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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): November 26, 2019**

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**Aravive, Inc.**

(Exact name of registrant as specified in its charter)

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

**001-36361**  
(Commission  
File Number)

**26-4106690**  
(IRS Employer  
Identification No.)

**River Oaks Tower  
3730 Kirby Drive, Suite 1200  
Houston, Texas 77098**  
(Address of principal executive offices)

**(936) 355-1910**  
(Registrant's telephone number, including area code)

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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 (*see* General Instruction A.2. below):

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

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common stock, par value \$0.0001 per share	ARAV	Nasdaq Global Select Market

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 November 27, 2019, Aravive, Inc. (the “Company”) entered into a Purchase Agreement (the “Purchase Agreement”) with Piper Jaffray & Co. and Cantor Fitzgerald & Co., as representatives of the several underwriters named therein (the “Underwriters”), pursuant to which the Company agreed to issue and sell (the “Offering”) up to 3,833,334 shares of its common stock (the “Shares”), par value \$0.0001 per share, which includes 500,000 Shares subject to an option granted to the Underwriters for a period of 30 days to purchase additional shares of the Company’s common stock.

The gross proceeds from the sale of the Shares, before deducting the Underwriters’ discounts and commissions and other estimated offering expenses payable by the Company, are expected to be approximately \$25 million (or approximately \$28.75 million if the Underwriters exercise in full their option to purchase the additional 500,000 Shares). The Purchase Agreement contains customary representations, warranties, and agreements by the Company, customary conditions to closing, indemnification obligations of the Company and the Underwriters, including for liabilities under the Securities Act of 1933, as amended (the “Securities Act”), other obligations of the parties and termination provisions.

The Shares will be issued in the Offering pursuant to the Company’s shelf registration statement on FormS-3 (File No. 333-219765), which was declared effective on September 11, 2017, and the base prospectus included therein, as supplemented by the preliminary prospectus supplement filed with the Securities and Exchange Commission (the “Commission”) on November 26, 2019, and a prospectus supplement, dated November 27, 2019, which was filed with the Commission on November 27, 2019. The Offering is expected to close on December 2, 2019, contingent upon the satisfaction of customary closing conditions.

The Company currently intends to use the net proceeds from the sale of the Shares in the Offering primarily for research, development and manufacturing of product candidates, and for other general corporate purposes including, to acquire, license or invest in complementary businesses, technologies, product candidates or other intellectual property.

A copy of the opinion of Gracin & Marlow, LLP, New York, New York, relating to the legality of the issuance and sale of the Shares in the Offering is filed as Exhibit 5.1 to this Current Report on Form 8-K and is incorporated herein by reference.

The foregoing description of the Purchase Agreement is not complete and is qualified in its entirety by reference to the full text of the Purchase Agreement, a copy of which is included as Exhibit 1.1 to this Current Report on Form 8-K and is incorporated herein by reference. The provisions of the Purchase Agreement, including the representations and warranties contained therein, are not for the benefit of any party other than the parties to such agreement and are not intended as a document for investors and the public to obtain factual information about the current state of affairs of the parties to that document. Rather, investors and the public should look to other disclosures contained in the Company’s filings with the Commission.

**Item 8.01. Other Events.**

On November 26, 2019, the Company issued a press release announcing the launch of the proposed Offering. On November 27, 2019, the Company issued a press release announcing the pricing of the Offering. Copies of these press releases are attached hereto as Exhibit 99.1 and Exhibit 99.2, respectively, and are incorporated herein by reference.

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

(d) Exhibits.

The following exhibits are filed with this Current Report on Form8-K:

<b>Exhibit Number</b>	<b>Description</b>
1.1	<a href="#"><u>Purchase Agreement, dated November 27, 2019, by and among Aravive, Inc., Piper Jaffray &amp; Co. and Cantor Fitzgerald &amp; Co.</u></a>
5.1	<a href="#"><u>Opinion of Gracin &amp; Marlow, LLP</u></a>
23.1	<a href="#"><u>Consent of Gracin &amp; Marlow, LLP (included in the Opinion of Gracin &amp; Marlow, LLP filed as Exhibit 5.1)</u></a>
99.1	<a href="#"><u>Press Release of Aravive, Inc. dated November 26, 2019</u></a>
99.2	<a href="#"><u>Press Release of Aravive, Inc. dated November 27, 2019</u></a>

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**SIGNATURES**

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

Date: November 27, 2019

**ARAVIVE, INC.**  
(Registrant)

By: /s/ Jay P. Shepard  
Name: Jay P. Shepard  
Title: Chief Executive Officer

3,333,334 Shares

ARAVIVE, INC.

Common Stock

PURCHASE AGREEMENT

November 27, 2019

PIPER JAFFRAY & CO.

CANTOR FITZGERALD & CO.

As Representatives of the several  
Underwriters named in Schedule I hereto

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

c/o Cantor Fitzgerald & Co.  
499 Park Avenue  
New York, NY 10022

Ladies and Gentlemen:

Aravive, Inc., a Delaware corporation (the "**Company**"), proposes to sell to the several Underwriters named in Schedule I hereto (the "**Underwriters**") an aggregate of 3,333,334 shares (the "**Firm Shares**") of Common Stock, \$0.0001 par value per share (the "**Common Stock**"), of the Company. The Firm Shares consist of 3,333,334 authorized but unissued shares of Common Stock to be issued and sold by the Company. The Company has also granted to the several Underwriters an option to purchase up to 500,000 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 Agreement are herein collectively called the "**Shares**."

The Company hereby confirms its agreement with respect to the sale of the Shares to the several Underwriters, for whom Piper Jaffray & Co. and Cantor Fitzgerald & Co. are acting as representatives (the "**Representatives**").

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. 333-219765) under the Securities Act of 1933, as amended (the "**Securities Act**" or the "**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

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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) 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 Shares 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**." Within two business days 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 Shares 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. 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 therein or otherwise deemed by the Rules and Regulations to be a part thereof.

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## 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 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 or the time of first use within the meaning of the Rules and Regulations, 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 issue date, at the time of any filing with the Commission pursuant to Rule 424(b) of the Rules and Regulations, at the First Closing Date or at the Second Closing Date, included, includes or will include an untrue statement of a material fact or omitted, omits or 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).

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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 November 26, 2019, 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 8:00 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 *abona fide* offer (within the meaning of Rule 164(h)(2) under the Securities Act) of the Shares 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, including the Company in the preceding three years not having been convicted of a felony or misdemeanor or having been made the subject of a judicial or administrative decree or order as described in Rule 405 of the Rules and Regulations (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), nor an “excluded issuer” as defined in Rule 164 under the Securities Act.

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

(iv) *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 Shares 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 Shares 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 VI, the Company has not made and will not make any communications relating to the Shares that would constitute a Testing the Waters Communication, except in accordance with the provisions of Section 2(a)(v) of this Agreement.

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(v) *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*”).

(vi) *Testing the Waters Materials*. “*Testing the Waters Communication*” means any oral or written communication with potential investors undertaken in reliance on Section 5(d) of the Securities Act. 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 Representatives with entities that are qualified institutional buyers within the meaning of Rule 144A under the Securities Act or institutions that are accredited investors within the meaning of Rule 501 under the Securities Act and (ii) has not authorized anyone other than the Representatives to engage in Testing the Waters Communications. The Company reconfirms that the Representatives has 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 VI 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 Securities 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 Applicable Time, 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 light of the circumstances under which they were made, not misleading.

(vii) *Financial Statements*. The historical financial statements (including the related notes and supporting schedules) to be included or incorporated by reference, in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus comply as to form in all material respects with the requirements of Regulation S-X under the Securities Act (“*Regulation S-X*”) and present fairly in all material respects the financial condition, results of operations and cash flows of the entities purported to be shown thereby at the dates and for the periods indicated and have been prepared in conformity with generally accepted accounting principles in the United States applied on a consistent basis throughout the periods involved. All disclosures contained in the Registration Statement and Prospectus regarding “non-GAAP financial measures” (as such term is defined by the rules and regulations of the Commission) comply in all material respects with Regulation G of the Exchange Act and Item 10 of Regulation S-K of the Act, to the extent applicable. There are no financial statements (historical or pro forma) that are required to be included in the Registration Statement, the Time of Sale Disclosure Package or the Prospectus that are not so included as required. The interactive data in eXtensible Business Reporting Language (“*XBRL*”) included or incorporated by reference in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus fairly present the information called for in all material respects and have been prepared in accordance with the Commission’s rules and guidelines applicable thereto.

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(viii) *No Off-Balance Sheet Transactions*. There are no transactions, arrangements and other relationships between and/or among the Company, and/or, to the knowledge of the Company, any of its affiliates and any unconsolidated entity, including, but not limited to, any structural finance, special purpose or limited purpose entity (each, an “*Off-Balance Sheet Transaction*”) that could reasonably be expected to affect materially the Company’s liquidity or the availability of or requirements for its capital resources, including those Off Balance Sheet Transactions described in the Commission’s Statement about Management’s Discussion and Analysis of Financial Conditions and Results of Operations (Release Nos. 33-8056; 34-45321; FR-61), and are required to be described in the Prospectus, which have not been described as required.

