

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

Amendment No. 1
to
FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

ADAPTIVE BIOTECHNOLOGIES CORPORATION

(Exact name of registrant as specified in its charter)

Washington
(State or other jurisdiction of
incorporation or organization)

2836
(Primary Standard Industrial
Classification Code Number)
1551 Eastlake Avenue East, Suite 200
Seattle, Washington 98102
(206) 659-0067

27-0907024
(I.R.S. Employer
Identification Number)

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Chad Robins
Chief Executive Officer
1551 Eastlake Avenue East, Suite 200
Seattle, Washington 98102
(206) 659-0067

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Andrew Ledbetter
Tyler Hollenbeck
DLA Piper LLP (US)
701 Fifth Avenue, Suite 6900
Seattle, Washington 98104
(206) 839-4800

Copies to:
Stacy Taylor
Senior Vice President and General Counsel
Adaptive Biotechnologies Corporation
1551 Eastlake Avenue East, Suite 200
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(206) 659-0067

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Fenwick & West LLP
1191 Second Avenue, Floor 10
Seattle, Washington 98101
(206) 389-4510

Approximate date of commencement of proposed sale to the public: As soon as practicable after this registration statement becomes effective.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box:

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering:

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering:

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering:

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer
Non-accelerated filer

Accelerated filer
Smaller reporting company
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 7(a)(2)(B) of the Securities Act.

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the registration statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

EXPLANATORY NOTE

This Amendment No. 1 (“Amendment”) to the Registration Statement on Form S-1 (File No. 333-235989) (“Registration Statement”) of Adaptive Biotechnologies Corporation is being filed solely for the purpose of filing Exhibit 1.1, as indicated in Item 16 of Part II of the Registration Statement. Accordingly, this Amendment consists only of the facing page, this explanatory note, Part II of the Registration Statement, the signature page to this Amendment and the filed exhibit. The preliminary prospectus is unchanged and has been omitted from this Amendment.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution

The following is a statement of the costs and expenses, other than the underwriting discounts and commissions, to be incurred by us in connection with the distribution of the securities registered under this registration statement. All amounts are estimated except the SEC registration fee and the FINRA filing fee.

<u>Item</u>	<u>Amount</u>
SEC Registration Fee	\$ 33,318
FINRA Filing Fee	39,002
Accounting Fees and Expenses	120,000
Legal Fees and Expenses	500,000
Transfer Agent Fees	10,000
Printing and Engraving Expenses	115,000
Miscellaneous	32,680
Total	<u>\$850,000</u>

Item 14. Indemnification of Directors and Officers

RCW 23B.08.320 permits a Washington corporation to, through its articles of incorporation, eliminate or limit the personal liability of a director to the corporation or its shareholders for monetary damages for conduct as a director, except for the following:

- i. acts or omissions that involve intentional misconduct by a director or a knowing violation of law by a director;
- ii. conduct violating RCW 23B.08.310 relating to unlawful distributions;
- iii. any transaction from which the director will personally receive a benefit in money, property or services to which the director is not legally entitled; and
- iv. any act or omission occurring prior to the date when the provision in the articles of incorporation eliminating or limiting liability becomes effective.

RCW 23B.08.510 authorizes a Washington corporation to indemnify an individual made a party to a proceeding because the individual is or was a director against liability incurred in the proceeding if:

- i. the individual acted in good faith; and
- ii. the individual reasonably believed (a) in the case of conduct in the individual's official capacity with the corporation, that the individual's conduct was in its best interests, and (b) in all other cases, that the individual's conduct was at least not opposed to its best interests; and
- iii. in the case of any criminal proceeding, the individual had no reasonable cause to believe the individual's conduct was unlawful.

Notwithstanding the forgoing, a Washington corporation may not indemnify a director under RCW 23B.08.510 in connection with (a) a proceeding by or on behalf of the corporation in which the director was adjudged liable to the corporation or (b) any other proceeding charging improper personal benefit to the director, in which the director was adjudged liable on the basis that personal benefit was improperly received by the director. Additionally, where a proceeding is by or on behalf of the corporation, the indemnification permitted under RCW 23B.08.510 is limited to reasonable expenses incurred in connection with the proceeding.

