registration statement filed by the Company pursuant to Rule 462(b)

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under the Securities Act is called the “Rule 462(b) Registration Statement” and, from and after the date and time of filing of the Rule 462(b) Registration Statement, the term “Registration Statement” shall include the Rule 462(b) Registration Statement.

The prospectus in the form in which it has most recently been filed with the Commission on or prior to the date of this Agreement is herein called the “**Base Prospectus.**” Each preliminary prospectus supplement to the Base Prospectus (including the Base Prospectus as so supplemented), that describes the Securities and the offering thereof, that omitted the Rule 430B Information and that was used prior to the filing of the final prospectus supplement referred to in the following sentence is herein called a “**Preliminary Prospectus.**” Promptly after execution and delivery of this Agreement, the Company will prepare and file with the Commission a final prospectus supplement to the Base Prospectus relating to the Securities and the offering thereof in accordance with the provisions Rule 430B and Rule 424(b) of the Rules and Regulations. Such final supplemental form of prospectus (including the Base Prospectus as so supplemented), in the form filed with the Commission pursuant to Rule 424(b) is herein called the “**Prospectus.**” Any reference herein to the Base Prospectus, any Preliminary Prospectus or the Prospectus shall be deemed to refer to include the documents incorporated by reference therein pursuant to Item 12 of Form S-3 under the Securities Act as of the date of such prospectus.

For purposes of this Agreement, all references to the Registration Statement, the Rule 462(b) Registration Statement, the Base Prospectus, any Preliminary Prospectus, the Prospectus or any amendment or supplement to any of the foregoing shall be deemed to include the copy filed with the Commission pursuant to its Electronic Data Gathering, Analysis and Retrieval system or any successor system thereto (“**EDGAR**”). All references in this Agreement to financial statements and schedules and other information which is “described,” “contained,” “included” or “stated” in the Registration Statement, the Base Prospectus, any Preliminary Prospectus or the Prospectus (or other references of like import) shall be deemed to mean and include all such financial statements and schedules and other information which are incorporated by reference in or otherwise deemed by the Rules and Regulations to be a part of or included in the Registration Statement, the Base Prospectus, any Preliminary Prospectus or the Prospectus, as the case may be; and all references in this Agreement to amendments or supplements to the Registration Statement, the Base Prospectus, any Preliminary Prospectus or the Prospectus shall be deemed to mean and include the subsequent filing of any document under the Securities Exchange Act of 1934, as amended (the “**Exchange Act**”) and which is deemed to be incorporated therein by reference or otherwise deemed by the Rules and Regulations to be a part thereof.

2. ***Representations and Warranties of the Company.***

(a) *Representations and Warranties of the Company.* The Company represents and warrants to, and agrees with, the several Underwriters as follows:

(i) *Registration Statement and Prospectuses.* No order preventing or suspending the use of any Preliminary Prospectus or the Prospectus (or any supplement thereto) has been issued by the Commission and no proceeding for that purpose has been initiated or is pending or, to the knowledge of the Company, threatened by the Commission. As of the time each part of the Registration Statement (or any post-effective amendment

thereto) became or becomes effective (including each deemed effective date with respect to the Underwriters pursuant to Rule 430B or otherwise under the Securities Act), such part conformed or will conform in all material respects to the requirements of the Act and the Rules and Regulations. Upon the filing or first use within the meaning of the Rules and Regulations, each Preliminary Prospectus and the Prospectus (or any supplement to either) conformed or will conform in all material respects to the requirements of the Act and the Rules and Regulations.

The Registration Statement and any post-effective amendment thereto has become effective under the Securities Act. The Company has complied or will comply to the Commission's satisfaction with all requests of the Commission for additional or supplemental information. No stop order suspending the effectiveness of the Registration Statement, any post-effective amendment or any part thereof is in effect and no proceedings for such purpose have been instituted or are pending or, to the knowledge of the Company, are threatened by the Commission.

(ii) *Accurate Disclosure.* Each Preliminary Prospectus, at the time of filing thereof did not 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 light of the circumstances under which they were made, not misleading. Neither the Registration Statement nor any amendment thereto, at the effective time of each part thereof, at the First Closing Date (as defined below) or at the Second Closing Date (as defined below), contained, contains or will contain an untrue statement of a material fact or omitted, omits or will omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. As of the Time of Sale (as defined below), neither (A) the Time of Sale Disclosure Package (as defined below) nor (B) any issuer free writing prospectus (as defined below), when considered together with the Time of Sale Disclosure Package, included an untrue statement of a material fact or omitted to state a material fact necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading. Neither the Prospectus nor any supplement thereto, as of its date, included, and at the First Closing Date or at the Second Closing will include an untrue statement of a material fact, and neither the Prospectus nor any supplement thereto as of its date, omitted, or at the First Closing Date or at the Second Closing Date, will omit, to state a material fact necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading. The representations and warranties in this Section 2(a)(ii) shall not apply to statements in or omissions from any Preliminary Prospectus, the Registration Statement (or any amendment thereto), the Time of Sale Disclosure Package or the Prospectus (or any supplement thereto) made in reliance upon, and in conformity with, written information furnished to the Company by you, or by any Underwriter through you, specifically for use in the preparation of such document, it being understood and agreed that the only such information furnished by any Underwriter consists of the information described as such in Section 6(e).

Each reference to an “*issuer free writing prospectus*” herein means an issuer free writing prospectus as defined in Rule 433 of the Rules and Regulations.

***“Time of Sale Disclosure Package”*** means the Preliminary Prospectus dated February 7, 2018, any free writing prospectus set forth on Schedule II and the information on Schedule III, all considered together.

Each reference to a ***“free writing prospectus”*** herein means a free writing prospectus as defined in Rule 405 of the Rules and Regulations.

***“Time of Sale”*** means 8:30 a.m. (Eastern time) on the date of this Agreement.

(iii) *Issuer Free Writing Prospectuses*. (A) Each Issuer Free Writing Prospectus does not include any information that conflicts with the information contained in the Registration Statement, any Preliminary Prospectus or the Prospectus. The foregoing sentence does not apply to statements in or omissions from any Issuer Free Writing Prospectus based upon and in conformity with written information furnished to the Company by you or by any Underwriter through you specifically for use therein; it being understood and agreed that the only such information furnished by any Underwriter consists of the information described as such in Section 6(e).

(B) (1) At the earliest time after the filing of the Registration Statement that the Company or another offering participant made a *bona fide* offer (within the meaning of Rule 164(h)(2) under the Securities Act) of the Securities and (2) at the date hereof, the Company was not and is not an “ineligible issuer,” as defined in Rule 405 under the Securities Act (without taking account of any determination by the Commission pursuant to Rule 405 of the Rules and Regulations that it is not necessary that the Company be considered an ineligible issuer).

(C) Each Issuer Free Writing Prospectus satisfied, as of its issue date and at all subsequent times through the completion of the public offer and sale of the Securities, all other conditions to use thereof as set forth in Rules 164 and 433 under the Securities Act.

(iv) *Emerging Growth Company*. From the time of initial filing or initial confidential submission of the Registration Statement to the Commission (or, if earlier, the first date on which the Company engaged directly or through any person authorized to act on its behalf in any Testing-the-Waters Communication (as defined below)) through the date hereof, the Company has been and is an “emerging growth company,” as defined in Section 2(a) of the Act (an ***“Emerging Growth Company”***). ***“Testing-the-Waters Communication”*** means any oral or written communication with potential investors undertaken in reliance on Section 5(d) of the Act.

(v) *Testing-the-Waters Materials*. The Company (i) has not alone engaged in any Testing-the-Waters Communications, other than Testing-the-Waters Communications with the prior consent of the Representative with entities that are qualified institutional buyers within the meaning of Rule 144A under the Act or institutions that are accredited investors within the meaning of Rule 501 under the Act and (ii) has not authorized anyone other than the Representative to engage in Testing-the-Waters Communications. The Company reconfirms that the Representative have been authorized to act on its behalf in undertaking Testing-the-Waters Communications. The Company has

not distributed any Written Testing-the-Waters Communications (as defined below) other than those listed on Schedule III hereto. ***“Written Testing-the-Waters Communication”*** means any Testing-the-Waters Communication that is a written communication within the meaning of Rule 405 under the Act. Any individual Written Testing-the-Waters Communication does not conflict with the information contained in the Registration Statement or the Time of Sale Disclosure Package, complied in all material respects with the Act, and when taken together with the Time of Sale Disclosure Package as of the Time of Sale, did not contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(vi) *No Other Offering Materials.* The Company has not distributed and will not distribute any prospectus or other offering material in connection with the offering and sale of the Securities other than any Preliminary Prospectus, the Time of Sale Disclosure Package or the Prospectus or other materials permitted by the Act to be distributed by the Company; *provided, however*, that, except as set forth on Schedule II, the Company has not made and will not make any offer relating to the Securities that would constitute a free writing prospectus, except in accordance with the provisions of Section 4(a)(xv) of this Agreement and, except as set forth on Schedule III, the Company has not made and will not make any communication relating to the Securities that would constitute a Testing-the-Waters Communication, except in accordance with the provisions of Section 2(a)(iv) of this Agreement.

(vii) *The Underwriting Agreement.* This Agreement has been duly authorized, executed and delivered by the Company.

(viii) *Authorization of the Securities.* The Securities have been duly authorized for issuance and sale pursuant to this Agreement and, when issued and delivered by the Company against payment therefor pursuant to this Agreement, will be validly issued, fully paid and nonassessable, and the issuance and sale of the Securities is not subject to any preemptive rights, rights of first refusal or other similar rights to subscribe for or purchase the Securities except for such rights as have been duly waived.

(ix) *Applicable Registration or Other Similar Rights.* There are no persons with registration or other similar rights to have any equity or debt securities registered for sale under the Registration Statement or included in the offering contemplated by this Agreement, except for such rights as have been complied with or duly waived.

(x) *No Material Adverse Change.* Except as otherwise disclosed in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus, subsequent to the respective dates as of which information is given in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus: (i) there has been no material adverse change, or any development that would reasonably be expected to result in a material adverse change, in the condition, financial or otherwise, or in the earnings, business, properties, operations, assets, liabilities or prospects, whether or not arising from transactions in the ordinary course of business, of the Company (any such change being referred to herein as a



“*Material Adverse Change*”); (ii) the Company has not incurred any material liability or obligation, indirect, direct or contingent, including without limitation any losses or interference with its business from fire, explosion, flood, earthquakes, accident or other calamity, whether or not covered by insurance, or from any strike, labor dispute or court or governmental action, order or decree, that are material, individually or in the aggregate, to the Company or has entered into any transactions not in the ordinary course of business; and (iii) there has not been any material decrease in the capital stock or any material increase in any short-term or long-term indebtedness of the Company and there has been no dividend or distribution of any kind declared, paid or made by the Company or any repurchase or redemption by the Company of any class of capital stock.