(ix) *Auditor Independence*. Each of (a) PricewaterhouseCoopers LLP and (b) BDO USA, LLP, who have certified certain financial statements of the Company and its consolidated subsidiaries (the “*Subsidiaries*”), and whose report appears in or is incorporated by referenced in, the Registration Statement, the Time of Sale Disclosure Package and the Prospectus, are independent public accountants as required by the Securities Act and the Public Accounting Oversight Board.

(x) *No Material Adverse Effect*. The Company and each of its Subsidiaries (a complete list of the Subsidiaries is included as Schedule V hereto) has been duly organized, validly existing as a corporation and in good standing under the laws of their respective jurisdictions of organization. The Company and each of its Subsidiaries are, and will be, duly licensed or qualified as a foreign corporation for transaction of business and in good standing under the laws of each other jurisdiction in which their respective ownership or lease of property or the conduct of their respective businesses requires such license or qualification, and have all corporate power and authority necessary to own or hold their respective properties and to conduct their respective businesses as described in the Registration Statement and the Time of Sale Disclosure Package, except where the failure to be so qualified or in good standing or have such power or authority would not, individually or in the aggregate, have a material adverse effect or would reasonably be expected to have a material adverse effect on or affecting the assets, business, operations, earnings, properties, condition (financial or otherwise), prospects, stockholders’ equity or results of operations of the Company and the Subsidiaries taken as a whole, or prevent or materially interfere with consummation of the transactions contemplated hereby (a “*Material Adverse Effect*”). The Company does not own or control, directly or indirectly, any corporation, association or other entity other than the subsidiaries listed in Exhibit 21.1 to the Company’s Annual Report on Form 10-K for the fiscal year ended December 31, 2018 except for subsidiaries that in the aggregate would not constitute a “*significant subsidiary*” (as defined in Rule 405 under the Securities Act). With the exception of Aravive Biologics, Inc., none of the subsidiaries of the Company is a significant subsidiary.

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(xi) Absence of Settlement Agreements or Undertakings. Except as disclosed in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus, 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 authority.

(xii) Absence of Legal or Governmental Proceedings. Except as disclosed in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus, there are no legal or governmental proceedings pending to which the Company or any of its subsidiaries is a party or of which any property or assets of the Company or any of its subsidiaries is the subject that, if determined adversely to the Company, would, in the aggregate, reasonably be expected to have a Material Adverse Effect or would, in the aggregate, reasonably be expected to have a material adverse effect on the performance of this Agreement or the consummation of the transactions contemplated hereby; and to the Company's knowledge, no such proceedings are threatened or contemplated by governmental authorities or others.

(xiii) Material Contracts. There are no contracts or other documents required to be described in the Registration Statement or filed as exhibits to the Registration Statement that are not described and filed as required. The statements made in the Registration Statement, the Time of Sale Disclosure Package and Prospectus, insofar as they purport to constitute summaries of the terms of the contracts and other documents described and filed, constitute accurate summaries of the terms of such contracts and documents in all material respects. Except as disclosed in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus, neither the Company nor any of its Subsidiaries has knowledge that any other party to any such contract or other document has any intention not to render full performance as contemplated by the terms thereof.

(xiv) Capitalization. The Company has an authorized capitalization as set forth in each of the Registration Statement and the Time of Sale Disclosure Package, and all of the issued shares of the Company have been duly authorized and validly issued, are fully paid and non-assessable, conform in all material respects to the description thereof contained in the Registration Statement and the Time of Sale Disclosure Package and were not issued in violation of any preemptive right, resale right, right of first refusal or similar right. All of the Company's options, warrants and other rights to purchase or exchange any securities for shares of the Company's capital stock have been duly authorized and validly issued, and conform in all material respects to the description thereof contained in the Registration Statement and the Time of Sale Disclosure Package. All of the issued shares of capital stock or other ownership interest of each subsidiary of the Company have been duly authorized and validly issued, are fully paid and non-assessable and are owned directly or indirectly by the Company, free and clear of all liens, encumbrances, equities or claims, except for such liens, encumbrances, equities or claims as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

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(xv) Due Authorization. The Shares to be issued and sold by the Company to the Underwriters hereunder have been duly authorized and, upon payment and delivery in accordance with this Agreement, will be validly issued, fully paid and non-assessable, will conform in all material respects to the description thereof contained in the Registration Statement and the Time of Sale Disclosure Package, will be issued in compliance with federal and state securities laws and will be free of statutory and contractual preemptive rights, rights of first refusal and similar rights.

(xvi) Authority to Enter into this Agreement. The Company has all requisite corporate power and authority to execute, deliver and perform its obligations under this Agreement. This Agreement has been duly and validly authorized, executed and delivered by the Company.

(xvii) Non-Contravention. The issue and sale of the Shares, the execution, delivery and performance of this Agreement by the Company, the consummation of the transactions contemplated hereby and the application of the proceeds from the sale of the Shares as described under "Use of Proceeds" in the Registration Statement and the Time of Sale Disclosure Package will not (i) conflict with or result in a breach or violation of any of the terms or provisions of, impose any lien, charge or encumbrance upon any property or assets of the Company and its subsidiaries, or constitute a default under, any indenture, mortgage, deed of trust, loan agreement, license, lease or other agreement or instrument to which the Company or any of its subsidiaries is a party or by which the Company or any of its subsidiaries is bound or to which any of the property or assets of the Company or any of its subsidiaries is subject; (ii) result in any violation of the provisions of the articles of association, charter or by-laws (or similar organizational documents) of the Company or any of its subsidiaries; or (iii) result in any violation of any statute or any judgment, order, decree, rule or regulation of any court or governmental agency or body having jurisdiction over the Company or any of its subsidiaries or any of their properties or assets (each, a "**Governmental Authority**"), except, with respect to clauses (i) and (iii), for such conflicts, breaches, violations, liens, charges, encumbrances or defaults that would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(xviii) No Consent or Approval Required. No consent, approval, authorization or order of, or filing, registration or qualification with, any court or governmental agency or body having jurisdiction over the Company or any of its subsidiaries or any of their properties or assets is required for the issue and sale of the Shares, the execution, delivery and performance of this Agreement by the Company, the consummation of the transactions contemplated hereby, the application of the proceeds from the sale of the Shares as described under "Use of Proceeds" in the Registration Statement and the Time of Sale Disclosure Package, except for (i) the registration of the Shares under the Securities Act; (ii) such consents, approvals, authorizations, orders, filings, registrations or qualifications as may be required under the Exchange Act, and applicable state or foreign securities laws and/or the bylaws and rules of the Financial Industry Regulatory Authority (the "**FINRA**") in connection with the sale of the Shares by the Underwriters; and (iii) the inclusion of the Shares on The Nasdaq Global Market ("**Nasdaq**").

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(xix) *Stock Options*. Except as described in the Registration Statement, in the Time of Sale Disclosure Package and in the Prospectus, there are no options, warrants, agreements, contracts or other rights in existence to purchase or acquire from the Company any shares of the capital stock of the Company. The description of the Company's stock option, stock bonus and other stock plans or arrangements ("*Company Stock Plans*"), and the options or other rights granted thereunder, set forth in the Time of Sale Disclosure Package and the Prospectus accurately and fairly presents the information required to be shown with respect to such plans, arrangements, options and rights.

(xx) *Permits*. The Company and its subsidiaries possess such valid and current certificates, authorizations or permits required by state, federal or foreign regulatory agencies or bodies to conduct their respective businesses as currently conducted and as described in the Time of Sale Disclosure Package ("*Permits*"), except where the failure to so possess would not, singly or in the aggregate, reasonably be expected to have a Material Adverse Effect. Neither the Company nor any of its subsidiaries is in violation of, or in default under, any of the Permits or has 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 or default would not, singly or in the aggregate, reasonably be expected to have a Material Adverse Effect. Neither the Company nor any of its subsidiaries has received any notice of proceedings relating to the revocation or modification of any Permits which, singly or in the aggregate, if the subject of an unfavorable decision, ruling or finding, would reasonably be expected to result in a Material Adverse Effect. The Company has not received any notice denying, revoking or modifying any "approved enterprise" or "benefited enterprise" or "preferred enterprise" status with respect to any of the Company's facilities or operations.