RCW 23B.08.520 mandates a Washington corporation to indemnify a director who was wholly successful, on the merits or otherwise, in the defense of any proceeding to which the director was a party because of being a director of the corporation against reasonable expenses incurred by the director in connection with the proceeding, unless such indemnification is limited in the corporation's articles of incorporation. Our Articles of Incorporation do not contain any such limitation.

RCW 23B.08.540 permits court-ordered indemnification, unless a corporation's articles of incorporation provides otherwise. Pursuant to this provision, in the absence of a contrary provision in a corporation's articles of incorporation, a director who is a party to a proceeding may apply for indemnification or advance of expenses to the court conducting the proceeding or to another court of competent jurisdiction, and such court may order indemnification or advance of expenses if it makes certain determinations.

Under RCW 23B.08.570, unless a corporation's articles of incorporation provide otherwise, an officer of a Washington corporation who is not a director is also entitled to mandatory indemnification under RCW 23B.08.520 and court-ordered indemnification under RCW 23B.08.540, each of which sections are summarized above, to the same extent as a director. Further, a Washington corporation may indemnify an officer, employee or agent of the corporation under RCW 23B.08.510, to the same extent as a director.

RCW 23B.08.580 permits a corporation to purchase and maintain insurance on behalf of any individual who is or was a director, officer, employee or agent of the corporation, or who while a director, officer, employee or agent of the corporation, is or was serving at the corporation's request as a director, officer, partner, trustee, employee or agent of another corporation, partnership, joint venture, trust, employee benefit plan or other enterprise, against liability asserted against or incurred by the individual in that capacity or arising from the individual's status as a director, officer, employee or agent, whether or not the corporation would have power to indemnify such individual against the same liability under RCW 23B.08.510 and 23B.08.520.

Our Articles of Incorporation and our Bylaws provide that we will indemnify our directors and officers to the fullest extent permitted under Washington law.

We have entered into indemnification agreements with each of our current directors and executive officers, and may enter into indemnification agreements with future directors and executive officers, to provide such directors and officers, additional contractual assurances regarding the scope of the indemnification set forth in our Articles of Incorporation and our Bylaws and to provide additional procedural protections.

We may also purchase and maintain liability insurance on behalf of our directors, officers, employees, and agents. We currently maintain a liability insurance policy pursuant to which our directors and officers may be indemnified against liability incurred as a result of serving in their capacities as directors and officers, subject to certain exclusions.

The underwriting agreement is expected to provide for indemnification by the underwriters of us and our officers and directors, and by us of the underwriters, against certain liabilities, including liabilities arising under the Securities Act.

Item 15. Recent Sales of Unregistered Securities

The following sets forth information regarding all unregistered securities we have sold since January 17, 2017.

(a) Sales of Preferred Stock

On December 11, 2017 we entered into a Series F-1 Preferred Stock Purchase Agreement, pursuant to which we issued and sold an aggregate of 4,686,649 shares of our Series F-1 convertible preferred stock at a price per share of \$10.6686, for an aggregate purchase price of \$49,999,984.

No underwriters were involved in the foregoing sales of securities. The sales of securities described above were deemed to be exempt from registration pursuant to Section 4(a)(2) of the Securities Act, including Regulation D and Rule 506 promulgated thereunder, as transactions by an issuer not involving a public offering. All of the purchasers in these transactions represented to us in connection with their purchase that they were acquiring the securities for investment and not distribution, that they could bear the risks of the investment and could hold the securities for an indefinite period of time. Such purchasers received written disclosures that the securities had not been registered under the Securities Act and that any resale must be made pursuant to a registration or an available exemption from such registration. All of the foregoing securities are deemed restricted securities for the purposes of the Securities Act.

(b) Grants and Exercises of Stock Options

In connection with our Sequentia Acquisition, we assumed stock options to purchase an aggregate of 1,574,045 shares of our Series E-1 convertible preferred stock with exercise prices ranging from \$0.10 to \$0.92 per share to employees, directors and consultants pursuant to our Sequentia Plan. During the period beginning January 17, 2017 and ending July 1, 2019, 555,234 shares of Series E-1 convertible preferred stock were issued upon the exercise of stock options pursuant to our Sequentia Plan, which were each converted into one share of our common stock in July 2019 upon the closing of our initial public offering.