(xi) *Independent Accountants.* Ernst & Young LLP, which has expressed its opinion with respect to the financial statements (which term as used in this Agreement includes the related notes thereto) included or incorporated by reference in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus, is (i) an independent registered public accounting firm as required by the Securities Act and the rules of the Public Company Accounting Oversight Board (“*PCAOB*”), (ii) in material compliance with the applicable requirements relating to the qualification of accountants under Rule 2-01 of Regulation S-X under the Securities Act and (iii) a registered public accounting firm as defined by the PCAOB whose registration has not been suspended or revoked and who has not requested such registration to be withdrawn.

(xii) *Financial Statements.* The financial statements included, incorporated or to be incorporated in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus present fairly the financial position of the Company as of the dates indicated and the results of their operations, changes in stockholders’ equity and cash flows for the periods specified. Such financial statements have been prepared in conformity with generally accepted accounting principles as applied in the United States applied on a consistent basis throughout the periods involved, except as may be expressly stated in the related notes thereto. No other financial statements or supporting schedules are required to be included in the Registration Statement, the Time of Sale Disclosure Package or the Prospectus. The financial data set forth in each of the Registration Statement, the Time of Sale Disclosure Package and the Prospectus fairly present, in all material respects, the information set forth therein on a basis consistent with that of the audited financial statements contained in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus. Any disclosures contained in the Registration Statement, the Time of Sale Disclosure Package or the Prospectus and any free writing prospectus, that constitute non-GAAP financial measures (as defined by the rules and regulations under the Securities Act and the Exchange Act) comply with Regulation G under the Exchange Act and Item 10 of Regulation S-K under the Securities Act, as applicable. To the Company’s knowledge, no person who has been suspended or barred from being associated with a registered public accounting firm, or who has failed to comply with any sanction pursuant to Rule 5300 promulgated by the PCAOB, has participated in or otherwise aided the preparation of, or audited, the financial statements, supporting schedules or other financial data filed with the Commission as part of the Registration Statement, the Time of Sale Disclosure Package and the Prospectus. The interactive data in eXtensible Business Reporting Language included or incorporated by

reference in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus fairly presents the information called for in all material respects and has been prepared in accordance with the Commission's rules and guidelines applicable thereto.

(xiii) Company's Accounting Systems. The Company makes and keeps accurate books and records and maintains a system of internal accounting controls designed to provide reasonable assurance that: (i) transactions are executed in accordance with management's general or specific authorization; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles as applied in the United States and to maintain accountability for assets; (iii) access to assets is permitted only in accordance with management's general or specific authorization; and (iv) the recorded accountability for assets is compared with existing assets at reasonable intervals and appropriate action is taken with respect to any differences.

(xiv) Disclosure Controls and Procedures; Deficiencies in or Changes to Internal Control Over Financial Reporting. The Company has established and maintains disclosure controls and procedures (as defined in Rules 13a-15 and 15d-15 under the Exchange Act), which (i) are designed to ensure that material information relating to the Company, is made known to the Company's principal executive officer and its principal financial officer by others within those entities and (ii) are effective in all material respects to perform the functions for which they were established. Since the end of the Company's most recent audited fiscal year, there have been no significant deficiencies or material weakness in the Company's internal control over financial reporting (whether or not remediated) and no change in the Company's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting. The Company is not aware of any change in its internal control over financial reporting that has occurred during its most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

(xv) Incorporation and Good Standing of the Company. The Company has been duly incorporated and is validly existing as a corporation in good standing under the laws of the jurisdiction of its incorporation and has the corporate power and authority to own, lease and operate its properties and to conduct its business as described in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus and to enter into and perform its obligations under this Agreement. The Company is duly qualified as a foreign corporation to transact business and is in good standing in the State of Michigan and each other jurisdiction in which such qualification is required, whether by reason of the ownership or leasing of property or the conduct of business, except where the failure to so qualify or to be in good standing would not reasonably be expected, individually or in the aggregate, to have a material adverse effect on the condition (financial or other), earnings, business, properties, operations, assets, liabilities or prospects of the Company (a "**Material Adverse Effect**").

(xvi) Subsidiaries. The Company does not own or control, directly or indirectly, any corporation, association or other entity.

( x v i i ) Capitalization and Other Capital Stock Matters. The authorized, issued and outstanding capital stock of the Company is as set forth in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus (other than for subsequent issuances, if any, pursuant to employee benefit plans, upon the exercise of outstanding options, or as otherwise described in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus). All of the issued and outstanding Securities have been duly authorized and validly issued, are fully paid and non-assessable and have been issued in compliance with all federal and state securities laws, except where such noncompliance would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect. None of the outstanding Securities was issued in violation of any preemptive rights, rights of first refusal or other similar rights to subscribe for or purchase securities of the Company. There are no authorized or outstanding options, warrants, preemptive rights, rights of first refusal or other rights to purchase, or equity or debt securities convertible into or exchangeable or exercisable for, any capital stock of the Company other than those described in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus. The descriptions of the Company's stock option and other stock plans or arrangements, and the options or other rights granted thereunder, set forth in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus accurately and fairly presents in all material respects the information required to be shown with respect to such plans, arrangements, options and rights.

(xviii) Stock Exchange Listing. The Company will use its reasonable best efforts to cause the Securities to be listed on The NASDAQ Global Market (the "**Exchange**").

(xix) Non-Contravention of Existing Instruments; No Further Authorizations or Approvals Required. The Company is not in violation of its charter or by-laws, or in default (or, with the giving of notice or lapse of time, would be in default) ("**Default**") under any indenture, loan, credit agreement, note, lease, license agreement, contract, franchise or other instrument (including, without limitation, any pledge agreement, security agreement, mortgage or other instrument or agreement evidencing, guaranteeing, securing or relating to indebtedness) to which the Company is a party or by which it may be bound, or to which any of its properties or assets are subject (each, an "**Existing Instrument**"), except for such Defaults as would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect. The Company's execution, delivery and performance of this Agreement, consummation of the transactions contemplated hereby and by the Registration Statement, the Time of Sale Disclosure Package and the Prospectus and the issuance and sale of the Securities (i) have been duly authorized by all necessary corporate action and will not result in any violation of the provisions of the charter or by-laws of the Company (ii) will not conflict with or constitute a breach of, or Default or a Debt Repayment Triggering Event under, or result in the creation or imposition of any lien, charge or encumbrance upon any property or assets of the Company pursuant to, or require the consent of any other party to, any Existing Instrument and (iii) will not result in any violation of any law, administrative regulation or administrative or court decree applicable to the Company, except for such conflicts,

breaches, Defaults, Debt Repayment Triggering Events, liens, charges, encumbrances or violations that would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Effect. To the Company's knowledge, no consent, approval, authorization or other order of, or registration or filing with, any court or other governmental or regulatory authority or agency, is required for the Company's execution, delivery and performance of this Agreement and consummation of the transactions contemplated hereby and by the Registration Statement, the Time of Sale Disclosure Package and the Prospectus, except such as have been obtained or made by the Company and are in full force and effect under the Securities Act and such as may be required under applicable state securities or blue sky laws, FINRA or the Exchange. As used herein, a "***Debt Repayment Triggering Event***" means any event or condition which gives, or with the giving of notice or lapse of time would give, the holder of any note, debenture or other evidence of indebtedness (or any person acting on such holder's behalf) the right to require the repurchase, redemption or repayment of all or a portion of such indebtedness by the Company.

(xx) *Compliance with Laws.* The Company has been and is in compliance with all applicable laws, rules and regulations, except where failure to be so in compliance would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect.

(xxi) *No Material Actions or Proceedings.* There is no action, suit, proceeding, inquiry or investigation brought by or before any governmental entity now pending or, to the knowledge of the Company, threatened, against or affecting the Company, which would reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect or materially and adversely affect the consummation of the transactions contemplated by this Agreement or the performance by the Company of its obligations hereunder; and the aggregate of all pending legal or governmental proceedings to which the Company is a party or of which any of its properties or assets is the subject, including ordinary routine litigation incidental to the business, if determined adversely to the Company, would not reasonably be expected to have a Material Adverse Effect. No material labor dispute with the employees of the Company, or with the employees of any principal supplier, manufacturer, customer or contractor of the Company, exists or, to the knowledge of the Company, is threatened or imminent.

( x x i i ) *Intellectual Property Rights.* 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 Registration Statement, the Time of Sale Disclosure Package and the Prospectus 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 Registration Statement, the Time of Sale Disclosure Package and the Prospectus: (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 Registration Statement, the Time of Sale Disclosure Package and the Prospectus 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, 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 Registration Statement, the Time of Sale Disclosure Package or the Prospectus 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 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 Registration Statement, the Time of Sale Disclosure Package and the Prospectus 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.

(xxiii) All Necessary Permits, etc. The Company possesses such valid and current certificates, authorizations or permits required by state, federal or foreign regulatory agencies or bodies to conduct its business as currently conducted and as described in the Registration Statement, the Time of Sale Disclosure Package or the Prospectus ("**Permits**"), except where the failure to so possess or comply would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Effect. The Company is not in violation of, or in default under, any of the Permits and has not received any notice of proceedings relating to the revocation or modification of, or non-compliance with, any such certificate, authorization or permit, except where such violation, default, revocation, modification or non-compliance would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Effect.

(xxiv) Title to Properties. The Company has good and marketable title to all of the real and personal property and other assets reflected as owned in the financial statements referred to in Section 2(a)(xii) above (or elsewhere in the Registration Statement, the Time of Sale Disclosure Package or the Prospectus), in each case free and clear of any security interests, mortgages, liens, encumbrances, equities, adverse claims and other defects, except as would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect. The real property, improvements, equipment and personal property held under lease by the Company are held under valid and enforceable leases, with such exceptions as are not material and do not materially interfere with the use made or proposed to be made of such real property, improvements, equipment or personal property by the Company.

(xxv) Tax Law Compliance. The Company has filed all necessary federal, state and foreign income and franchise tax returns or has properly requested extensions thereof

and has paid all taxes required to be paid by it and, if due and payable, any related or similar assessment, fine or penalty levied against it except as may be being contested in good faith and by appropriate proceedings. The Company has made adequate charges, accruals and reserves in the applicable financial statements referred to in Section 2(a)(xii) above in respect of all federal, state and foreign income and franchise taxes for all periods as to which the tax liability of the Company has not been finally determined.

(xxvi) Insurance. The Company is insured by recognized, financially sound and reputable institutions with policies in such amounts and with such deductibles and covering such risks as are generally deemed adequate and customary for their businesses including, but not limited to, policies covering real and personal property owned or leased by the Company against theft, damage, destruction, acts of vandalism and earthquakes and policies covering the Company for product liability claims and clinical trial liability claims. The Company has no reason to believe that it will not be able (i) to renew its existing insurance coverage as and when such policies expire or (ii) to obtain comparable coverage from similar institutions as may be necessary or appropriate to conduct its business as now conducted and at a cost that would not reasonably be expected to have a Material Adverse Effect. The Company has not been denied any insurance coverage which it has sought or for which it has applied.