(xxi) *Compliance with Applicable Laws and Regulations*. Except as described in the Registration Statement and the Prospectus, as applicable, the Company and its subsidiaries (i) are and at all times have been in material compliance with all statutes, rules and regulations applicable to the ownership, testing, development, manufacture, packaging, processing, use, distribution, marketing, advertising, labeling, promotion, sale, offer for sale, storage, import, export or disposal of any product manufactured or distributed by the Issuer including, without limitation the Federal Food, Drug and Cosmetic Act (21 U.S.C. §301 et seq.), the federal Anti-Kickback Statute (42 U.S.C. §1320a-7b(b)), the Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, and 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 pursuant to such laws, and any successor government programs and comparable state laws, regulations relating to Good Clinical Practices and Good Laboratory Practices and all other local, state, federal, national, supranational and foreign laws, manual provisions, policies and administrative guidance relating to the regulation of the Company (collectively, the "*Applicable Laws*"); (ii) have not received any notice from

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any court or arbitrator or governmental or regulatory authority or third party alleging or asserting noncompliance with any Applicable Laws or any licenses, exemptions, certificates, approvals, clearances, authorizations, permits, registrations and supplements or amendments thereto required by any such Applicable Laws (“**Authorizations**”); (iii) possess all material Authorizations and such Authorizations are valid and in full force and effect and are not in violation of any term of any such Authorizations; (iv) have 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 violation of any Applicable Laws or Authorizations nor is any such claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action threatened; (v) have not received any written notice that any court or arbitrator or governmental or regulatory authority has taken, is taking or intends to take, action to limit, suspend, materially modify or revoke any Authorizations nor is any such limitation, suspension, modification or revocation threatened; (vi) have filed, obtained, maintained or submitted all material reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by any Applicable Laws or Authorizations and that all such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were complete and accurate on the date filed (or were corrected or supplemented by a subsequent submission); and (vii) are 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.

(xxii) *Valid Title*. The Company and each of its subsidiaries have good and marketable title in fee simple to all real property and good and marketable title to all personal property owned by them, that are material to the business of the Company, in each case free and clear of all liens, encumbrances and defects, except such liens, encumbrances and defects as do not materially affect the value of such property and do not materially interfere with the use made and proposed to be made of such property by the Company and its subsidiaries. All assets held under lease by the Company and its subsidiaries, that are material to the business of the Company, are held by them under valid, subsisting and enforceable leases, with such exceptions as do not materially interfere with the use made and proposed to be made of such assets by the Company and its subsidiaries.

(xxiii) *Intellectual Property*. Except as disclosed in the Registration Statement and the Time of Sale Disclosure Package, each of the Company and its subsidiaries owns or has obtained valid and enforceable licenses for, or otherwise has the right to use or possess sufficient software, databases, trademarks, trade names, patent rights, copyrights, domain names, licenses, approvals, trade secrets, inventions, technology, know-how and other intellectual property and similar rights, including registrations and applications for registration thereof (collectively, “**Intellectual Property Rights**”) necessary or material to the conduct of the business now conducted or proposed in the Registration Statement and the Time of Sale Disclosure Package to be conducted by them, and the expected expiration of any such Intellectual Property Rights would not, individually or in the aggregate, have a Material Adverse Effect. Except as disclosed in the Registration Statement and the Time of Sale Disclosure Package (i) to the knowledge

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of the Company and its subsidiaries, there are no rights of third parties to any of the Intellectual Property Rights owned by the Company or its subsidiaries, as applicable; (ii) to the knowledge of the Company and its subsidiaries, there is no infringement, misappropriation, breach, default or other violation, or the occurrence of any event that with notice or the passage of time would constitute any of the foregoing, by the Company or any of its subsidiaries or third parties of any of the Intellectual Property Rights of the Company or its subsidiaries; (iii) there is no pending or, to the knowledge of the Company and its subsidiaries, threatened action, suit, proceeding or claim by others challenging the Company or any of its subsidiaries rights in or to, or the violation of any of the terms of any of their Intellectual Property Rights, and neither the Company nor any of its subsidiaries are aware of any facts which would form a reasonable basis for any such claim; (iv) there is no pending or, to the knowledge of the Company or its subsidiaries, threatened action, suit, proceeding or claim by others challenging the validity, enforceability or scope of any such Intellectual Property Rights, and none of the Company or its subsidiaries is aware of any facts which would form a reasonable basis for any such claim; (v) there is no pending or, to the knowledge of the Company or its subsidiaries, threatened action, suit, proceeding or claim by others that the Company or any of its subsidiaries infringes, misappropriates or otherwise violates or conflicts with any Intellectual Property Rights or other proprietary rights of others and neither the Company nor any of its subsidiaries is aware of any other fact which would form a reasonable basis for any such claim; and (vi) none of the Intellectual Property Rights used by the Company or any of its subsidiaries in their respective businesses has been obtained or is being used by the Company or such subsidiary in violation of any contractual obligation binding on the Company or any of its subsidiaries in violation of the rights of any persons, except in each case covered by clauses (i) – (vi) such as would not, if determined adversely to the Company or its subsidiaries, individually or in the aggregate, have a Material Adverse Effect. The Company and its subsidiaries have taken all reasonable steps in accordance with normal industry practice to protect and maintain the Intellectual Property Rights, including, without limitation, the execution of appropriate nondisclosure and invention assignment agreements. The consummation of the transactions contemplated by this Agreement will not result in the loss or impairment of, or payment of, and additional amounts with respect to, nor require the consent of, any other person regarding the Company's or any of its subsidiaries' right to own or use any of the Intellectual Property Rights as owned or used in the conduct of such party's business as currently conducted. To the knowledge of the Company and its subsidiaries, no employee of any of the Company or its subsidiaries is the subject of any pending claim or proceeding involving a violation of any term of any employment contract, invention disclosure agreement, patent disclosure agreement, noncompetition agreement, non-solicitation agreement, nondisclosure agreement or restrictive covenant to or with a former employer, where the basis of such violation relates to such employee's employment with the Company or its subsidiaries or actions undertaken by the employee while employed with the Company or its subsidiaries.

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(xxiv) *Clinical Trials*. The tests, studies, and trials conducted by or on behalf of or sponsored by the Company or any of its subsidiaries were and, if still pending, are being conducted in all material respects in accordance with all applicable Health Care Laws and standard medical and scientific research protocols, procedures, and controls; none of the Company or any of its subsidiaries has received any written notice, correspondence, or other written communication from any Regulatory Agency or any institutional review board or comparable body requiring or threatening the termination, suspension, or material modification of any tests, studies, or trials, or commercial distribution, and to the knowledge of the Company and its subsidiaries, there are no reasonable grounds for the same. Each of the Company and its subsidiaries has obtained (or caused to be obtained) the informed consent of each human subject who participated in a test, study, or trial. None of the tests, studies, or trials involved any investigator who has been disqualified as a clinical investigator.

(xxv) *Compliance with Healthcare Laws and Regulations*. The Company and its directors, officers, employees, and agents are, and at all times prior hereto have been, in material compliance with, all health care laws and regulations applicable to the Company or any of its product candidates or activities, including development and testing of pharmaceutical products, kickbacks, recordkeeping, documentation requirements, the hiring of employees (to the extent governed by Health Care Laws), quality, safety, privacy, security, licensure, accreditation or any other aspect of developing and testing health care or pharmaceutical products (collectively, "*Health Care Laws*"). The Company has not received any notification, correspondence or any other written or oral communication, including notification of any pending or threatened claim, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from any governmental authority, including, without limitation, the United States Food and Drug Administration ("*FDA*"), the Drug Enforcement Agency ("*DEA*"), the Centers for Medicare & Medicaid Services, and the U.S. Department of Health and Human Services Office of Inspector General, of potential or actual non-compliance by, or liability of, the Company under any Health Care Laws. To the Company's knowledge, there are no facts or circumstances that would reasonably be expected to give rise to liability of the Company under any Health Care Laws, except that would not individually or in the aggregate have a Material Adverse Effect.

(xxvi) *No Default*. Except as disclosed in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus, neither the Company nor any of its subsidiaries (i) is in violation of its articles of association, charter or by-laws (or similar organizational documents), (ii) is in default, and no event has occurred that, with notice or lapse of time or both, would constitute such a default, in the due performance or observance of any term, covenant, condition or other obligation contained in any indenture, mortgage, deed of trust, loan agreement, license or other agreement or instrument to which it is a party or by which it is bound or to which any of its properties or assets is subject, or (iii) is in violation of any statute or any order, rule or regulation of any court or governmental agency or body having jurisdiction over it or its property or assets or has failed to obtain any license, permit, certificate, franchise or other governmental authorization or permit necessary to the ownership of its property or to the conduct of its business, except in the case of clauses (ii) and (iii), to the extent any such conflict, breach, violation or default would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

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(xxvii) Taxes. The Company and each of its subsidiaries have filed all federal, state, local and foreign tax returns required to be filed through the date hereof, subject to permitted extensions, and have paid all taxes due, and no tax deficiency has been determined adversely to the Company or any of its subsidiaries, nor does the Company have any knowledge of any tax deficiencies that have been, or would reasonably be expected to be asserted against the Company, that would, in the aggregate, reasonably be expected to have a Material Adverse Effect.