During the period beginning January 17, 2017 and ending July 1, 2019, we granted stock options to purchase an aggregate of 10,259,452 shares of our common stock, with exercise prices ranging from \$6.27 to \$9.62 per share, to employees, directors and consultants pursuant to the 2009 Plan. During the period beginning January 17, 2017 and ending July 1, 2019, 1,570,940 shares of common stock were issued upon the exercise of stock options pursuant to the 2009 Plan.

The issuances of the securities described above were exempt from registration pursuant to Section 4(a)(2) of the Securities Act as transactions by an issuer not involving a public offering or Rule 701 promulgated under the Securities Act as transactions pursuant to compensatory benefit plans. The shares of common stock issued upon the exercise of options are deemed to be restricted securities for purposes of the Securities Act.

Item 16. Exhibits and Financial Statement Schedules.

(a) Exhibits

<u>Exhibit Number</u>	<u>Exhibit Title</u>	<u>Form</u>	<u>Incorporated by Reference</u>			<u>Filed/ Submitted Herewith</u>
			<u>File No.</u>	<u>Exhibit</u>	<u>Filing Date</u>	
1.1	Form of Underwriting Agreement					X
3.1	Amended and Restated Articles of Incorporation	8-K	001-38957	3.1	7/1/2019	
3.2	Amended and Restated Bylaws	8-K	001-38957	3.2	7/1/2019	
4.1	Seventh Amended and Restated Investors' Rights Agreement among the Registrant and certain of its shareholders, dated May 30, 2019	S-1	333-231838	4.1	5/30/2019	
4.2	Warrant dated April 21, 2014, issued by the Registrant to Alexandria Equities, LLC	S-1	333-231838	4.4	5/30/2019	
5.1	Opinion of DLA Piper LLP (US)	S-1	333-235989	5.1	1/21/2020	
10.1†	Strategic Collaboration and License Agreement between Genentech, Inc. and the Registrant, dated December 19, 2018	S-1	333-231838	10.1	5/30/2019	
10.2†	Strategic Collaboration Agreement between Microsoft Corporation and the Registrant, dated December 11, 2017	S-1	333-231838	10.2	5/30/2019	
10.3†	Master Terms & Conditions of Sale between Illumina, Inc. and the Registrant, dated May 28, 2019	S-1/A	333-231838	10.3	6/17/2019	
10.4	Amended and Restated Side Letter Agreement among Viking Global Equities LP, Viking Global Equities II LP, VGE III Portfolio Ltd., Viking Long Fund Master Ltd. and the Registrant, dated May 8, 2019	S-1	333-231838	10.5	5/30/2019	
10.5	Form of Amended and Restated Employment Agreement between the Registrant and certain of its executive officers	S-1	333-231838	10.7	5/30/2019	
10.6	Form of Amended and Restated Employment Agreement between the Registrant and each of Lance Baldo, MD and Francis T. Lo	S-1	333-231838	10.8	5/30/2019	
10.7	Form of Restated Non-Employee Director Change in Control Agreement between the Registrant and each of its non-employee directors	S-1	333-231838	10.9	5/30/2019	
10.8	Executive Severance Agreement between the Registrant and Chad Cohen, dated May 1, 2019	S-1	333-231838	10.10	5/30/2019	
10.9	Executive Severance Agreement between the Registrant and Lance Baldo, MD, dated April 22, 2019	S-1	333-231838	10.11	5/30/2019	
10.10	Executive Severance Agreement between the Registrant and Charles Sang, dated May 1, 2019	S-1	333-231838	10.12	5/30/2019	