(xxvii) Compliance with Environmental Laws. Except as would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect: (i) the Company is not in violation of any federal, state, local or foreign statute, law, rule, regulation, ordinance, code, policy or rule of common law or any judicial or administrative interpretation thereof, including any judicial or administrative order, consent, decree or judgment, relating to pollution or protection of human health, the environment (including, without limitation, ambient air, surface water, groundwater, land surface or subsurface strata) or wildlife, including, without limitation, laws and regulations relating to the release or threatened release of chemicals, pollutants, contaminants, wastes, toxic substances, hazardous substances, petroleum or petroleum products (collectively, "**Hazardous Materials**") or to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of Hazardous Materials (collectively, "**Environmental Laws**"); (ii) the Company has all permits, authorizations and approvals required under any applicable Environmental Laws and is in compliance with their requirements; (iii) there are no pending or, to the Company's knowledge, threatened administrative, regulatory or judicial actions, suits, demands, demand letters, claims, liens, notices of noncompliance or violation, investigation or proceedings relating to any Environmental Law against the Company; and (iv) to the Company's knowledge, there are no events or circumstances that would reasonably be expected to form the basis of an order for clean-up or remediation, or an action, suit or proceeding by any private party or governmental body or agency, against or affecting the Company relating to Hazardous Materials or any Environmental Laws.

(xxviii) ERISA Compliance. The Company and any "employee benefit plan" (as defined under the Employee Retirement Income Security Act of 1974, as amended, and the regulations and published interpretations thereunder (collectively, "**ERISA**")) established or maintained by the Company or its "ERISA Affiliates" 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.

(xxix) *Investment Company Act.* The Company is not, and will not be, either after receipt of payment for the Securities or after the application of the proceeds therefrom as described under “Use of Proceeds” in the Registration Statement, the Time of Sale Disclosure Package or the Prospectus, required to register as an “investment company” under the Investment Company Act of 1940, as amended (the “*Investment Company Act*”).

(xxx) *Eligibility to use Form S-3.* The conditions for use of Form S-3, set forth in the General Instructions thereto, including but not limited to General Instruction I.B. 1, have been satisfied.

(xxxix) *No Price Stabilization or Manipulation; Compliance with Regulation M.* The Company has not taken, directly or indirectly, any action designed to or that would reasonably be expected to cause or result in stabilization or manipulation of the price of the Securities or of any “reference security” (as defined in Rule 100 of Regulation M under the Exchange Act (“*Regulation M*”)) with respect to the Securities, whether to facilitate the sale or resale of the Securities or otherwise, and has taken no action which would directly or indirectly violate Regulation M.

(xxxii) *Related-Party Transactions.* There are no business relationships or related-party transactions involving the Company or any other person required to be described in the Registration Statement, the Time of Sale Disclosure Package or the Prospectus that have not been described as required.

(xxxiii) *FINRA Matters.* All of the information provided to the Underwriters or to counsel for the Underwriters by the Company, its counsel, its officers and directors and, to the knowledge of the Company, the holders of any securities (debt or equity) or options to acquire any securities of the Company in connection with the offering of the Securities is true, complete, correct and compliant in all material respects with FINRA’s rules and any letters, filings or other supplemental information provided to FINRA by the Company, its counsel,

its officers and directors and, to the knowledge of the Company, the holders of any securities or options to acquire any securities of the Company pursuant to FINRA Rules or NASD Conduct Rules is true, complete and correct in all material respects.

(xxxiv) Statistical and Market-Related Data. All statistical, demographic and market-related data included in the Registration Statement, the Time of Sale Disclosure Package or the Prospectus are based on or derived from sources that the Company believes, after reasonable inquiry, to be reliable and accurate in all material respects. To the extent required, the Company has obtained the written consent to the use of such data from such sources.

(xxxv) No Unlawful Contributions or Other Payments. Neither the Company nor, to the Company's knowledge, any employee or agent of the Company, has made any contribution or other payment to any official of, or candidate for, any federal, state or foreign office in violation of any applicable law or of the character required to be disclosed in the Registration Statement, the Time of Sale Disclosure Package or the Prospectus.

(xxxvi) Brokers. Except pursuant to this Agreement, there is no broker, finder or other party that is entitled to receive from the Company any brokerage or finder's fee or other fee or commission as a result of any transactions contemplated by this Agreement.

(xxxvii) Forward-Looking Statements. Each financial or operational projection or other "forward-looking statement" (as defined by Section 27A of the Securities Act or Section 21E of the Exchange Act) contained in the Registration Statement, the Time of Sale Disclosure Package or the Prospectus (i) was so included by the Company in good faith and with reasonable basis after due consideration by the Company of the underlying assumptions, estimates and other applicable facts and circumstances and (ii) is accompanied by meaningful cautionary statements identifying those factors that could cause actual results to differ materially from those in such forward-looking statement. No such statement was made with the knowledge of an executive officer or director of the Company that it was false or misleading.

(xxxviii) No Outstanding Loans or Other Extensions of Credit. The Company does not have any outstanding extension of credit, in the form of a personal loan, to or for any director or executive officer (or equivalent thereof) of the Company except for such extensions of credit as are expressly permitted by Section 13(k) of the Exchange Act.

(xxxix) 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 Registration Statement, the Time of Sale Disclosure Package or the Prospectus 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 Registration Statement, the Time of Sale Disclosure Package or the Prospectus; 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 by 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 Effect; the Company has not received any notice of, or correspondence from, any Regulatory Agency which would reasonably be expected to lead to the termination, suspension or modification of any clinical trials that are described or referred to in the Registration Statement, the Time of Sale Disclosure Package or the Prospectus; and the Company has operated and currently is in compliance in all material respects with all applicable rules, regulations and policies of the Regulatory Agencies.

(xl) 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 Effect, 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.

(xli) No Contract Terminations. The Company has not sent or received any communication regarding termination of, or intent not to renew, any of the contracts or agreements referred to or described in any the Prospectus or any free writing prospectus, or referred to or described in, or filed as an exhibit to, the Registration Statement, and no such termination or non-renewal has been threatened by the Company or, to the Company's knowledge, any other party to any such contract or agreement, which threat of termination or non-renewal has not been rescinded as of the date hereof.

(xlii) Sarbanes-Oxley Compliance. There is and has been no failure on the part of the Company or, to the knowledge of the Company, any of the Company's directors or officers, in their capacities as such, to comply with any provision of the Sarbanes-Oxley Act of 2002 and the rules and regulations promulgated in connection therewith that are applicable to the Company or its directors or officers in their capacities as directors or officers of the Company.

(xliii) No Integration. The Company has not sold or issued any securities that would be integrated with the offering of the Securities contemplated by this Agreement pursuant to the Securities Act or the interpretations thereof by the Commission.

( x l i v ) Exchange Act Registration and Listing of the Common Stock. The shares of Common Stock are registered pursuant to Section 12(b) of the Exchange Act and listed on the Exchange; the Company has taken no action designed to, or reasonably likely to have the effect of, terminating the registration of the Common Stock under the Exchange Act or delisting the Common Stock from the Exchange, nor has the Company received any notification that the Commission or the Exchange is contemplating terminating such registration or listing.

(xlv) No Unlawful Payments. Neither the Company nor, to the knowledge of the Company, any director, officer, agent, employee or other person associated with or

acting on behalf of the Company, has (i) used any corporate funds for any unlawful contribution, gift, entertainment or other unlawful expense relating to political activity; (ii) made any direct or indirect unlawful payment to any foreign or domestic government official or employee from corporate funds; (iii) violated or is in violation of any provision of the U.S. Foreign Corrupt Practices Act of 1977, the Organization for Economic Co-operation and Development Convention on Bribery of Foreign Public Officials in International Business Transactions, and the rules and regulations thereunder and any other similar foreign or domestic law or regulation; or (iv) made any bribe, rebate, payoff, influence payment, kickback or other unlawful payment. The Company has instituted and maintains policies and procedures designed to ensure continued compliance with the laws and regulations referenced in clause (iii) of this paragraph.

(xlv i) Anti-Money Laundering Compliance. The operations of the Company are and have been conducted at all times in compliance with applicable financial recordkeeping and reporting requirements 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 applicable related or similar 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 knowledge of the Company, threatened.

(xlvii) OFAC Compliance. Neither the Company nor, to the knowledge of the Company, any director, officer, agent, employee or affiliate 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 offering, or lend, contribute or otherwise make available such proceeds to any joint venture partner or other person or entity, for the purpose of financing the activities of any person currently subject to any U.S. sanctions administered by OFAC.

(xlviii) No Taxes or Fees Due Upon Issuance. No stamp, issue, registration, documentary, transfer or other similar taxes and duties, including interest and penalties, are payable on or in connection with the issuance and sale of the Securities by the Company or the execution and delivery of this Agreement.

(xlix) No Legal, Accounting or Tax Advice. The Company has not relied upon the Underwriters or legal counsel for the Underwriters for any legal, tax or accounting advice in connection with the offering and sale of the Securities.

(b) Effect of Certificates. Any certificate signed by any officer of the Company and delivered to you or to counsel for the Underwriters in connection with the offering of the Securities shall be deemed a representation and warranty by the Company to each Underwriter as to the matters covered thereby.

3. ***Purchase, Sale and Delivery of Securities.***

(a) ***Firm Shares.*** On the basis of the representations, warranties and agreements herein contained, but subject to the terms and conditions herein set forth, the Company agrees to issue and sell the Firm Shares to the several Underwriters, and each Underwriter agrees, severally and not jointly, to purchase from the Company the number of Firm Shares set forth opposite the name of such Underwriter in Schedule I hereto. The purchase price for each Firm Share shall be \$6.51 per share. The obligation of each Underwriter to the Company shall be to purchase from the Company that number of Firm Shares set forth opposite the name of such Underwriter in Schedule I hereto. In making this Agreement, each Underwriter is contracting severally and not jointly; except as provided in paragraph (d) of this Section 3 and in Section 8 hereof, to purchase only the respective number of Firm Shares specified in Schedule I.

The Firm Shares will be delivered by the Company to you for the accounts of the several Underwriters against payment of the purchase price therefor by wire transfer of same day funds payable to the order of the Company, as appropriate, at the offices of Piper Jaffray & Co., U.S. Bancorp Center, 800 Nicollet Mall, Minneapolis, Minnesota, or such other location as may be mutually acceptable, at 9:00 a.m. Central time on the second (or if the Securities are priced, as contemplated by Rule 15c6-1(c) under the Exchange Act, after 4:30 p.m. Eastern time, the third) full business day following the date hereof, or at such other time and date as you and the Company determine pursuant to Rule 15c6-1(a) under the Exchange Act, such time and date of delivery being herein referred to as the ***“First Closing Date.”***

(b) ***Option Shares.*** On the basis of the representations, warranties and agreements herein contained, but subject to the terms and conditions herein set forth, the Company hereby grants to the several Underwriters an option to purchase all or any portion of the Option Shares at the same purchase price as the Firm Shares. The option granted hereunder may be exercised in whole or in part at any time (but not more than once) within 30 days after the effective date of this Agreement upon notice (confirmed in writing) by the Representative to the Company setting forth the aggregate number of Option Shares as to which the several Underwriters are exercising the option, the names and denominations in which the certificates for the Option Shares are to be registered and the date and time, as determined by you, when the Option Shares are to be delivered, such time and date being herein referred to as the ***“Second Closing”*** and ***“Second Closing Date”***, respectively; provided, however, that the Second Closing Date shall not be earlier than the First Closing Date nor earlier than the second business day after the date on which the option shall have been exercised. The number of Option Shares to be purchased by each Underwriter shall be the same percentage of the total number of Option Shares to be purchased by the several Underwriters as the number of Firm Shares to be purchased by such Underwriter is of the total number of Firm Shares to be purchased by the several Underwriters, as adjusted by the Representative in such manner as the Representative deems advisable to avoid fractional shares. No Option Shares shall be sold and delivered unless the Firm Shares previously have been, or simultaneously are, sold and delivered.