(xxviii) Exchange Listing and Exchange Act Registration. The Common Stock is registered pursuant to Section 12(b) of the Exchange Act and is included or approved for listing on Nasdaq, and the Company has taken no action designed to, or likely to have the effect of, terminating the registration of the Common Stock under the Exchange Act or delisting the Common Stock from Nasdaq nor has the Company received any written notification that the Commission or Nasdaq is contemplating terminating such registration or listing. The Company has complied in all material respects with the applicable requirements of Nasdaq for maintenance of inclusion of the Common Stock thereon. The Shares, when issued, will be listed on Nasdaq. Except as previously disclosed to counsel for the Underwriters or as set forth in the Time of Sale Disclosure Package and the Prospectus, to the knowledge of the Company, no beneficial owners of the Company's capital stock or subordinated debt who, together with their associated persons and affiliates, hold in the aggregate 10% or more of such capital stock or subordinated debt, have any direct or indirect association or affiliate with a FINRA member.

(xxix) Internal Accounting Controls. The Company and each of its subsidiaries maintain internal accounting controls designed to provide reasonable assurances regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles in the United States, including, but not limited to, internal accounting controls sufficient 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 the Company's financial statements in conformity with generally accepted accounting principles in the United States and to maintain accountability for its assets, (iii) access to the Company's assets is permitted only in accordance with management's general or specific authorization, (iv) the recorded accountability for the Company's assets is compared with existing assets at reasonable intervals and appropriate action is taken with respect to any differences, and (v) the interactive data in XBRL included or incorporated by reference in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus fairly present the information called for in all material respects and are prepared in accordance with the Commission's rules and guidelines applicable thereto. Except as disclosed in the Registration Statement or the Prospectus, as of the date of the most recent balance sheet of the Company and its consolidated subsidiaries audited by BDO USA LLP, there were no material weaknesses in the Company's internal controls.

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(xxx) *No Brokers or Finders*. Neither the Company nor any of its subsidiaries is a party to any contract, agreement or understanding with any person (other than this Agreement) that would give rise to a valid claim against any of them or the Underwriters for a brokerage commission, finder's fee or like payment in connection with the offering and sale of the Shares.

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

(xxxii) *Absence of Stabilization or Manipulation*. The Company and its affiliates have not taken, directly or indirectly, any action designed to or that has constituted or that could reasonably be expected to cause or result in the stabilization or manipulation of the price of any security of the Company in connection with the offering of the Shares.

(xxxiii) *Insurance*. The Company and each of its subsidiaries maintain insurance from nationally recognized, in the applicable country, insurers in such amounts and covering such risks as is commercially reasonable in accordance with customary practices for companies engaged in similar businesses and similar industries for the conduct of their respective businesses and the value of their respective properties and as is customary for companies engaged in similar businesses in similar industries. All policies of insurance of the Company and its subsidiaries are in full force and effect; the Company and each of its subsidiaries are in compliance with the terms of such policies in all material respects; and neither the Company nor any of its subsidiaries has received notice from any insurer or agent of such insurer that capital improvements or other expenditures are required or necessary to be made in order to continue such insurance; there are no material claims by the Company or any of its subsidiaries under any such policy or instrument as to which any insurance company is denying liability or defending under a reservation of rights clause; and neither the Company nor any such subsidiary has any reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue its business at a cost that would not reasonably be expected to have a Material Adverse Effect.

(xxxiv) *Related Party Disclosure*. No relationship, direct or indirect, exists between or among the Company, on the one hand, and the directors, officers, shareholders, customers or suppliers of the Company, on the other hand, that is required to be described in the Registration Statement, the Time of Sale Disclosure Package or the Prospectus which is not so described.

(xxxv) *Not an Investment Company*. Neither the Company nor any of its subsidiaries is, and as of the applicable Settlement Date and, after giving effect to the offer and sale of the Shares and the application of the proceeds therefrom as described under "Use of Proceeds" in the Registration Statement and the Prospectus, none of them will be, (i) an "investment company" or a company "controlled" by an "investment company" within the meaning of the Investment Company Act of 1940, as amended (the "*Investment Company Act*"), and the rules and regulations of the Commission thereunder, or (ii) a "business development company" (as defined in Section 2(a)(48) of the Investment Company Act).

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(xxxvi) Accuracy of Certain Summaries and Statements. The statements set forth or incorporated by reference, as applicable, in each of the Registration Statement and the Prospectus under the captions “Description of Capital Stock,” and in the Company’s Annual Report on Form 10-K for the year ended December 31, 2018 under the caption “Legal Proceedings,” insofar as they purport to summarize the provisions of the laws and documents referred to therein, are accurate summaries in all material respects.

(xxxvii) Eligibility to use Form S-3. The conditions for use of Form S-3, set forth in the General Instructions thereto, including General Instruction I.B.1/I.B.6, have been satisfied.

(xxxviii) Incorporated Documents. The documents incorporated by reference in the Time of Sale Disclosure Package and in the Prospectus, when they became effective or were filed with the Commission, as the case may be, conformed in all material respects to the requirements of the Securities Act or the Exchange Act, as applicable, and were filed on a timely basis with the Commission and none of such documents contained an untrue statement of a material fact or omitted to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading; any further documents so filed and incorporated by reference in the Time of Sale Disclosure Package or in the Prospectus, when such documents are filed with the Commission, will conform in all material respects to the requirements of the Exchange Act, and will not contain 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 under which they were made, not misleading.

(xxxix) Sarbanes-Oxley Act. 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.

(xl) Disclosure Controls. The Company and each of its subsidiaries maintain disclosure controls and procedures (as such term is defined in Rule 13a-15(e) under the Exchange Act) designed to ensure that the information required to be disclosed by the Company and its subsidiaries in the reports they file or submit under the Exchange Act is accumulated and communicated to management of the Company and its subsidiaries, including their respective principal executive officers and principal financial officers, as appropriate, to allow timely decisions regarding required disclosure to be made, and such disclosure controls and procedures are effective in all material respects to perform the functions for which they were established.

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(xli) *Critical Accounting Policies*. The section entitled “Critical accounting policies, significant judgments and use of estimates” incorporated by reference in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus accurately describes in all material respects (i) the accounting policies that the Company believes are the most important in the portrayal of the Company’s financial condition and results of operations and that require management’s most difficult, subjective or complex judgments (“*Critical Accounting Policies*”); (ii) the judgments and uncertainties affecting the application of Critical Accounting Policies; and (iii) the likelihood that materially different amounts would be reported under different conditions or using different assumptions, and an explanation thereof.

(xlii) *Exceptions*. Except as would not, in the aggregate, reasonably be expected to have a Material Adverse Effect, since the date of the latest audited financial statements included in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus, and, except as disclosed in the Registration Statement and the Prospectus, neither the Company nor any of its subsidiaries has (i) sustained any material loss or interference with its business from fire, explosion, flood or other calamity, whether or not covered by insurance, or from any labor dispute or court or governmental action, order or decree, (ii) issued or granted any securities (other than pursuant to employee benefit plans, qualified stock option plans or other equity compensation plans or arrangements existing on the date hereof and disclosed in the Registration Statement and the Prospectus), (iii) incurred any material liability or obligation, direct or contingent, other than liabilities and obligations that were incurred in the ordinary course of business, (iv) entered into any material transaction not in the ordinary course of business, or (v) declared or paid any dividend on its share capital; and since such date, except as disclosed in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus, there has not been any change in the share capital, long-term debt, net current assets or short-term debt of the Company or any of its subsidiaries or any adverse change, or any development involving a prospective adverse change, in or affecting the condition (financial or otherwise), results of operations, shareholders’ equity, properties, management, business or prospects of the Company and its subsidiaries taken as a whole.

(xliii) *Anti-Bribery and Anti-Money Laundering Laws*. Each of the Company, its subsidiaries, its affiliates and any of their respective officers, directors, supervisors, managers, or employees, or to the Company’s knowledge, agents, has not violated, its participation in the offering will not violate, and the Company and each of its subsidiaries has instituted and maintains policies and procedures designed to ensure continued compliance with, each of the following laws to the extent applicable to the Company and its subsidiaries: anti-bribery laws, including but not limited to, any applicable law, rule, or regulation of any locality, including but not limited to any law, rule, or regulation promulgated to implement the OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions, signed December 17, 1997, including the U.S. Foreign Corrupt Practices Act of 1977, as amended, the U.K. Bribery Act 2010, or any other law, rule or regulation of similar purposes and scope, or anti-money laundering laws, including but not limited to, applicable federal, state, international, foreign or other laws, regulations or government guidance regarding anti-money laundering, including, without limitation, Title 18 US. Code section 1956 and 1957, the Patriot Act, the Bank Secrecy Act, and international anti-money laundering principles or procedures by an intergovernmental group or organization, such as the Financial Action Task Force on Money Laundering, of which the United States is a member and with which designation the United States representative to the group or organization continues to concur, all as amended, and any Executive order, directive, or regulation pursuant to the authority of any of the foregoing, or any orders or licenses issued thereunder.