<u>Exhibit Number</u>	<u>Exhibit Title</u>	<u>Form</u>	<u>Incorporated by Reference</u>			<u>Filed/ Submitted Herewith</u>
			<u>File No.</u>	<u>Exhibit</u>	<u>Filing Date</u>	
10.11	Form of Indemnification Agreement between the Registrant and each of its directors and executive officers	S-1	333-231838	10.13	5/30/2019	
10.12	Adaptive Biotechnologies Corporation Non-Employee Director Compensation Policy	S-1/A	333-231838	10.14	6/17/2019	
10.13	Adaptive Biotechnologies Corporation 2009 Equity Incentive Plan and form of award agreement thereunder	S-1	333-231838	10.15	5/30/2019	
10.14	Adaptive Biotechnologies Corporation 2019 Equity Incentive Plan and form of award agreement thereunder	10-Q	001-38957	10.12	8/13/2019	
10.15	Adaptive Biotechnologies Corporation 2019 Employee Stock Purchase Plan	S-1/A	333-231838	10.17	6/17/2019	
10.16	Lease Agreement between ARE-Seattle No. 11, LLC and Adaptive TCR Corporation, dated July 21, 2011, as amended by Amendment No. 1, dated August 26, 2011, Amendment No. 2, dated June 30, 2014, Amendment No. 3, dated November 5, 2015, Amendment No. 4, dated December 23, 2015, and Amendment No. 5, dated June 6, 2016	S-1	333-231838	10.18	5/30/2019	
10.17†	Sixth Amendment to Lease Agreement between Adaptive Biotechnologies Corporation and ARE-Seattle No. 11, LLC, dated August 2, 2019	8-K	001-38957	10.1	8/7/2019	
10.18†	Lease Agreement between Adaptive Biotechnologies Corporation and ARE-Seattle No. 12, LLC, dated August 2, 2019	8-K	001-38957	10.2	8/7/2019	
10.19†	IVD Test Kit Development and Supply Agreement between Illumina, Inc. and Adaptive Biotechnologies Corporation, effective September 23, 2019	10-Q	001-38957	10.3	11/12/2019	
23.1	Consent of Independent Registered Public Accounting Firm	S-1	333-235989	23.1	1/21/2020	
23.2	Consent of DLA Piper LLP (US) (included in Exhibit 5.1)	S-1	333-235989	23.2	1/21/2020	
24.1	Power of Attorney (included on the signature page)	S-1	333-235989	24.1	1/21/2020	
101.INS	XBRL Instance Document	—	—	—	—	
101.SCH	XBRL Taxonomy Extension Schema Document	—	—	—	—	
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document	—	—	—	—	

<u>Exhibit Number</u>	<u>Exhibit Title</u>	<u>Incorporated by Reference</u>				<u>Filed/ Submitted Herewith</u>
		<u>Form</u>	<u>File No.</u>	<u>Exhibit</u>	<u>Filing Date</u>	
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document	—	—	—	—	
101.LAB	XBRL Taxonomy Extension Label Linkbase Document	—	—	—	—	
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document	—	—	—	—	

† Portions of this exhibit have been omitted pursuant to Item 601 of Regulation S-K promulgated under the Securities Act because the information is not material and would be competitively harmful if publicly disclosed.

(b) Financial statement schedules. Schedules not listed above have been omitted because the information required to be set forth therein is not applicable or is shown either in the financial statements or the notes thereto.

Item 17. Undertakings

The undersigned registrant hereby undertakes that:

- (1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b) (1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.
- (2) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of Seattle, State of Washington, on January 22, 2020.

Adaptive Biotechnologies Corporation

By: /s/ Chad Robins
Chad Robins
Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement has been signed below by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Chad Robins</u> Chad Robins	Chief Executive Officer and Director <i>(Principal Executive Officer)</i>	January 22, 2020
<u>/s/ Chad Cohen</u> Chad Cohen	Chief Financial Officer <i>(Principal Financial and Accounting Officer)</i>	January 22, 2020
<u>*</u> Kevin Conroy	Director	January 22, 2020
<u>*</u> Eric Dobmeier	Director	January 22, 2020
<u>*</u> David Goel	Director	January 22, 2020
<u>*</u> Michelle Griffin	Director	January 22, 2020
<u>*</u> Robert Hershberg, PhD, MD	Director	January 22, 2020
<u>*</u> Peter Neupert	Director	January 22, 2020
<u>*</u> Michael Pellini, MD	Director	January 22, 2020
<u>*</u> Andris Zoltners, PhD	Director	January 22, 2020

*By: /s/ Chad Robins
Chad Robins
Attorney-in-Fact

Adaptive Biotechnologies Corporation

Common Stock

Underwriting Agreement

, 2020

J.P. Morgan Securities LLC,
Goldman Sachs & Co. LLC
BofA Securities, Inc.