The Option Shares will be delivered by the Company, as appropriate, to you for the accounts of the several Underwriters against payment of the purchase price therefor by wire transfer of same day funds payable to the order of the Company, as appropriate, at the offices of Piper Jaffray

& Co., U.S. Bancorp Center, 800 Nicollet Mall, Minneapolis, Minnesota, or such other location as may be mutually acceptable at 9:00 a.m., Central time, on the Second Closing Date.

(c) Delivery. Delivery of the Firm Shares or the Option Shares shall be made by electronic book-entry through full fast transfer to the accounts at DTC designated by the Representative, unless the Representative shall otherwise instruct.

(d) Purchase by Representative on Behalf of Underwriters. It is understood that you, individually and not as Representative of the several Underwriters, may (but shall not be obligated to) make payment to the Company, on behalf of any Underwriter for the Securities to be purchased by such Underwriter. Any such payment by you shall not relieve any such Underwriter of any of its obligations hereunder.

#### 4. **Covenants.**

(a) Covenants of the Company. The Company covenants and agrees with the several Underwriters as follows:

(i) Required Filings. During the period beginning on the date hereof and ending on the later of the Second Closing Date or such date, as in the opinion of counsel for the Underwriters, the Prospectus is no longer required by law to be delivered (assuming the absence of Rule 172 under the Securities Act), in connection with sales by an Underwriter or dealer (the "**Prospectus Delivery Period**"), prior to amending or supplementing the Registration Statement( including any Rule 462(b) Registration Statement), the Time of Sale Disclosure Package or the Prospectus, the Company shall furnish to the Representative for review a copy of each such proposed amendment or supplement, and the Company shall not file any such proposed amendment or supplement to which the Representative or counsel to the Underwriters reasonably object. Subject to this Section 4(a)(i), immediately following execution of this Agreement, the Company will prepare the Prospectus containing the Rule 430B Information and other selling terms of the Securities, the plan of distribution thereof and such other information as may be required by the Securities Act or the Rules and Regulations or as the Representative and the Company may deem appropriate, and if requested by the Representative, an issuer free writing prospectus containing the selling terms of the Securities and such other information as the Company and the Representative may deem appropriate, and will file or transmit for filing with the Commission, in accordance with Rule 424(b) or Rule 433, as the case may be, copies of the Prospectus and each issuer free writing prospectus.

(ii) Notification of Certain Commission Actions. After the date of this Agreement, the Company shall promptly advise the Representative in writing (A) of the receipt of any comments of, or requests for additional or supplemental information from, the Commission, (B) of the time and date of any filing of any post-effective amendment to the Registration Statement or any amendment or supplement to any Preliminary Prospectus, the Time of Sale Disclosure Package or the Prospectus, (C) of the time and date that any post-effective amendment to the Registration Statement becomes effective, (D) of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or any post-effective amendment thereto or of any order preventing or suspending its use or

the use of any Preliminary Prospectus, the Time of Sale Disclosure Package, the Prospectus or any issuer free writing prospectus, or (E) of any proceedings to remove, suspend or terminate from listing or quotation the Common Stock from any securities exchange upon which it is listed for trading or included or designated for quotation, or of the threatening or initiation of any proceedings for any of such purposes. If the Commission shall enter any such stop order at any time, the Company will use its best efforts to obtain the lifting of such order as soon as reasonably practicable. Additionally, the Company agrees that it shall comply with the provisions of Rules 424(b), 430A and 430B, as applicable, under the Securities Act and will use its reasonable efforts to confirm that any filings made by the Company under Rule 424(b), Rule 433 or Rule 462 were received in a timely manner by the Commission (without reliance on Rule 424(b)(8) or Rule 164(b)).

(iii) Continued Compliance with Securities Laws. (A) During the Prospectus Delivery Period, the Company will comply as far as it is able with all requirements imposed upon it by the Securities Act, as now and hereafter amended, and by the Rules and Regulations, as from time to time in force, and by the Exchange Act so far as necessary to permit the continuance of sales of or dealings in the Securities as contemplated by the provisions hereof, the Time of Sale Disclosure Package and the Prospectus. If during such period any event occurs as a result of which the Prospectus (or if the Prospectus is not yet available to prospective purchasers, the Time of Sale Disclosure Package) would include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances then existing, not misleading, or if during such period it is necessary or appropriate in the opinion of the Company or its counsel or the Representative or counsel to the Underwriters to amend the Registration Statement or supplement the Prospectus (or, if the Prospectus is not yet available to prospective purchasers, the Time of Sale Disclosure Package) to comply with the Securities Act or to file under the Exchange Act any document which would be deemed to be incorporated by reference in the Prospectus in order to comply with the Securities Act or the Exchange Act, the Company promptly will (x) notify you of such untrue statement or omission, (y) amend the Registration Statement or supplement the Prospectus (or, if the Prospectus is not yet available to prospective purchasers, the Time of Sale Disclosure Package) or file such document (at the expense of the Company) so as to correct such statement or omission or effect such compliance, and (z) notify you when any amendment to the Registration Statement is filed or becomes effective or when any supplement to the Prospectus (or, if the Prospectus is not yet available to prospective purchasers, the Time of Sale Disclosure Package) is filed.

(B) If at any time following issuance of an issuer free writing prospectus there occurred or occurs an event or development as a result of which such issuer free writing prospectus conflicted or would conflict with the information contained in the Registration Statement, the Preliminary Prospectus or the Prospectus or included or would include an untrue statement of a material fact or omitted or would omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances prevailing at that subsequent time, not misleading, the Company (x) has promptly notified or promptly will notify the Representative of such conflict, untrue statement or omission, (y) has promptly amended or will promptly amend or supplement, at its own expense, such issuer free writing prospectus to eliminate or correct such conflict, untrue statement or

omission, and (2) has notified or promptly will notify you when such amendment or supplement was or is filed with the Commission where required to be filed by the Rules and Regulations.

(C) If immediately prior to the third anniversary of the initial effective date of the Registration Statement, any of the Securities remain unsold by the Underwriters, the Company will prior to that third anniversary file, if it has not already done so, a new shelf registration statement relating to the Securities, in a form satisfactory to the Representative, and will use its best efforts to cause such registration statement to be declared effective within 180 days after that third anniversary, and will take all other action necessary or appropriate to permit the public offering and sale of the Securities to continue as contemplated in the expired registration statement relating to the Securities. References herein to the Registration Statement shall include such new shelf registration statement.

(iv) Blue Sky Qualifications. The Company shall take or cause to be taken all necessary action to qualify the Securities for sale under the securities laws of such jurisdictions as you reasonably designate and to continue such qualifications in effect so long as required for the distribution of the Securities, except that the Company shall not be required in connection therewith to qualify as a foreign corporation, subject itself to taxation or to execute a general consent to service of process in any state.

(v) Provision of Documents. The Company will furnish, at its own expense, to the Underwriters and counsel for the Underwriters copies of the Registration Statement (which will include a complete electronic manually signed copy of the Registration Statement and all consents and exhibits filed therewith), and to the Underwriters and any dealer each Preliminary Prospectus, the Time of Sale Disclosure Package, the Prospectus, any issuer free writing prospectus, and all amendments and supplements to such documents, in each case as soon as available and in such quantities as you may from time to time reasonably request.

(vi) Rule 158. The Company will make generally available to its security holders as soon as practicable, but in no event later than 15 months after the end of the Company's current fiscal quarter, an earnings statement (which need not be audited) covering a 12-month period that shall satisfy the provisions of Section 11(a) of the Securities Act and Rule 158 promulgated thereunder.

(vii) Payment and Reimbursement of Expenses. The Company, whether or not the transactions contemplated hereunder are consummated or this Agreement is terminated, will pay or cause to be paid (A) all expenses (including transfer taxes allocated to the respective transferees) incurred in connection with the delivery to the Underwriters of the Securities, (B) all expenses and fees (including, without limitation, fees and expenses of the Company's accountants and counsel but, except as otherwise provided below, not including fees of the Underwriters' counsel) in connection with the preparation, printing, filing, delivery, and shipping of the Registration Statement (including the financial statements therein and all amendments, schedules, and exhibits thereto), the Securities, each Preliminary Prospectus, the Time of Sale Disclosure Package, the Prospectus, any issuer free writing prospectus and any amendment thereof or supplement thereto, and the printing, delivery, and shipping of this Agreement and other underwriting documents, including blue sky

memoranda (covering the states and other applicable jurisdictions), (C) all reasonable and documented fees and disbursements of the Underwriters' counsel incurred in connection with the offering of the Securities and all filing fees and reasonable and documented fees and disbursements of the Underwriters' counsel incurred in connection with the qualification of the Securities for offering and sale by the Underwriters or by dealers under the securities or blue sky laws of the states and other jurisdictions which you shall designate, (D) the fees and expenses of any transfer agent or registrar, (E) the filing fees and fees and disbursements of Underwriters' counsel incident to any required review and approval by FINRA of the terms of the sale of the Securities, (F) listing fees, if any, (G) the cost and expenses of the Company relating to investor presentations or any "roadshow" undertaken in connection with marketing of the Securities, and (H) all other costs and expenses of the Company incident to the performance of its obligations hereunder that are not otherwise specifically provided for herein; provided, however, that the total fees and disbursement of Underwriters' counsel pursuant to (C) and (E) above shall not exceed \$150,000 in the aggregate. If this Agreement is terminated by the Representative pursuant to Section 9 hereof or if the sale of the Securities provided for herein is not consummated by reason of any failure, refusal or inability on the part of the Company to perform any agreement on its or their part to be performed, or because any other condition of the Underwriters' obligations hereunder required to be fulfilled by the Company is not fulfilled, the Company will reimburse the several Underwriters for all reasonable out-of-pocket fees and disbursements of Underwriters' counsel actually incurred, in connection with their investigation, preparing to market and marketing the Securities or in contemplation of performing their obligations hereunder.

(viii) Use of Proceeds. The Company will apply the net proceeds from the sale of the Securities to be sold by it hereunder for the purposes set forth in the Time of Sale Disclosure Package and in the Prospectus.