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(xlv) OFAC Compliance.

a. Neither the Company nor any of its subsidiaries, nor any of their directors, officers or employees, nor, to the Company's knowledge, any agent, affiliate or representative of the Company or its subsidiaries, is an individual or entity that is, or is owned or controlled by an individual or entity that is:

(1) the subject of any sanctions administered or enforced by the U.S. Department of Treasury's Office of Foreign Assets Control, the United Nations Security Council, the European Union, Her Majesty's Treasury, or other relevant sanctions authority (collectively, "**Sanctions**"), nor

(2) located, organized or resident in a country or territory that is the subject of Sanctions (including, without limitation, the Crimea region of Ukraine, Cuba, Iran, North Korea and Syria).

b. Neither the Company nor any of its subsidiaries will, directly or indirectly, use the proceeds of the offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other individual or entity:

(1) to fund or facilitate any activities or business of or with any individual or entity or in any country or territory that, at the time of such funding or facilitation, is the subject of Sanctions; or

(2) in any other manner that will result in a violation of Sanctions by any individual or entity (including any individual or entity participating in the offering, whether as underwriter, advisor, investor or otherwise).

c. For the past five years, neither the Company nor any of its subsidiaries has knowingly engaged in, and is not now knowingly engaged in, any dealings or transactions with any individual or entity, or in any country or territory, that at the time of the dealing or transaction is or was the subject of Sanctions.

(xlv) Not a Passive Foreign Investment Company. Subject to the qualifications and assumptions set forth in the Registration Statement, the Company is not, and upon the sale of the Shares contemplated by this Agreement does not expect to become, a "passive foreign investment company" (as defined in Section 1297 of the Code, and the regulations promulgated thereunder).

(xlv) No Immunity. Neither the Company nor any Subsidiary, nor any of their respective properties or assets, has any immunity from the jurisdiction of any court or from any legal process (whether through service or notice, attachment to prior judgment, attachment in aid of execution or otherwise) under the laws of any jurisdiction in which it is organized, headquartered or doing business,

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(xlvii) *Environmental Laws*. Except as disclosed in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus, the Company and each of its subsidiaries (i) are, and at all times prior hereto were, in compliance in all material respects with all laws, regulations, ordinances, rules, orders, judgments, decrees, permits or other legal requirements of any governmental authority, including without limitation any international, foreign, national, state, provincial, regional, or local authority, relating to pollution, the protection of human health or safety, the environment, or natural resources, or to use, handling, storage, manufacturing, transportation, treatment, discharge, disposal or release of hazardous or toxic substances or wastes, pollutants or contaminants (“*Environmental Laws*”) applicable to such entity, which compliance in all material respects includes, without limitation, obtaining, maintaining and complying with all permits and authorizations and approvals required by Environmental Laws to conduct their respective businesses, and (ii) have not received notice or otherwise have knowledge of any actual or alleged violation of Environmental Laws, or of any actual or potential liability for or other obligation concerning the presence, disposal or release of hazardous or toxic substances or wastes, pollutants or contaminants. Except as described in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus, (x) there are no proceedings that are pending, or to the Company’s knowledge, threatened, against the Company or any of its subsidiaries under Environmental Laws in which a governmental authority is also a party, other than such proceedings regarding which it is reasonably believed no monetary sanctions of \$100,000 or more will be imposed, (y) the Company and its subsidiaries are not aware of any issues regarding compliance with Environmental Laws, including any pending or proposed Environmental Laws, or liabilities or other obligations under Environmental Laws or concerning hazardous or toxic substances or wastes, pollutants or contaminants, that could reasonably be expected to have a material effect on the capital expenditures, earnings or competitive position of the Company and its subsidiaries, and (z) none of the Company and its subsidiaries anticipates material capital expenditures relating to Environmental Laws.

(xlviii) *ERISA Compliance*. (i) Each “employee benefit plan” (within the meaning of Section 3(3) of the Employee Retirement Security Act of 1974, as amended (“*ERISA*”)) for which the Company or any member of its “Controlled Group” (defined as any organization which is a member of a controlled group of corporations within the meaning of Section 414 of the Internal Revenue Code of 1986, as amended (the “*Code*”)) would have any liability (each a “*Plan*”) has been maintained in compliance in all material respects with its terms and with the requirements of all applicable statutes, rules and regulations including ERISA and the Code; (ii) no prohibited transaction, within the meaning of Section 406 of ERISA or Section 4975 of the Code, has occurred with respect to any Plan excluding transactions effected pursuant to a statutory or administrative exemption; (iii) with respect to each Plan subject to Title IV of ERISA (A) no “reportable event” (within the meaning of Section 4043(c) of ERISA) has occurred or is reasonably expected to occur that would result in a material loss to the Company, (B) no “accumulated funding deficiency” (within the meaning of Section 302 of ERISA or Section 412 of the

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Code), whether or not waived, has occurred or is reasonably expected to occur, (C) the fair market value of the assets under each Plan that is required to be funded exceeds the present value of all benefits accrued under such Plan (determined based on those assumptions used to fund such Plan), and (D) neither the Company or any member of its Controlled Group has incurred, or reasonably expects to incur, any liability under Title IV of ERISA (other than contributions to the Plan or premiums to the Pension Benefit Guaranty Corporation in the ordinary course and without default) in respect of a Plan (including a “multiemployer plan”, within the meaning of Section 4001(c)(3) of ERISA); and (iv) each Plan that is intended to be qualified under Section 401(a) of the Code is so qualified and nothing has occurred, to the Company’s knowledge, whether by action or by failure to act, which would cause the loss of such qualification.

(xlix) Registration Rights. Except as disclosed in the Registration Statement and the Time of Sale Disclosure Package, there are no contracts, agreements or understandings between the Company and any person granting such person the right to require the Company to file a registration statement under the Securities Act with respect to any securities of the Company owned or to be owned by such person. There are no contracts, agreements or understandings to require the Company to include any such securities in the securities proposed to be offered pursuant to this Agreement.

(l) Labor Matters. No labor problem or dispute with the employees of the Company exists or, to the knowledge of the Company, is threatened or imminent that could reasonably be expected to have a Material Adverse Effect. Neither the Company nor any subsidiary is in violation of or has received notice of any violation with respect to any federal or state law relating to discrimination in the hiring, promotion or pay of employees, nor any applicable federal or state wage and hour laws, nor any state law precluding the denial of credit due to the neighborhood in which a property is situated, the violation of any of which could reasonably be expected to have a Material Adverse Effect.

(li) Statistical Information. The statistical and market-related data included in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus and the consolidated financial statements of the Company and its subsidiaries included or incorporated by reference in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus are based on or derived from sources that the Company believes to be reliable in all material respects.

(lii) 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 Shares by the Company or the execution and delivery of this Agreement.

(liii) 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 Shares.

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(liv) Certificate as Representation and Warranty. Any certificate signed by any officer of the Company and delivered to the Representatives or the Representatives' counsel in connection with the offering of the Shares shall be deemed a representation and warranty by the Company to Underwriters as to the matters covered thereby.

(lv) Forward-looking Statements. No forward-looking statement (within the meaning of Section 27A of the Act and Section 21E of the Exchange Act) contained in the Registration Statement, the Pricing Disclosure Package or the Prospectus has been made or reaffirmed without a reasonable basis or has been disclosed other than in good faith.

### 3. Purchase, Sale and Delivery of Shares.

(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 3,333,334 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 \$7.0125 per share. The obligation of each Underwriter to the Company shall be to purchase from the Company that number of Firm Shares (to be adjusted by the Representatives to avoid fractional shares) which represents the same proportion of the number of Firm Shares to be sold by the Company pursuant to this Agreement as the number of Firm Shares set forth opposite the name of such Underwriter in Schedule I hereto represents to the total number of Firm Shares to be purchased by all Underwriters pursuant to this Agreement. In making this Agreement, each Underwriter is contracting severally and not jointly; except as provided in paragraph (c) of this Section 3 and in Section 8 hereof, the agreement of each Underwriter is 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 Shares 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, with respect to 500,000 Option Shares, 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 and from time to time within 30 days after the effective date of this Agreement upon notice (confirmed in writing) by the Representatives to the Company setting forth the aggregate number of Option Shares as to which the several Underwriters are exercising the option and the date and time, as determined by you, when the Option Shares are to

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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 or later than the tenth 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 Representatives in such manner as the Representatives deem 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.* If the Representatives so elect, delivery of the Firm Shares or the Option Shares may be made by credit through full fast transfer to the accounts at DTC designated by the Representatives. If the Representatives so elect, certificates for the Shares shall be registered in such names and denominations as the Representatives shall have requested at least two full business days prior to the First Closing Date (or the Second Closing Date, as the case may be) and will be made available for checking at a reasonable time preceding the First Closing Date or the Second Closing Date, as applicable, at the office of Piper Jaffray & Co., 800 Nicollet Mall, Minneapolis, Minnesota, or such other location as may be mutually acceptable. In the event that the Firm Shares (and Option Shares, if elected by the Underwriters) are not delivered to the Underwriters by 2:30 p.m., New York City time, on the First Closing Date (and the Second Closing Date, if elected by the Underwriter), the Company will return payment of the full purchase price to the Underwriters’ agent, Pershing LLC, via same day funds by 4:30 p.m., New York City time. The Company shall remain liable to Pershing LLC for the full amount of the purchase price and any costs associated with recovering the purchase price until the full amount has been received by Pershing LLC.