As representatives of the several Underwriters
named in Schedule II hereto

c/o J.P. Morgan Securities LLC
383 Madison Avenue
New York, New York 10179

c/o Goldman Sachs & Co. LLC
200 West Street
New York, New York 10282-2198

c/o BofA Securities, Inc.
One Bryant Park
New York, New York 10036

Ladies and Gentlemen:

The shareholders named in Schedule I hereto (the "Selling Shareholders") of Adaptive Biotechnologies Corporation, a Washington corporation (the "Company"), propose, subject to the terms and conditions stated in this underwriting agreement (this "Agreement"), to sell to the several Underwriters named in Schedule II hereto (the "Underwriters"), for whom J.P. Morgan Securities LLC, Goldman Sachs & Co. LLC and BofA Securities, Inc. are acting as representatives (the "Representatives"), an aggregate of [●] shares (the "Firm Shares") of the common stock, par value \$0.0001 per share ("Stock"), of the Company and, at the election of the Underwriters, up to [●] additional shares (the "Optional Shares") of Stock. The Firm Shares and the Optional Shares that the Underwriters elect to purchase pursuant to Section 2 hereof being collectively called the "Shares".

1. (i) The Company represents and warrants to, and agrees with, each of the Underwriters that:

(a) A registration statement on Form S-1 (File No. 333-[●]) (the "Initial Registration Statement") in respect of the Shares has been filed with the Securities and Exchange Commission (the "Commission"); the Initial Registration Statement and any

post-effective amendment thereto, each in the form heretofore delivered to the Representatives, have been declared effective by the Commission in such form; other than a registration statement, if any, increasing the size of the offering (a "Rule 462(b) Registration Statement"), filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended (the "Act"), which became effective upon filing, no other document with respect to the Initial Registration Statement has been filed with the Commission; and no stop order suspending the effectiveness of the Initial Registration Statement, any post-effective amendment thereto or the Rule 462(b) Registration Statement, if any, has been issued and no proceeding for that purpose has been initiated or, to the Company's knowledge, threatened by the Commission (any preliminary prospectus included in the Initial Registration Statement or filed with the Commission pursuant to Rule 424(a) of the rules and regulations of the Commission under the Act is hereinafter called a "Preliminary Prospectus"; the various parts of the Initial Registration Statement and the Rule 462(b) Registration Statement, if any, including all exhibits thereto and including the information contained in the form of final prospectus filed with the Commission pursuant to Rule 424(b) under the Act in accordance with Section 5(a) hereof and deemed by virtue of Rule 430A under the Act to be part of the Initial Registration Statement at the time it was declared effective, each as amended at the time such part of the Initial Registration Statement became effective or such part of the Rule 462(b) Registration Statement, if any, became or hereafter becomes effective, are hereinafter collectively called the "Registration Statement"; the Preliminary Prospectus relating to the Shares that was included in the Registration Statement immediately prior to the Applicable Time (as defined in Section 1(i)(c) hereof) is hereinafter called the "Pricing Prospectus"; such final prospectus, in the form first filed pursuant to Rule 424(b) under the Act, is hereinafter called the "Prospectus;" any oral or written communication with potential investors undertaken in reliance on Section 5(d) of the Act or Rule 163B under the Act is hereinafter called a "Testing-the-Waters Communication"; and any Testing-the-Waters Communication that is a written communication within the meaning of Rule 405 under the Act is hereinafter called a "Written Testing-the-Waters Communication"; and any "issuer free writing prospectus" as defined in Rule 433 under the Act relating to the Shares is hereinafter called an "Issuer Free Writing Prospectus");