(ix) Company Lock Up. The Company will not, without the prior written consent of Piper Jaffray & Co., from the date of execution of this Agreement and continuing to and including the date 90 days after the date of the Prospectus (the "Lock-Up Period"), (A) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into or exercisable or exchangeable for Common Stock or (B) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the Common Stock, whether any such transaction described in clause (A) or (B) above is to be settled by delivery of Common Stock or such other securities, in cash or otherwise, except (A) to the Underwriters pursuant to this Agreement (B) the issuance by the Company of shares of Common Stock upon the exercise of any stock options or warrants, or upon the conversion of any shares of preferred stock of the Company, outstanding as of the date hereof and disclosed in the Registration Statement, the Time of Sale Disclosure Package or the Prospectus; (C) the issuance by the Company of shares of Common Stock or securities convertible into shares of Common Stock pursuant to the Company's equity incentive plans in effect on the date hereof and described in the Registration Statement, the Time of Sale Disclosure Package or the Prospectus; or (D) the filing of a registration statement on Form S-8 with respect to the Company's equity incentive



plans in effect on the date hereof and described in the Registration Statement, the Time of Sale Disclosure Package or the Prospectus. The Company agrees not to accelerate the vesting of any option or warrant or the lapse of any repurchase right prior to the expiration of the Lock-Up Period.

(x) Stockholder Lock-Ups. The Company has caused to be delivered to you prior to the date of this Agreement a letter, in the form of Exhibit A hereto (the "**Lock-Up Agreement**"), from each individual or entity listed on Schedule IV. The Company will enforce the terms of each Lock-Up Agreement and issue stop-transfer instructions to the transfer agent and registrar for the Common Stock with respect to any transaction or contemplated transaction that would constitute a breach of or default under the applicable Lock-Up Agreement.

(xi) No Market Stabilization or Manipulation. The Company has not taken and will not take, directly or indirectly, any action designed to or which might reasonably be expected to cause or result in, or which constitutes, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Securities

(xii) SEC Reports. During the Prospectus Delivery Period, the Company will file on a timely basis with the Commission such periodic and special reports as required by the Rules and Regulations.

(xiii) Internal Controls. The Company will maintain such controls and other procedures, including without limitation those required by Sections 302 and 906 of the Sarbanes-Oxley Act and the applicable regulations thereunder, that are designed to ensure that information required to be disclosed by the Company in the reports that 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, including without limitation, controls and procedures designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the Company's management, including its principal executive officer and its principal financial officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure, to ensure that material information relating to Company is made known to them by others within the Company.

(xiv) Sarbanes-Oxley. The Company and its subsidiaries will comply with all applicable provisions of the Sarbanes-Oxley Act.

(xv) Free Writing Prospectuses. The Company represents and agrees that, unless it obtains the prior written consent of the Representative, and each Underwriter severally represents and agrees that, unless it obtains the prior written consent of the Company and the Representative, it has not made and will not make any offer relating to the Securities that would constitute an issuer free writing prospectus or that would otherwise constitute a free writing prospectus required to be filed with the Commission; provided that the prior written consent of the parties hereto shall be deemed to have been given in respect of the free writing prospectuses included in Schedule II. Any such free writing prospectus consented to by the Company and the Representative is hereinafter

referred to as a “*Permitted Free Writing Prospectus*.” The Company represents that it has treated or agrees that it will treat each Permitted Free Writing Prospectus as an issuer free writing prospectus, and has complied and will comply with the requirements of Rules 164 and 433 of the Rules and Regulations applicable to any Permitted Free Writing Prospectus. The Company agrees not to take any action that would result in the Company being required to file with the Commission under Rule 433(d) a free writing prospectus prepared by or on behalf of the Company that otherwise would not be required to be filed by the Company thereunder, but for the action of the Company. Each Underwriter severally represents and agrees that, (A) unless it obtains the prior written consent of the Company and the Representative, it has not distributed, and will not distribute any Written Testing-the-Waters Communication other than those listed on Schedule III, and (B) any Testing-the-Waters Communication undertaken by it was with entities that are qualified institutional buyers with the meaning of Rule 144A under the Act or institutions that are accredited investors within the meaning of Rule 501 under the Act.

(xvi) *Emerging Growth Company*. The Company will promptly notify the Representative if the Company ceases to be an Emerging Growth Company at any time prior to the later of (A) completion of the distribution of Securities within the meaning of the Act and (B) completion of the 90-day Lock-Up Period referenced in Section 4(a)(ix) hereof.

5. ***Conditions of Underwriters’ Obligations***. The obligations of the several Underwriters hereunder are subject to the accuracy, as of the date hereof and at each of the First Closing Date and the Second Closing Date (as if made at such Closing Date), of and compliance with all representations, warranties and agreements of the Company contained herein, to the performance by the Company of its obligations hereunder and to the following additional conditions:

(a) *Required Filings; Absence of Certain Commission Actions*. If filing of the Prospectus, or any amendment or supplement thereto, or any Permitted Free Writing Prospectus, is required under the Securities Act or the Rules and Regulations, the Company shall have filed the Prospectus (or such amendment or supplement) or such Permitted Free Writing Prospectus with the Commission in the manner and within the time period so required (without reliance on Rule 424(b)(8) or Rule 164(b)); the Registration Statement shall remain effective; no stop order suspending the effectiveness of the Registration Statement or any part thereof, any Rule 462(b) Registration Statement, or any amendment thereof, nor suspending or preventing the use of the Time of Sale Disclosure Package, the Prospectus or any Permitted Free Writing Prospectus shall have been issued; no proceedings for the issuance of such an order shall have been initiated or threatened; and any request of the Commission for additional information (to be included in the Registration Statement, the Time of Sale Disclosure Package, the Prospectus, any Permitted Free Writing Prospectus or otherwise) shall have been complied with to your satisfaction.

(b) *Continued Compliance with Securities Laws*. No Underwriter shall have advised the Company that (i) the Registration Statement or any amendment thereof or supplement thereto contains an untrue statement of a material fact which, in your opinion, is material or omits to state a material fact which, in your opinion, is required to be stated therein or necessary to make the statements therein not misleading, or (ii) the Time of Sale Disclosure Package or the Prospectus, or any amendment thereof or supplement thereto, or any issuer free writing prospectus contains an untrue

statement of fact which, in your opinion, is material, or omits to state a fact which, in your opinion, is material and is required to be stated therein, or necessary to make the statements therein, in light of the circumstances under which they are made, not misleading.

(c) Absence of Certain Events. Except as contemplated in the Time of Sale Disclosure Package and in the Prospectus, subsequent to the respective dates as of which information is given in the Time of Sale Disclosure Package, neither the Company nor any of its subsidiaries shall have incurred any material liabilities or obligations, direct or contingent, or entered into any material transactions, or declared or paid any dividends or made any distribution of any kind with respect to its capital stock; and there shall not have been any change in the capital stock (other than a change in the number of outstanding shares of Common Stock due to the issuance of shares upon the exercise of outstanding options or warrants or conversion of convertible securities), or any material change in the short-term or long-term debt of the Company (other than as a result of the conversion of convertible securities), or any issuance of options, warrants, convertible securities or other rights to purchase the capital stock of the Company or any of its subsidiaries, or any Material Adverse Change or any development that would reasonably be expected to result in a Material Adverse Change (whether or not arising in the ordinary course of business), or any loss by strike, fire, flood, earthquake, accident or other calamity, whether or not covered by insurance, incurred by the Company or any subsidiary, the effect of which, in any such case described above, in your judgment, makes it impractical or inadvisable to offer or deliver the Securities on the terms and in the manner contemplated in the Time of Sale Disclosure Package and in the Prospectus.

(d) No Downgrade. On or after the Time of Sale (i) no downgrading shall have occurred in the rating accorded any of the Company's securities by any "nationally recognized statistical organization," as that term is defined by the Commission for purposes of Rule 436(g)(2) under the Securities Act, and (ii) no such organization shall have publicly announced that it has under surveillance or review, with possible negative implications, its rating of any of the Company's securities.

(e) Opinion of Company Counsel. On each Closing Date, there shall have been furnished to you, as Representative of the several Underwriters, (i) the opinion of Honigman Miller Schwartz and Cohn LLP, counsel for the Company, dated such Closing Date and addressed to you in substantially the form attached hereto as Exhibit B and (ii) the opinion of Honigman Miller Schwartz and Cohn, LLP, intellectual property and patent counsel for the Company, dated such Closing Date and addressed to you, in form and substance reasonably satisfactory to the Representative.

(f) Opinion of Underwriters' Counsel. On each Closing Date, there shall have been furnished to you, as Representative of the several Underwriters, such opinion or opinions from Cooley LLP, counsel for the several Underwriters, dated such Closing Date and addressed to you, with respect to the formation of the Company, the validity of the Securities, the Registration Statement, the Time of Sale Disclosure Package, the Prospectus and other related matters as you reasonably may request, and such counsel shall have received such papers and information as they request to enable them to pass upon such matters.

(g) Comfort Letter. On the date hereof, on the effective date of any post-effective amendment to the Registration Statement filed after the date hereof and on each Closing Date you, as Representative of the several Underwriters, shall have received an accountant's "comfort" letter of Ernst & Young LLP, dated such date and addressed to you, in form and substance satisfactory to you.

(h) Officers' Certificate. On each Closing Date, there shall have been furnished to you, as Representative of the Underwriters, a certificate, dated such Closing Date and addressed to you, signed by the chief executive officer and by the chief financial officer of the Company, to the effect that:

(i) The representations and warranties of the Company in this Agreement are true and correct as if made at and as of such Closing Date, and the Company has complied with all the agreements and satisfied all the conditions on its part to be performed or satisfied at or prior to such Closing Date;

(ii) No stop order or other order suspending the effectiveness of the Registration Statement or any part thereof or any amendment thereof or the qualification of the Securities for offering or sale, nor suspending or preventing the use of the Time of Sale Disclosure Package, the Prospectus or any issuer free writing prospectus, has been issued, and no proceeding for that purpose has been instituted or, to the best of their knowledge, is contemplated by the Commission or any state or regulatory body; and

(iii) Affirms the accuracy of the matters set forth in subsection (C) of this Section 5.

(i) Chief Financial Officer's Certificate. On each Closing Date, the Representative shall have received a certificate executed by the Chief Financial Officer of the Company, dated as of such date, in form and substance satisfactory to the Representative.

(j) Lock-Up Agreements. The Underwriters shall have received all of the Lock-Up Agreements referenced in Section 4 and the Lock-Up Agreements shall remain in full force and effect.

(k) FINRA No Objections. FINRA shall have raised no objection to the fairness and reasonableness of the underwriting terms and arrangements.

(l) Other Documents. The Company shall have furnished to you and counsel for the Underwriters such additional documents, certificates and evidence as you or they may have reasonably requested.

(m) Exchange Listing. The Securities to be delivered on such Closing Date have been approved for listing on the Exchange, subject to official notice of issuance.

All such opinions, certificates, letters and other documents will be in compliance with the provisions hereof only if they are reasonably satisfactory in form and substance to you and counsel

for the Underwriters. The Company will furnish you with such conformed copies of such opinions, certificates, letters and other documents as you shall reasonably request.