(d) *Purchase by Representatives on Behalf of Underwriters.* It is understood that you, individually and not as Representatives of the several Underwriters, may (but shall not be obligated to) make payment to the Company on behalf of any Underwriter for the Shares to be purchased by such Underwriter. Any such payment by you shall not relieve any such Underwriter of any of its obligations hereunder. Nothing herein contained shall constitute any of the Underwriters an unincorporated association or partner with the Company.

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#### 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 Representatives 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 Representatives 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 Shares, 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 Representatives and the Company may deem appropriate, and if requested by the Representatives, an issuer free writing prospectus containing the selling terms of the Shares and such other information as the Company and the Representatives 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 Representatives 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 at the earliest possible moment. 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 Shares 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

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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 Representatives 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 Representatives 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 (z) has notified or promptly will notify you when such amendment or supplement was or is filed with the Commission where so required to be filed.

(iv) *Blue Sky Qualifications*. The Company shall take or cause to be taken all necessary action to qualify the Shares 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 Shares, except that the Company shall not be required in connection therewith to qualify as a foreign corporation 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 three complete manually signed copies 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.

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(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 of the Rules and Regulations.

(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 Shares, (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 Shares, 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 filing fees and fees and reasonable and documented disbursements of the Underwriters' counsel incurred in connection with the qualification of the Shares 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 reasonable and documented fees and disbursements of Underwriters' counsel incident to any required review and approval by FINRA of the terms of the sale of the Shares, (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 Shares, 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. Notwithstanding anything contained in this Agreement to the contrary, any reimbursement or payment of the Underwriters' expenses, including, but not limited to, the fees of the Underwriters' counsel, shall not exceed \$100,000 in the aggregate. If this Agreement is terminated by the Representatives pursuant to Section 9 hereof or if the sale of the Shares 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 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 out-of-pocket accountable disbursements (including but not limited to fees and disbursements of counsel, printing expenses, travel expenses, postage, facsimile and telephone charges) incurred by the Underwriters in connection with their investigation, preparing to market and marketing the Shares or in contemplation of performing their obligations hereunder; provided that reimbursement of these out-of-pocket accountable disbursements shall not exceed \$50,000 in the aggregate.

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(viii) Use of Proceeds. The Company will apply the net proceeds from the sale of the Shares 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 (i) to the Underwriters pursuant to this Agreement, (ii) for issuances and grants to directors, officers, employees and consultants of the Company pursuant to the Company Stock Plans, (iii) for issuances pursuant to the exercise of outstanding options or warrants or conversion of convertible securities described as outstanding in the Registration Statement, the Time of Sale Disclosure Package or the Prospectus, (iv) for issuances of common stock or securities convertible into or exercisable for shares of common stock in connection with any acquisition, collaboration, licensing or other strategic transaction or any debt financing transaction, so long as the purpose of such issuance is not solely for capital raising; provided, that in the case of clause (iv), the aggregate amount of such issuances shall not exceed 5% of the total outstanding shares of Common Stock of the Company on the date hereof and (v) for issuances of warrants exercisable for shares of common stock in connection with any debt financing transaction; provided, that in the case of clause (v), such issuance shall not occur prior to 45 days after the date of the Prospectus and shall not exceed 1% of the total outstanding shares of Common Stock of the Company on the date hereof. 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 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 has constituted, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Shares.

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(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 and its subsidiaries 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, including its subsidiaries, is made known to them by others within those entities.

(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 Representatives, and each Underwriter severally represents and agrees that, unless it obtains the prior written consent of the Company and the Representatives, it has not made and will not make any offer relating to the Shares 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 Representatives 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 Rule 164 and Rule 433 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 V, 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.

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(xvi) *Emerging Growth Company*. The Company will cease to be an “emerging growth company” as of December 31, 2019. The Company will promptly notify the Representative if the Company ceases to be an emerging growth company at any time prior to December 31, 2019.

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 issuer 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 issuer 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 issuer free writing prospectus shall have been issued; no proceedings for the issuance of such an order shall have been initiated or, to the knowledge of the Company, threatened; any request of the Commission for additional information (to be included in the Registration Statement, the Time of Sale Disclosure Package, the Prospectus, any issuer 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 (other than pursuant to any plans

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or arrangements approved by the Board of Directors and existing on the date hereof), or any Material Adverse Effect or any development involving a prospective Material Adverse Effect (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 Shares 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 Representatives of the several Underwriters, the opinions of Cooley LLP, counsel for the Company, dated such Closing Date and addressed to you in in form and substance reasonably satisfactory to the Representatives.

(f) Opinion of Underwriters' Counsel. On each Closing Date, there shall have been furnished to you, as Representatives of the several Underwriters, such opinion or opinions from Goodwin Procter 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 Shares, 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 Representatives of the several Underwriters, shall have received accountant's "comfort" letters of (a) PricewaterhouseCoopers LLP and (b) BDO USA 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 Representatives 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;

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(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 Shares for offering or sale or notice that would prevent use of the Registration Statement, 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) Certificate of Chief Financial Officer. The Representatives shall have received on each Closing Date a certificate of the chief financial officer of the Company, certifying as to the accuracy of certain financial information contained in the Registration Statement, the Pricing Disclosure Package and the Prospectus in the form and substance reasonably satisfactory to the Representatives.

(j) Lock-Up Agreement. 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 Shares to be delivered on the Closing Date will be listed on Nasdaq.

All such opinions, certificates, letters and other documents will be in compliance with the provisions hereof only if they are 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), 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 430B 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

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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, (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, or (iii) any investigation or proceeding by any governmental authority, commenced or threatened (whether or not any Underwriter is a target of or party to such investigation or proceeding), 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, its affiliates, directors and officers 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, from and against any losses, claims, damages or liabilities to which the Company 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 the Company 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

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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 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 Representatives, it is advisable for the Underwriters to be represented as a group by separate counsel, the Representatives shall have the right to employ a single counsel (in addition to local counsel) to represent the Representatives 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. 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 Shares 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

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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 Shares 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 Shares by the Underwriters set forth in the first paragraph under the subheading "Discounts and Commissions" and, the two paragraphs under the subheading "Price Stabilization, Short Positions and Penalty Bids and the subheading "Affiliations" under the caption "Underwriting" in the Time of Sale Disclosure Package and in the Prospectus 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 Shares 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 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.

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(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 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 not be under any 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 thenon-defaulting Underwriters or by any other party or parties, the Representatives 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 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 Representatives 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 Nasdaq Stock Market 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

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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 Shares. 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, 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 Shares 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 or hand delivered via courier to the Representatives 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; if to the Company, shall be mailed or delivered to it at River Oaks Tower, 3730 Kirby Drive, Suite 1200, Houston, Texas 77098 Attention: Chief Financial Officer. 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 Shares from any of the several Underwriters.

13. **Absence of Fiduciary Relationship**. The Company acknowledges and agrees that: (a) the Representatives have been retained solely to act as underwriters in connection with the sale of the Shares and that no fiduciary, advisory or agency relationship between the Company and the Representatives has been created in respect of any of the transactions contemplated by this Agreement, irrespective of whether the Representatives have advised or are advising the Company on other matters; (b) the price and other terms of the Shares set forth in this Agreement were established by the Company following discussions and arms-length negotiations with the

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Representatives 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 Representatives 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 Representatives have 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 Representatives are acting, in respect of the transactions contemplated by this Agreement, solely for the benefit of the Representatives and the other Underwriters, and not on behalf of the Company; (e) it waives to the fullest extent permitted by law, any claims it may have against the Representatives 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 Representatives 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]

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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,

**ARAVIVE, INC.**

By /s/ Jay Shepard  
Jay Shepard  
Chief Executive Officer

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

**PIPER JAFFRAY & CO.**

By: /s/ Chad E. Huber  
Managing Director

**CANTOR FITZGERALD & CO.**

By: /s/ Bala Murty  
Managing Director

[Signature Page to Underwriting Agreement]

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**SCHEDULE I**

<u>Underwriter</u>	<u>Number of Firm Shares(1)</u>
Piper Jaffray & Co	2,500,001
Cantor Fitzgerald & Co	833,333
<b>Total</b>	<b>3,333,334</b>

(1) The Underwriters may purchase up to an additional 500,000 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**

Number of Firm Shares Being Offered: 3,333,334  
Number of Option Shares Being Offered: 500,000  
Offering Price Per Share: \$7.50  
Underwriting Discounts and Commissions: 6.5%

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**SCHEDULE IV**

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

Directors

Srinivas Akkaraju, M.D., Ph.D.

Amato Giaccia, Ph.D.

Robert E. Hoffman

Shahzad Malik, M.D.

Raymond Tabibiazar, M.D.