6. ***Indemnification and Contribution.***

(a) ***Indemnification by the Company.*** The Company agrees to indemnify and hold harmless each Underwriter, its affiliates, directors and officers and each person, if any, who controls such Underwriter within the meaning of Section 15 of the Act or Section 20 of the Exchange Act, from and against any losses, claims, damages or liabilities, joint or several, to which such Underwriter may become subject, under the Act or otherwise (including in settlement of any litigation if such settlement is effected with the written consent of the Company), but only insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based upon: (i) an untrue statement or alleged untrue statement of a material fact contained in the Registration Statement, including the 430A Information and any other information deemed to be a part of the Registration Statement at the time of effectiveness and at any subsequent time pursuant to the Rules and Regulations, if applicable, any Preliminary Prospectus, the Time of Sale Disclosure Package, the Prospectus, or any amendment or supplement thereto, any issuer free writing prospectus, any issuer information that the Company has filed or is required to file pursuant to Rule 433(d) of the Rules and Regulations, any roadshow materials, or any Testing-the-Waters Communication or (ii) the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, and will reimburse each Underwriter for any legal or other expenses reasonably incurred by it in connection with investigating or defending against such loss, claim, damage, liability or action as such expenses are incurred; *provided, however,* that the Company will not be liable in any such case to the extent that any such loss, claim, damage, liability or action arises out of or is based upon an untrue statement or alleged untrue statement or omission or alleged omission made in reliance upon and in conformity with written information furnished to the Company by you, or by any Underwriter through you, specifically for use in the preparation thereof; it being understood and agreed that the only information furnished by an Underwriter consists of the information described as such in Section 6(e).

(b) ***Indemnification by the Underwriters.*** Each Underwriter will, severally and not jointly, indemnify and hold harmless the Company, each of its directors and each of its officers who signs the Registration Statement and each person, if any, who controls the Company within the meaning of Section 15 of the Act and Section 20 of the Exchange Act (each, an “Agent Indemnified Party”), from and against any losses, claims, damages or liabilities to which such Agent Indemnified Party may become subject, under the Act or otherwise (including in settlement of any litigation, if such settlement is effected with the written consent of such Underwriter), insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based upon an untrue statement or alleged untrue statement of a material fact contained in the Registration Statement, any Preliminary Prospectus, the Time of Sale Disclosure Package, the Prospectus, or any amendment or supplement thereto, or any issuer free writing prospectus, or any issuer information that the Company has filed or is required to file pursuant to Rule 433(d) of the Rules and Regulations, or arise out of or are based upon the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, in each case to the extent, but only to the extent, that such untrue statement or alleged untrue statement or omission or alleged omission

was made in reliance upon and in conformity with written information furnished to the Company by you, or by such Underwriter through you, specifically for use in the preparation thereof (it being understood and agreed that the only information furnished by an Underwriter consists of the information described as such in Section 6(e)), and will reimburse such Agent Indemnified Party for any legal or other expenses reasonably incurred by the Company in connection with investigating or defending against any such loss, claim, damage, liability or action as such expenses are incurred.

(c) Notice and Procedures. Promptly after receipt by an indemnified party under subsection (a) or (b) above of notice of the commencement of any action, such indemnified party shall, if a claim in respect thereof is to be made against the indemnifying party under such subsection, notify the indemnifying party in writing of the commencement thereof; but the omission so to notify the indemnifying party shall not relieve the indemnifying party from any liability that it may have to any indemnified party except to the extent such indemnifying party has been materially prejudiced by such failure (through the forfeiture of substantive rights or defenses). In case any such action shall be brought against any indemnified party, and it shall notify the indemnifying party of the commencement thereof, the indemnifying party shall be entitled to participate in, and, to the extent that it shall wish, jointly with any other indemnifying party similarly notified, to assume the defense thereof, with counsel reasonably satisfactory to such indemnified party, and after notice from the indemnifying party to such indemnified party of the indemnifying party's election so to assume the defense thereof, the indemnifying party shall not be liable to such indemnified party under such subsection for any legal or other expenses subsequently incurred by such indemnified party in connection with the defense thereof other than reasonable costs of investigation; *provided, however*, that if, in the sole judgment of the Representative, it is advisable for the Underwriters to be represented as a group by separate counsel, the Representative shall have the right to employ a single counsel to represent the Representative and all Underwriters who may be subject to liability arising from any claim in respect of which indemnity may be sought by the Underwriters under subsection (a) of this Section 6, in which event the reasonable fees and expenses of such separate counsel shall be borne by the indemnifying party or parties and reimbursed to the Underwriters as incurred (in accordance with the provisions of Section 6(a)). An indemnifying party shall not be obligated under any settlement agreement relating to any action under this Section 6 to which it has not agreed in writing. In addition, no indemnifying party shall, without the prior written consent of the indemnified party (which consent shall not be unreasonably withheld or delayed, effect any settlement of any pending or threatened proceeding unless such settlement includes an unconditional release of such indemnified party for all liability on claims that are the subject matter of such proceeding and does not include a statement as to, or an admission of, fault, culpability or a failure to act by or on behalf of an indemnified party. Notwithstanding the foregoing, if at any time an indemnified party shall have requested an indemnifying party to reimburse the indemnified party for fees and expenses of counsel pursuant to this Section 6(c), such indemnifying party agrees that it shall be liable for any settlement effected without its written consent if (i) such settlement is entered into more than 45 days after receipt by such indemnifying party of the aforesaid request and (ii) such indemnifying party shall not have reimbursed such indemnified party in accordance with such request prior to the date of such settlement.

(d) Contribution; Limitations on Liability; Non-Exclusive Remedy. If the indemnification provided for in this Section 6 is unavailable or insufficient to hold harmless an indemnified party under subsection (a) or (b) above, then each indemnifying party shall contribute to

the amount paid or payable by such indemnified party as a result of the losses, claims, damages or liabilities referred to in subsection (a) or (b) above, (i) in such proportion as is appropriate to reflect the relative benefits received by the Company on the one hand and the Underwriters on the other from the offering of the Securities or (ii) if the allocation provided by clause (i) above is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) above but also the relative fault of the Company on the one hand and the Underwriters on the other in connection with the statements or omissions that resulted in such losses, claims, damages or liabilities, as well as any other relevant equitable considerations. The relative benefits received by the Company on the one hand and the Underwriters on the other shall be deemed to be in the same proportion as the total net proceeds from the offering (before deducting expenses) received by the Company bear to the total underwriting discounts and commissions received by the Underwriters, in each case as set forth in the table on the cover page of the Prospectus. The relative fault shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission or alleged omission to state a material fact relates to information supplied by the Company or the Underwriters and the parties' relevant intent, knowledge, access to information and opportunity to correct or prevent such untrue statement or omission. The Company and the Underwriters agree that it would not be just and equitable if contributions pursuant to this subsection (d) were to be determined by pro rata allocation (even if the Underwriters were treated as one entity for such purpose) or by any other method of allocation which does not take account of the equitable considerations referred to in the first sentence of this subsection (d). The amount paid by an indemnified party as a result of the losses, claims, damages or liabilities referred to in the first sentence of this subsection (d) shall be deemed to include any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending against any action or claim which is the subject of this subsection (d). Notwithstanding the provisions of this subsection (d), no Underwriter shall be required to contribute any amount in excess of the amount by which the total underwriting discounts and commissions received by such Underwriter with respect to the Securities purchased by it hereunder exceeds the amount of any damages that such Underwriter has otherwise been required to pay by reason of such untrue or alleged untrue statement or omission or alleged omission. No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. The Underwriters' obligations in this subsection (d) to contribute are several in proportion to their respective underwriting obligations and not joint. The remedies provided for in this Section 6 are not exclusive and shall not limit any rights or remedies that might otherwise be available to any indemnified party at law or in equity.

(e) Information Provided by the Underwriters. The Underwriters severally confirm and the Company acknowledges that the statements with respect to the public offering of the Securities by the Underwriters set forth in the Time of Sale Disclosure Package and in the Prospectus concerning the Underwriters contained in the penultimate paragraph under the heading "Discounts and Commissions", the first sentence under the heading "Price Stabilization, Short Positions and Penalty Bids" and the first three sentences under the heading "Electronic Offer, Sale and Distribution of Shares" under the caption "Underwriting," are correct and constitute the only information concerning such Underwriters furnished in writing to the Company by or on behalf of the Underwriters specifically for inclusion in the Registration Statement, any Preliminary Prospectus, the Time of Sale Disclosure Package, the Prospectus or any issuer free writing prospectus.

7. ***Representations and Agreements to Survive Delivery.*** All representations, warranties, and agreements of the Company herein or in certificates delivered pursuant hereto, including but not limited to the agreements of the several Underwriters and the Company contained in Section 6 hereof, shall remain operative and in full force and effect regardless of any investigation made by or on behalf of any Underwriter or any controlling person thereof, or the Company or any of its officers, directors, or controlling persons, and shall survive delivery of, and payment for, the Securities to and by the Underwriters hereunder and any termination of this Agreement.

8. ***Substitution of Underwriters.***

(a) ***Obligation to Purchase Under Certain Circumstances.*** If any Underwriter or Underwriters shall fail to take up and pay for the amount of Firm Shares agreed by such Underwriter or Underwriters to be purchased hereunder, upon tender of such Firm Shares in accordance with the terms hereof, and the amount of Firm Shares not purchased does not aggregate to more than 10% of the total amount of Firm Shares set forth in Schedule I hereto, the remaining Underwriters shall be obligated to take up and pay for (in proportion to their respective underwriting obligations hereunder as set forth in Schedule I hereto except as may otherwise be determined by you) the Firm Shares that the withdrawing or defaulting Underwriters agreed but failed to purchase.

(b) ***Termination Under Certain Circumstances.*** If any Underwriter or Underwriters shall fail to take up and pay for the amount of Firm Shares agreed by such Underwriter or Underwriters to be purchased hereunder, upon tender of such Firm Shares in accordance with the terms hereof, and the amount of Firm Shares not purchased aggregates to more than 10% of the total amount of Firm Shares set forth in Schedule I hereto, and arrangements satisfactory to you for the purchase of such Firm Shares by other persons are not made within 36 hours thereafter, this Agreement shall terminate. In the event of any such termination the Company shall have no liability to any Underwriter (except to the extent provided in Section 4(a)(vii) and Section 6 hereof) nor shall any Underwriter (other than an Underwriter who shall have failed, otherwise than for some reason permitted under this Agreement, to purchase the amount of Firm Shares agreed by such Underwriter to be purchased hereunder) be under any liability to the Company (except to the extent provided in Section 6 hereof).

(c) ***Postponement of Closing.*** If Firm Shares to which a default relates are to be purchased by the non-defaulting Underwriters or by any other party or parties, the Representative or the Company shall have the right to postpone the First Closing Date for not more than seven business days in order that the necessary changes in the Registration Statement, in the Time of Sale Disclosure Package, in the Prospectus or in any other documents, as well as any other arrangements, may be effected. As used herein, the term "Underwriter" includes any person substituted for an Underwriter under this Section 8.

(d) ***No Relief from Liability.*** No action taken pursuant to this Section 8 shall relieve any defaulting Underwriter from liability, if any, in respect of such default.

9. ***Termination of this Agreement.***



(a) Right to Terminate. You, as Representative of the several Underwriters, shall have the right to terminate this Agreement by giving notice to the Company as hereinafter specified at any time at or prior to the First Closing Date, and the option referred to in Section 3(b), if exercised, may be cancelled at any time prior to the Second Closing Date, if (i) the Company shall have failed, refused or been unable, at or prior to such Closing Date, to perform any agreement on its part to be performed hereunder, (ii) any condition of the Underwriters' obligations hereunder is not fulfilled, (iii) trading in the Company's Common Stock shall have been suspended by the Commission or the Exchange or trading in securities generally on the NASDAQ Stock Market or New York Stock Exchange shall have been suspended, (iv) minimum or maximum prices for trading shall have been fixed, or maximum ranges for prices for securities shall have been required, on the NASDAQ Stock Market or New York Stock Exchange, by such Exchange or by order of the Commission or any other Governmental Authority having jurisdiction, (v) a banking moratorium shall have been declared by federal or New York state authorities or a material disruption in commercial banking or securities settlement or clearance services in the United States, or (vi) there shall have occurred any attack on, outbreak or escalation of hostilities or act of terrorism involving the United States, any declaration by the United States of a national emergency or war, any change in financial markets, any substantial change or development involving a prospective substantial change in United States or international political, financial or economic conditions, or any other calamity or crisis that, in your judgment, is material and adverse and makes it impractical or inadvisable to proceed with the completion of the sale of and payment for the Securities. Any such termination shall be without liability of any party to any other party except that the provisions of Section 4(a)(vii) and Section 6 hereof shall at all times be effective and shall survive such termination.

(b) Notice of Termination. If you elect to terminate this Agreement as provided in this Section 9, the Company shall be notified promptly by you by telephone, confirmed by letter.

10. ***Default by the Company.***

(a) Default by the Company. If the Company shall fail at the First Closing Date to sell and deliver the number of Securities which it is obligated to sell hereunder, then this Agreement shall terminate without any liability on the part of any Underwriter or, except as provided in Section 4(a)(vii) and Section 6 hereof, any non-defaulting party.

(b) No Relief from Liability. No action taken pursuant to this Section shall relieve the Company from liability, if any, in respect of such default.

11. ***Notices.*** Except as otherwise provided herein, all communications hereunder shall be in writing and, if to the Underwriters, shall be mailed via overnight delivery service, hand delivered via courier or emailed to the Representative c/o Piper Jaffray & Co., U.S. Bancorp Center, 800 Nicollet Mall, Minneapolis, Minnesota 55402, Attention: Equity Capital Markets, with a copy to Piper Jaffray General Counsel at 800 Nicollet Mall, Minneapolis, MN 55402 and LegalCapMarkets@pjc.com; with a copy to Cooley LLP, 1114 Avenue of the Americas, New York, NY 10036, Attention: Divakar Gupta, Daniel I. Goldberg and Joshua A. Kaufman (Email: dgupta@cooley.com; dgoldberg@cooley.com; josh.kaufman@cooley.com); if to the Company, shall be mailed, delivered or emailed to it at Gemphire Therapeutics Inc., 17199 N. Laurel Park Dr., Suite 401, Livonia, Michigan 48152, Attention: Jeffrey S. Mathiesen (Email:

jmathiesen@gemphire.com); with a copy to Honigman Miller Schwartz and Cohn, LLP, Columbia Plaza, 350 East Michigan Avenue, Suite 300, Kalamazoo, Michigan 49007, Attention: Phillip D. Torrence (Email: PTorrence@honigman.com), or in each case to such other address as the person to be notified may have requested in writing. Any party to this Agreement may change such address for notices by sending to the parties to this Agreement written notice of a new address for such purpose.

12. **Persons Entitled to Benefit of Agreement.** This Agreement shall inure to the benefit of and be binding upon the parties hereto and their respective successors and assigns and the controlling persons, officers and directors referred to in Section 6. Nothing in this Agreement is intended or shall be construed to give to any other person, firm or corporation any legal or equitable remedy or claim under or in respect of this Agreement or any provision herein contained. The term "successors and assigns" as herein used shall not include any purchaser, as such purchaser, of any of the Securities from any of the several Underwriters.

13. **Absence of Fiduciary Relationship.** The Company acknowledges and agrees that: (a) the Representative has been retained solely to act as an underwriter in connection with the sale of the Securities and that no fiduciary, advisory or agency relationship between the Company and the Representative has been created in respect of any of the transactions contemplated by this Agreement, irrespective of whether the Representative has advised or are advising the Company on other matters; (b) the price and other terms of the Securities set forth in this Agreement were established by the Company following discussions and arms-length negotiations with the Representative and the Company is capable of evaluating and understanding and understands and accepts the terms, risks and conditions of the transactions contemplated by this Agreement; (c) it has been advised that the Representative and their affiliates are engaged in a broad range of transactions which may involve interests that differ from those of the Company and that the Representative has no obligation to disclose such interest and transactions to the Company by virtue of any fiduciary, advisory or agency relationship; (d) it has been advised that the Representative is acting, in respect of the transactions contemplated by this Agreement, solely for the benefit of the Representative and the other Underwriters, and not on behalf of the Company; (e) it, he or she waives to the fullest extent permitted by law, any claims it may have against the Representative for breach of fiduciary duty or alleged breach of fiduciary duty in respect of any of the transactions contemplated by this Agreement and agrees that the Representative shall have no liability (whether direct or indirect) to the Company in respect of such a fiduciary duty claim on behalf of or in right of the Company, including stockholders, employees or creditors of the Company.

14. **Governing Law; Waiver of Jury Trial.** This Agreement shall be governed by and construed in accordance with the laws of the State of New York. The Company (on its behalf and, to the extent permitted by applicable law, on behalf of its stockholders and affiliates and each of the Underwriters hereby irrevocably waives, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to this Agreement or the transactions contemplated hereby.

15. **Counterparts.** This Agreement may be executed in one or more counterparts and, if executed in more than one counterpart, the executed counterparts shall each be deemed to be an original and all such counterparts shall together constitute one and the same instrument.

16. **General Provisions.** This Agreement constitutes the entire agreement of the parties to this Agreement and supersedes all prior written or oral and all contemporaneous oral agreements, understandings and negotiations with respect to the subject matter hereof. This Agreement may not be amended or modified unless in writing by all of the parties hereto, and no condition herein (express or implied) may be waived unless waived in writing by each party whom the condition is meant to benefit. The Section headings herein are for the convenience of the parties only and shall not affect the construction or interpretation of this Agreement.

**[Signature Page Follows]**

Please sign and return to the Company the enclosed duplicates of this letter whereupon this letter will become a binding agreement between the Company and the several Underwriters in accordance with its terms.

Very truly yours,

Gemphire Therapeutics Inc.

By: /s/ Steven Gullans

Name: Steven Gullans

Title: Interim President and Chief Executive Officer

Confirmed as of the date first above mentioned, on behalf of itself and the other several Underwriters named in Schedule I hereto.

Piper Jaffray & Co.

By: /s/ David Stadinski

Name: David Stadinski

Title: Managing Director,  
Global Head of Equity Capital Markets

*[Signature Page to Gemphire Therapeutics Inc. Underwriting Agreement]*

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## SCHEDULE I

<u>Underwriter</u>	<u>Number of Firm Shares <sup>(1)</sup></u>
Piper Jaffray & Co.	2,168,572
Raymond James & Associates, Inc.	502,857
Roth Capital Partners LLC	251,429
Laidlaw & Company (UK) Ltd.	157,143
LifeSci Capital LLC	62,857
<hr/>	
Total .....	3,142,858
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- (1) The Underwriters may purchase up to an additional 471,429 Option Shares, to the extent the option described in Section 3(b) of the Agreement is exercised, in the proportions and in the manner described in the Agreement.
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**SCHEDULE II**

**Certain Permitted Free Writing Prospectuses**

None

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## SCHEDULE III

### Pricing Information

Offered Securities to be Sold:	3,142,858 shares
Offering Price:	\$7.00 per share
Estimated Net Proceeds to the Company (after underwriting discounts and commissions, but before transaction expenses):	\$20,460,005.58

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## SCHEDULE IV

### List of Individuals and Entities Executing Lock-Up Agreements

Andy Sassine  
P. Kent Hawryluk  
Jeff Mathiesen  
Seth Reno  
Steve Gullans  
Ken Kousky  
Pedro Lichtinger  
Lee Golden  
Charles Bisgaier

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**SCHEDULE VI**

**Written Testing-the-Waters Communications**

None



## EXHIBIT A

### Form of Lock-Up Agreement

February , 2018

Piper Jaffray & Co.  
As representative of the underwriters named  
in Schedule I to the Underwriting Agreement  
referred to below

c/o Piper Jaffray & Co.  
800 Nicollet Mall, Suite 800  
Minneapolis, MN 55402

Dear Ladies and Gentlemen:

As an inducement to the underwriters (the "*Underwriters*") to execute an underwriting agreement (the "*Underwriting Agreement*") providing for a public offering (the "*Offering*") of common stock (the "*Common Stock*"), of Gemphire Therapeutics, Inc. and any successor (by merger or otherwise) thereto (the "*Company*"), the undersigned hereby agrees that without, in each case, the prior written consent of Piper Jaffray & Co. (the "*Representative*") during the period specified in the second succeeding paragraph (the "*Lock-Up Period*"), the undersigned will not: (1) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, make any short sale or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into, exercisable or exchangeable for or that represent the right to receive Common Stock (including without limitation, Common Stock which may be deemed to be beneficially owned by the undersigned in accordance with the rules and regulations of the Securities and Exchange Commission and securities which may be issued upon exercise of a stock option or warrant) whether now owned or hereafter acquired (the "*Undersigned's Securities*"); (2) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the Undersigned's Securities, whether any such transaction described in clause (1) or (2) above is to be settled by delivery of Common Stock or such other securities, in cash or otherwise; (3) make any demand for or exercise any right with respect to, the registration of any Common Stock or any security convertible into or exercisable or exchangeable for Common Stock; or (4) publicly disclose the intention to do any of the foregoing.

The undersigned agrees that the foregoing restrictions preclude the undersigned from engaging in any hedging or other transaction which is designed to or which reasonably could be expected to lead to or result in a sale or disposition of the Undersigned's Securities even if such Securities 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 or call option) with respect to any of the

Undersigned's Securities or with respect to any security that includes, relates to, or derives any significant part of its value from the Undersigned's Securities.