Eric Zhang

Officers

Jay Shepard

Vinay Shah

Gail McIntyre

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**SCHEDULE V**

**Subsidiaries**

Versartis Cayman Holdings Company (Cayman Islands)

Versartis GmbH (Switzerland)

Aravive Biologics, Inc. (Delaware)

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**SCHEDULE VI**

**Testing the Waters Communications**

Not applicable.

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**EXHIBIT A**

**Form of Lock-Up**

, 2019

PIPER JAFFRAY & CO.  
CANTOR FITZGERALD & CO.  
As Representatives of the Underwriters

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

c/o Cantor Fitzgerald & Co.  
499 Park Avenue  
New York, NY 10022

Re: Proposed Public Offering of Aravive, Inc.

Ladies and Gentlemen:

The undersigned understands that Piper Jaffray & Co. (“Piper Jaffray”) and Cantor Fitzgerald & Co. (along with Piper Jaffray, the “Representatives”) will act as representatives for a group of underwriters (the “Underwriters”) that proposes to enter into a Purchase Agreement (the “Purchase Agreement”) with Aravive, Inc. (the “Company”), providing for the public offering (the “Offering”) by the Underwriters of common stock of the Company (the “Common Stock”) pursuant to the Company’s registration statement on Form S-3 (File No. 333-219765) filed with the U.S. Securities and Exchange Commission and declared effective on September 11, 2017.

In consideration of the Underwriters’ agreement to purchase and make the Offering, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the undersigned hereby agrees that without the prior written consent of the Representatives, on behalf of the Underwriters (which consent may be withheld in the Representatives’ sole discretion), the undersigned will not, during the period commencing on the date hereof and ending 90 days after the date of the Purchase Agreement (the “Lock-Up Period”), directly or indirectly: (1) offer, sell, contract to sell, pledge, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend, or otherwise transfer or dispose of any shares of the Common Stock, or any securities convertible into or exercisable or exchangeable for the Common Stock; (2) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of the Common Stock, or any securities convertible into or exchangeable for the Common Stock, regardless of whether any such transaction described herein is to be settled by delivery of the Common Stock or such other securities, or by delivery of cash or otherwise; (3) make any demand for, or exercise any right with respect to, the registration of any shares of the Common Stock or any security convertible into or exercisable of exchangeable for the Common Stock; or (4) publicly announce any intention to do any of the foregoing.

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The restrictions set forth in the immediately preceding paragraph shall not apply to:

- (1) any transfers made by the undersigned (a) as a bona fide gift or gifts, (b) to a trust the beneficiaries of which are exclusively the undersigned or Family Members of the undersigned, (c) by will or intestate succession upon the death of the undersigned (d) transfers by operation of law pursuant to a qualified domestic order or in connection with a divorce settlement, (e) transfers to any partnership, corporation or limited liability company which is controlled by the undersigned and/or by any such Family Member(s) of the undersigned, (f) if the undersigned is a corporation, partnership, limited liability company, trust or other business entity (x) 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 (y) 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, (g) if the undersigned is a trust, transfers to the beneficiary of such trust, and (h) transfers by testate succession or intestate succession,
- (2) transactions relating to Common Stock or other securities convertible into or exercisable or exchangeable for Common Stock acquired in open market transactions after completion of the Offering,
- (3) the entry, by the undersigned, at any time on or after the date of the Purchase Agreement, of any trading plan providing for the sale of Common Stock by the undersigned, which trading plan meets the requirements of Rule 10b5-1(c) under the Exchange Act, provided, however, that such plan does not provide for, or permit, the sale of any Common Stock during the Lock-Up Period and no public announcement or filing is voluntarily made or required regarding such plan during the Lock-Up Period,
- (4) any transfers made by the undersigned to the Company to satisfy tax withholding obligations pursuant to the Company's equity incentive plans or arrangements disclosed in the Prospectus (as defined in the Purchase Agreement) or to pay the exercise price of any options issued under any such plan or arrangement which expires during the Lock-Up Period; and
- (5) any transfers in connection with a bona fide third party tender offer, merger, consolidation or other similar transaction made to all common stock holders involving a change of control of the issuer, provided that in the event that the tender offer, merger, consolidation or other such transaction is not completed, the undersigned's Common Stock shall remain subject to the restrictions contained herein.

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provided, however, that in the case of any transfer described in clauses (1)(a), (b), (e), (f) and (g) above, it shall be a condition to the transfer that the transferee executes and delivers to the Representatives, acting on behalf of the Underwriters, not later than one business day prior to such transfer, a written agreement, in substantially the form of this agreement (it being understood that any references to Family Member in the agreement executed by such transferee shall expressly refer only to the immediate family of the undersigned and not to the Family Member of the transferee) and otherwise satisfactory in form and substance to the Representatives. (For purposes of this Agreement, "Family Member" shall mean any relationship by blood, marriage, domestic partnership or adoption, not more remote than first cousin)

For avoidance of doubt, nothing in this Agreement prohibits the undersigned from exercising any options or warrants to purchase Common Stock (which exercises may be effected on a cashless basis to the extent the instruments representing such options or warrants permit exercises on a cashless basis), it being understood that any Common Stock issued upon such exercises will be subject to the restrictions of this Agreement, except to the extent such securities are withheld by the Company to cover tax liabilities.

The undersigned hereby agrees and consents to the entry of stop transfer instructions with the Company's transfer agent against the transfer of securities of the Company held by the undersigned, except in compliance with this Lock-Up Agreement.

In addition, the undersigned hereby waives any and all notice requirements and other rights with respect to the registration of any securities pursuant to any agreement, instrument, understanding or otherwise, including any registration rights agreement or similar agreement, to which the undersigned is a party or under which the undersigned is entitled to any right or benefit, provided that such waiver shall apply only to the Offering.

The undersigned recognizes that the Offering will benefit the undersigned and the Company. The undersigned acknowledges that the Underwriters are relying on the representations and agreements of the undersigned contained in this Lock-Up Agreement in carrying out the Offering and in entering into the Purchase Agreement.

The undersigned hereby represents and warrants that the undersigned has full power and authority to enter into this Lock-Up Agreement. This Lock-Up Agreement is irrevocable and all authority herein conferred or agreed to be conferred shall survive the death or incapacity of the undersigned and any obligations of the undersigned shall be binding upon the heirs, personal representatives, successors and assigns of the undersigned.

The undersigned shall be released from all obligations under this Lock-Up Agreement (i) if the Purchase Agreement does not become effective on or before December 20, 2019 (provided, however, that the Company may extend the December 20, 2019 date by up to three months with written notice to the undersigned prior thereto), (ii) if the Purchase Agreement (other than the provisions thereof which survive termination) shall terminate or be terminated prior to payment for and delivery of the securities to be sold thereunder, or (iii) if the Representatives, on the one hand, or the Company, on the other hand, informs the other, prior to the execution of the Purchase Agreement, that it has determined not to proceed with the Offering.

*[signature page follows]*

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Very truly yours,

Printed Name of Holder

By \_\_\_\_\_  
Signature

Printed Name of Person Signing  
(and indicate capacity of person signing if  
signing as custodian, trustee, or on behalf of  
an entity)



The Chrysler Building  
405 Lexington Avenue, 26th Floor  
New York, New York 10174  
Telephone (212) 907-6457  
Facsimile: (212) 208-4657

November 27, 2019

The Board of Directors  
Aravive, Inc.  
River Oaks Tower  
3730 Kirby Drive, Suite 1200  
Houston, Texas 77098

Ladies and Gentlemen:

We have acted as counsel to Aravive, Inc., a Delaware corporation (the "Company"), in connection with the issuance of up to 3,833,334 shares (including up to 500,000 shares subject to the underwriters' 30-day option to purchase additional shares) (the "Shares") of common stock of the Company, par value \$0.0001 per share (the "Common Stock"). The Shares are included in a Registration Statement on Form S-3 (File No. 333-219765) (the "Registration Statement"), filed with the Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Securities Act"), and declared effective by the Commission on September 11, 2017, a base prospectus, dated September 11, 2017, included in the Registration Statement at the time it originally became effective (the "Base Prospectus"), a preliminary prospectus supplement, dated November 26, 2019, filed with the Commission pursuant to Rule 424(b)(5) under the Securities Act (together with the Base Prospectus, the "Preliminary Prospectus") and a prospectus supplement, dated November 27, 2019, filed with the Commission pursuant to Rule 424(b)(5) under the Securities Act (together with the Base Prospectus, the "Prospectus"). The Shares are being sold pursuant to a Purchase Agreement, dated November 27, 2019, by and among the Company, Piper Jaffray & Co. and Cantor Fitzgerald & Co., as representative of the several underwriters listed therein (the "Purchase Agreement").

As counsel to the Company, we have examined the Registration Statement, the Preliminary Prospectus and the Prospectus, and the originals or copies, certified or otherwise identified to our satisfaction, of such other documents, corporate records, certificates of public officials and other instruments as we have deemed necessary for the purposes of rendering this opinion and we are familiar with the proceedings taken and proposed to be taken by the Company in connection with the authorization, issuance and sale of the Shares. In our examination, we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals and the conformity with the originals of all documents submitted to us as copies.

Based upon and subject to the foregoing, we are of the opinion that the Shares have been duly and validly authorized, and upon their issuance, delivery and payment therefor in the manner contemplated by the Registration Statement and Purchase Agreement, will be legally issued, fully paid and non-assessable.

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The Board of Directors  
Aravive, Inc.  
November 27, 2019  
Page 2

We express no opinion as to matters governed by any laws other than the General Corporation Law of the State of Delaware (including all related provisions of the Delaware Constitution and all reported judicial decisions interpreting the General Corporation Law of the State of Delaware and the Delaware Constitution) and the federal laws of the United States of America, as in effect on the date hereof.

We hereby consent to the reference to our firm under the caption "Legal Matters" in the Preliminary Prospectus and the Prospectus and to the filing of this opinion as Exhibit 5.1 to the Company's Current Report on Form 8-K relating to the issuance and sale of the Shares pursuant to the Purchase Agreement. In giving our consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission thereunder.

Very truly yours,

*/s/ Gracin & Marlow, LLP*

GRACIN & MARLOW, LLP



### Aravive Announces Proposed Public Offering of Common Stock

**Houston, Texas, November 26, 2019**—**Aravive, Inc. (Nasdaq: ARAV)**, (“Aravive”) a clinical-stage biopharmaceutical company developing treatments designed to halt the progression of life-threatening diseases, including cancer and fibrosis, today announced that it has commenced an underwritten public offering of the sale of its shares of common stock. In connection with this offering, Aravive intends to grant the underwriters a 30-day option to purchase up to an additional 15% of the shares of common stock sold in the public offering. All of the shares are being offered by Aravive. Aravive currently intends to use the net proceeds from this offering primarily for research, development and manufacturing of product candidates, and for other general corporate purposes including, to acquire, license or invest in complementary businesses, technologies, product candidates or other intellectual property.

Piper Jaffray and Cantor Fitzgerald & Co. are acting as joint book runners for the offering. The offering is subject to market conditions, and there can be no assurance as to whether or when the offering may be completed, or as to the actual size or terms of the offering.

The offering is being made pursuant to an effective shelf registration statement on FormS-3 (File No. 333-219765) previously filed with and declared effective by the Securities and Exchange Commission (“SEC”). A preliminary prospectus supplement and accompanying base prospectus describing the terms of the proposed offering will be filed with the SEC and will be available on the SEC’s website at <http://www.sec.gov>. Electronic copies of the preliminary prospectus may also be obtained, when available, by contacting Piper Jaffray & Co., Attention: Prospectus Department, 800 Nicollet Mall, J12S03, Minneapolis, MN 55402, or by email at [prospectus@pjc.com](mailto:prospectus@pjc.com), or by phone at (800) 747-3924; or Cantor Fitzgerald & Co., Attention: Capital Markets, 499 Park Ave., 6th Floor, New York, New York 10022, or by email at [prospectus@cantor.com](mailto:prospectus@cantor.com). Before investing in this offering, interested parties should read in their entirety the prospectus supplement and the accompanying prospectus and the other documents that Aravive has filed with the SEC that are incorporated by reference in such prospectus supplement and the accompanying prospectus, which provide more information about Aravive and such offering.

This press release shall not constitute an offer to sell nor the solicitation of an offer to buy, nor shall there be any sale of 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.

#### About Aravive

Aravive is a clinical-stage biopharmaceutical company developing treatments designed to halt the progression of life-threatening diseases, including cancer and fibrosis. Aravive’s lead product candidate, AVB-500, is an ultrahigh-affinity decoy protein that targets the GAS6-AXL signaling pathway. By capturing serum GAS6, AVB-500 starves the AXL pathway of its signal, potentially halting the biological programming that promotes disease progression. AXL receptor signaling plays an important role in multiple types of malignancies by promoting metastasis, cancer cell survival, resistance to treatments, and immune suppression. The GAS6-AXL signaling pathway also plays a significant role in fibrogenesis. Aravive is evaluating AVB-500 in platinum-resistant ovarian cancer, and intends to expand development into additional oncology and fibrotic indications.

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**Forward Looking Statements**

This press release includes forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 on our current expectations and projections about future events. In some cases, forward-looking statements can be identified by terminology such as “may,” “should,” “potential,” “continue,” “expects,” “anticipates,” “intends,” “plans,” “believes,” “estimates,” and similar expressions. These statements are based upon current beliefs, expectation, and assumptions and include statements regarding the timing and completion of the proposed public offering and intended use of proceeds. These statements are subject to a number of risks and uncertainties, many of which are difficult to predict, including market conditions, whether the proposed offering is completed, the success of Aravive’s clinical programs, and the other factors described in Aravive’s filings with the SEC. The information in this release is provided only as of the date of this release, and Aravive undertakes no obligation to update any forward-looking statements contained in this release based on new information, future events, or otherwise, except as required by law.

**Contacts for Aravive:****Investors:**

Christina Tartaglia  
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### Aravive Announces Pricing of Public Offering of Common Stock

**Houston, Texas, November 27, 2019**—**Aravive, Inc. (Nasdaq: ARAV)**, (“Aravive”) a clinical-stage biopharmaceutical company developing treatments designed to halt the progression of life-threatening diseases, including cancer and fibrosis, today announced the pricing of its previously announced underwritten public offering of 3,333,334 shares of its common stock at a public offering price of \$7.50 per share. Aravive expects to receive gross proceeds of approximately \$25 million, before deducting underwriting discounts and commissions and other estimated offering expenses payable by Aravive.

In connection with this offering, Aravive has granted the underwriters a 30-day option to purchase up to 500,000 additional shares of common stock at the public offering price. All of the shares are being offered by Aravive. The offering is expected to close on or about December 2, 2019, subject to the satisfaction of customary closing conditions.

Aravive currently intends to use the net proceeds from this offering primarily for research, development and manufacturing of product candidates, and for other general corporate purposes including, to acquire, license or invest in complementary businesses, technologies, product candidates or other intellectual property.

Piper Jaffray and Cantor Fitzgerald & Co. are acting as joint book runners for the offering.

The offering is being made pursuant to an effective shelf registration statement on FormS-3 (File No. 333-219765) previously filed with and declared effective by the Securities and Exchange Commission (“SEC”). A preliminary prospectus supplement and accompanying base prospectus describing the terms of the proposed offering was filed with the SEC on November 26, 2019 and a final prospectus supplement and accompanying base prospectus relating to the offering will be filed on or about November 29, 2019. The preliminary prospectus supplement is available, and the final prospectus supplement will be available, on the SEC’s website at <http://www.sec.gov>. Electronic copies of the preliminary prospectus and the final prospectus supplement, when available, may also be obtained by contacting Piper Jaffray & Co., Attention: Prospectus Department, 800 Nicollet Mall, J12S03, Minneapolis, MN 55402, or by email at [prospectus@pjc.com](mailto:prospectus@pjc.com), or by phone at (800) 747-3924; or Cantor Fitzgerald & Co., Attention: Capital Markets, 499 Park Ave., 6th Floor, New York, New York 10022, or by email at [prospectus@cantor.com](mailto:prospectus@cantor.com). Before investing in this offering, interested parties should read in their entirety the prospectus supplement and the accompanying prospectus and the other documents that Aravive has filed with the SEC that are incorporated by reference in such prospectus supplement and the accompanying prospectus, which provide more information about Aravive and such offering.

This press release shall not constitute an offer to sell nor the solicitation of an offer to buy, nor shall there be any sale of 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.

#### About Aravive

Aravive is a clinical-stage biopharmaceutical company developing treatments designed to halt the progression of life-threatening diseases, including cancer and fibrosis. Aravive’s lead product candidate, AVB-500, is an ultrahigh-affinity decoy protein that targets the GAS6-AXL signaling pathway. By capturing serum GAS6, AVB-500 starves the AXL pathway of its signal, potentially halting the biological programming that promotes disease progression. AXL receptor signaling plays an important role in multiple types of malignancies by promoting metastasis, cancer cell survival, resistance to treatments, and immune suppression. The GAS6-AXL signaling pathway also plays a significant role in fibrogenesis. Aravive is evaluating AVB-500 in platinum-resistant ovarian cancer, and intends to expand development into additional oncology and fibrotic indications.

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**Forward Looking Statements**

This press release includes forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 on our current expectations and projections about future events. In some cases, forward-looking statements can be identified by terminology such as “may,” “should,” “potential,” “continue,” “expects,” “anticipates,” “intends,” “plans,” “believes,” “estimates,” and similar expressions. These statements are based upon current beliefs, expectation, and assumptions and include statements regarding the completion of the public offering and intended use of proceeds. These statements are subject to a number of risks and uncertainties, many of which are difficult to predict, including the success of Aravive’s clinical programs, and the other factors described in Aravive’s filings with the SEC. The information in this release is provided only as of the date of this release, and Aravive undertakes no obligation to update any forward-looking statements contained in this release based on new information, future events, or otherwise, except as required by law.

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