The Lock-Up Period will commence on the date of this Agreement and continue and include the date 90 days after the date of the final prospectus used to sell Common Stock in the Offering pursuant to the Underwriting Agreement,

Notwithstanding the foregoing, the restrictions above shall not apply to (i) transfers as a *bona fide* gift or gifts, (ii) transfers to any trust for the direct or indirect benefit of the undersigned or the immediate family of the undersigned, (iii) transfers by operation of law, including pursuant to a qualified domestic relations order or in connection with a divorce settlement, (iv) 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 exercise of such option shall continue to be subject to this Lock-Up Agreement, (v) sales to the Company pursuant to agreements under which the Company, (1) 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, (2) is required to repurchase shares of Common Stock or any securities convertible into or exercisable or exchangeable for the Common Stock or (3) 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, (vi) the establishment of a trading plan pursuant to Rule 10b5-1 promulgated under the Exchange Act, provided, there are no sales under or public disclosure of such plan during the Lock-up Period, (vii) 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 and (viii) if the undersigned is a corporation, partnership, limited liability company, trust or other business entity (1) transfers to another corporation, partnership, limited liability company, trust or other business entity that is a direct or indirect affiliate (as defined in Rule 405 promulgated under the Securities Act of 1933, as amended) of the undersigned or (2) distributions of shares of Common Stock or any security convertible into or exercisable for Common Stock to limited partners, limited liability company members or stockholders of the undersigned, (ix) if the undersigned is a trust, transfers to the beneficiary of such trust, (x) transfers by testate succession or intestate succession or (xi) pursuant to the Underwriting Agreement; *provided*, in the case of clauses (i)-(ii) and (viii)-(x), that (x) such transfer shall not involve a disposition for value, (y) the transferee agrees in writing with the Underwriters to be bound by the terms of this Lock-Up Agreement, and (z) no filing by any party under Section 16(a) of the Securities Exchange Act of 1934, as amended (the "**Exchange Act**"), shall be required or shall be made voluntarily in connection with such transfer. For purposes of this Agreement, "immediate family" shall mean any relationship by blood, marriage, domestic partnership or adoption, nor more remote than first cousin and "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.

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, member or stockholders; provided, however, that in each such case, prior to such transfer, each transferee shall execute a duplicate form of this Lock-up Agreement or execute an agreement, reasonably satisfactory to the Representative, 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.

In furtherance of the foregoing, the Company and its transfer agent and registrar are hereby authorized to decline to make any transfer of shares of Common Stock if such transfer would constitute a violation or breach of this Agreement.

The undersigned hereby represents and warrants that it: (i) has full power and authority to enter into this Agreement and that upon request, the undersigned will execute and additional documents necessary to ensure the validity or enforcement of this Agreement, and (ii) now has, and except as contemplated by this Agreement, for the duration of this Agreement will have, good and marketable title to the Undersigned's Securities, free and clear of all liens, encumbrances, and claims whatsoever. All authority herein conferred or agreed to be conferred and any obligations of the undersigned shall be binding upon the successors, assigns, heirs or personal representatives of the undersigned.

The undersigned understands that the undersigned shall be released from all obligations under this Agreement if (i) the Company notifies the Underwriters that it does not intend to proceed with the Offering, (ii) the Underwriting Agreement does not become effective, or if the Underwriting Agreement (other than the provisions thereof which survive termination) shall terminate or be terminated prior to payment for and delivery of the Common Stock to be sold thereunder, or (iii) the Offering is not completed by April 30, 2018.

The undersigned understands that the Underwriters are entering into the Underwriting Agreement and proceeding with the Offering in reliance upon this Agreement.

This Agreement shall be governed by, and construed in accordance with, the laws of the State of New York.

Very truly yours,

\_\_\_\_\_  
Printed Name of Holder

By \_\_\_\_\_

**EXHIBIT B**

**Form of Company Counsel Opinion**

B-1

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# HONIGMAN

Honigman Miller Schwartz and Cohn LLP  
Attorneys and Counselors

(269) 337-7700  
Fax: (269) 337-7701

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February 8, 2018

Gemphire Therapeutics Inc.  
17199 N. Laurel Park Drive, Suite 401  
Livonia, Michigan 48152

**Re:        *Registration Statement on Form S-3***

Ladies and Gentlemen:

We have acted as counsel to Gemphire Therapeutics Inc., a Delaware corporation (the "**Company**"), in connection with the public offering of 3,142,858 shares of the Company's common stock (the "**Shares**"), par value \$0.001 per share (the "**Common Stock**") by the Company, including up to 471,429 shares that may be sold pursuant to the exercise of an option to purchase additional shares, pursuant to a Registration Statement on Form S-3 (File No. 333-220315) (the "**Registration Statement**") filed by the Company with the Securities and Exchange Commission (the "**Commission**"), the prospectus included in the Registration Statement and the prospectus supplement (the "**Prospectus Supplement**") relating to the Shares filed with the Commission pursuant to Rule 424(b) promulgated under the Securities Act of 1933, as amended (the "**Securities Act**"). The Shares are to be sold to the underwriters for resale to the public as described in the Prospectus Supplement and pursuant to the underwriting agreement referred to in the Prospectus Supplement (the "**Underwriting Agreement**").

Based upon our examination of such documents and other matters as we deem relevant, we are of the opinion that the Shares have been duly authorized by the Company and, when issued and sold in accordance with the Registration Statement and the Prospectus Supplement, with payment received by the Company in the manner described in the Underwriting Agreement, will be validly issued, fully paid and non-assessable.

We hereby consent to the filing of this opinion with the Commission as Exhibit 5.1 to the Registration Statement and to the reference to our firm under the caption "Legal Matters" in the Registration Statement and the Prospectus Supplement. In giving such consent, we do not admit that we are within the category of persons whose consent is required by Section 7 of the Securities Act or the rules and regulations promulgated thereunder by the Commission.

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**350 East Michigan Avenue · Suite 300 · Kalamazoo, Michigan 49007-3800**  
*Detroit · Ann Arbor · Bloomfield Hills · Chicago · Grand Rapids · Kalamazoo · Lansing*

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# HONIGMAN

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Gemphire Therapeutics Inc.  
February 8, 2018  
Page 2

Very truly yours,

/s/ Honigman Miller Schwartz and Cohn LLP

Honigman Miller Schwartz and Cohn LLP

PDT/GLS/EJBY/REW

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**350 East Michigan Avenue · Suite 300 · Kalamazoo, Michigan 49007-3800**  
*Detroit · Ann Arbor · Bloomfield Hills · Chicago · Grand Rapids · Kalamazoo · Lansing*

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## Gemphire Announces Pricing of \$22 Million Public Offering of Common Stock

**LIVONIA, Mich., February 8, 2018** -- Gemphire Therapeutics Inc. (NASDAQ: GEMP), a clinical-stage biopharmaceutical company focused on developing and commercializing therapies for cardiometabolic disorders, including dyslipidemia, Non Alcoholic Fatty Liver Disease (NAFLD) and Nonalcoholic Steatohepatitis (NASH), today announced the pricing of its previously announced underwritten public offering of 3,142,858 shares of its common stock at a public offering price of \$7.00 per share. All of the shares of common stock are being offered by Gemphire. In addition, Gemphire has granted the underwriters a 30-day option to purchase up to an additional 471,429 shares of common stock at the public offering price less the underwriting discount. The Company expects to receive gross proceeds of approximately \$22.0 million, before deducting the underwriting discount and estimated offering expenses payable by the Company, and assuming no exercise of the underwriters' option to purchase additional shares. Gemphire anticipates using the net proceeds from the offering for working capital and general corporate purposes.

The offering is expected to close on February 12, 2018, subject to the satisfaction of customary closing conditions.

Piper Jaffray & Co. is acting as the lead book-running manager for the offering. Raymond James & Associates, Inc. is also acting as a book-runner for the offering. Roth Capital Partners is acting as a lead manager for the offering and Laidlaw & Company (UK) Ltd. and LifeSci Capital LLC are acting as co-managers.

The securities described above are being offered by Gemphire pursuant to a shelf registration statement previously filed with and declared effective by the Securities and Exchange Commission (the "SEC"). A preliminary prospectus supplement and the accompanying prospectus related to the offering have been filed with the SEC and are available on the SEC's website at [www.sec.gov](http://www.sec.gov). Copies of the final prospectus supplement and the accompanying prospectus relating to this offering, when available, may be obtained from: Piper Jaffray & Co., Attn: Prospectus Department, 800 Nicollet Mall, J12S03, Minneapolis, MN 55402, by telephone at (800) 747-3924, or by email at [prospectus@pjc.com](mailto:prospectus@pjc.com); or Raymond James & Co., Inc., Attn: Equity Syndicate, 880 Carillon Parkway, St. Petersburg, Florida, by telephone at (800) 248-8863, or by email at [prospectus@raymondjames.com](mailto:prospectus@raymondjames.com).

This press release shall not constitute an offer to sell or the solicitation of an offer to buy, nor shall there be any sale of these securities in any state or jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state or jurisdiction.

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**About Gemphire**

Gemphire is a clinical-stage biopharmaceutical company that is committed to helping patients with cardiometabolic disorders, including dyslipidemia and NASH. The Company is focused on providing new treatment options for cardiometabolic diseases through its complementary, convenient, cost-effective product candidate gemcabene as add-on to the standard of care, especially statins, that will benefit patients, physicians, and payors. Gemphire's Phase 2 clinical program is evaluating the efficacy and safety of gemcabene in hypercholesterolemia, including FH and ASCVD, SHTG and NASH/NAFLD. Two trials supporting hypercholesterolemia have been completed under NCT02722408 and NCT02634151. Gemphire has completed recruitment for a clinical trial for SHTG under NCT02944383, and previously initiated a trial for adult NASH. Please visit [www.gemphire.com](http://www.gemphire.com) for more information.

**Forward Looking Statements**

Any statements in this press release about Gemphire's future expectations, plans and prospects, including statements about the closing of Gemphire's offering of securities and its anticipated use of the net proceeds therefrom, and Gemphire's financial prospects, future operations and sufficiency of funds for future operations, clinical development of Gemphire's product candidate, expectations regarding future clinical trials, regulatory submissions and meetings and future expectations and plans and prospects for Gemphire, expectations for the future competitive environment for gemcabene, expectations regarding operating expenses and cash used in operations, and other statements containing the words "believes," "anticipates," "estimates," "expects," "intends," "plans," "predicts," "projects," "targets," "may," "potential," "will," "would," "could," "should," "continue," "scheduled" and similar expressions, constitute forward-looking statements within the meaning of The Private Securities Litigation Reform Act of 1995. Actual results may differ materially from those indicated by such forward-looking statements as a result of various important factors, including: developments in the capital markets, the success and timing of Gemphire's regulatory submissions and pre-clinical and clinical trials; regulatory requirements or developments; changes to Gemphire's clinical trial designs and regulatory pathways; changes in Gemphire's capital resource requirements; the actions of Gemphire's competitors; Gemphire's ability to obtain additional financing; Gemphire's ability to successfully market and distribute its product candidate, if approved; Gemphire's ability to obtain and maintain its intellectual property protection; and other factors discussed in the "Risk Factors" section of Gemphire's Annual Report on Form 10-K for the year ended December 31, 2016, Gemphire's Quarterly Report on Form 10-Q for the quarter ended September 30, 2017 and in other filings Gemphire makes with the SEC from time to time. In addition, the forward-looking statements included in this press release represent Gemphire's views as of the date hereof. Gemphire anticipates that subsequent events and developments will cause Gemphire's views to change. However, while Gemphire may elect to update these forward-looking statements at some point in the future, Gemphire specifically disclaims any obligation to do so. These forward-looking statements should not be relied upon as representing Gemphire's views as of any date subsequent to the date hereof.

**Contact:**

Andrew McDonald, Ph.D.  
LifeSci Advisors, LLC  
(646) 597-6987

Jeff Mathiesen, CFO  
Gemphire Therapeutics Inc.  
(734)-245-1700