(b) (A) No order preventing or suspending the use of any Preliminary Prospectus or any Issuer Free Writing Prospectus has been issued by the Commission, and (B) each Preliminary Prospectus, at the time of filing thereof, conformed in all material respects to the requirements of the Act and the rules and regulations of the Commission thereunder, and 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; *provided, however*, that this representation and warranty shall not apply to any statements or omissions made in reliance upon and in conformity with the Underwriter Information (as defined in Section 9(c) of this Agreement) or the Selling Shareholder Information (as defined in Section 1(ii)(f) of this Agreement);

(c) For the purposes of this Agreement, the "Applicable Time" is [•] p.m. (Eastern time) on the date of this Agreement. The Pricing Prospectus, as supplemented by the information listed on Schedule III(c) hereto, taken together (collectively, the "Pricing Disclosure Package"), as of the Applicable Time, did not, and as of each Time of Delivery (as defined in Section 4(a) of this Agreement) will not, include any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; and each Issuer

Free Writing Prospectus and each Written Testing-the-Waters Communication does not conflict with the information contained in the Registration Statement, the Pricing Prospectus or the Prospectus and each Issuer Free Writing Prospectus and each Written Testing-the-Waters Communication, as supplemented by and taken together with the Pricing Disclosure Package, as of the Applicable Time, did not, and as of each Time of Delivery will not, include any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided, however, that this representation and warranty shall not apply to statements or omissions made in reliance upon and in conformity with the Underwriter Information or the Selling Shareholder Information;

(d) The Registration Statement conforms, and the Prospectus and any further amendments or supplements to the Registration Statement and the Prospectus will conform, in all material respects to the requirements of the Act and the rules and regulations of the Commission thereunder and do not and will not, as of the applicable effective date as to each part of the Registration Statement, as of the applicable filing date as to the Prospectus and any amendment or supplement thereto, and as of each Time of Delivery, 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 not misleading; provided, however, that this representation and warranty shall not apply to any statements or omissions made in reliance upon and in conformity with the Underwriter Information or the Selling Shareholder Information;

(e) The Company has not, since the date of the latest audited financial statements included in the Registration Statement, the Pricing Disclosure Package and the Pricing Prospectus, (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 or (ii) entered into any transaction or agreement (whether or not in the ordinary course of business) that is material to the Company or incurred any liability or obligation, direct or contingent, that is material to the Company; and, since the respective dates as of which information is given in the Registration Statement, the Pricing Disclosure Package and the Pricing Prospectus, there has not been (x) any change in the capital stock of the Company (other than as a result of (i) the exercise, if any, of stock options or the award, if any, of stock options or restricted stock in the ordinary course of business pursuant to the Company Stock Plans (as defined below) that are described in the Registration Statement, the Pricing Disclosure Package, the Pricing Prospectus and the Prospectus or (ii) the issuance, if any, of stock upon conversion of Company securities as described in the Registration Statement, the Pricing Disclosure Package, the Pricing Prospectus and the Prospectus) or long-term debt of the Company or (y) any Material Adverse Effect (as defined below); as used in this Agreement, "Material Adverse Effect" shall mean any material adverse change or effect, or any development involving a prospective material adverse change or effect, in or affecting (i) the business, properties, general affairs, management, financial position, shareholders' equity or results of operations of the Company, except as set forth or contemplated in the Pricing Prospectus, or (ii) the ability of the Company to perform its obligations under this Agreement, including the issuance and sale of the Shares, or to consummate the transactions contemplated in the Pricing Prospectus and the Prospectus;

(f) The Company does not own any real property and the Company has good and marketable title to all personal property owned by it, in each case free and clear of all liens, encumbrances and defects except such as are described in the Pricing Prospectus or such as do not materially affect the value of such property and do not interfere with the use made and proposed to be made of such property by the Company; and any real property and buildings held under lease by the Company are, to the Company's knowledge, held by the Company under valid, subsisting and enforceable leases with such exceptions as are not material and do not materially interfere with the use made and proposed to be made of such property and buildings by the Company;

(g) The Company has been (i) duly incorporated and is validly existing as a corporation under the laws of its jurisdiction of organization, with power and authority (corporate and other) to own and/or lease its properties and conduct its business as described in the Registration Statement, the Pricing Disclosure Package and the Pricing Prospectus, and (ii) duly qualified as a foreign corporation for the transaction of business and is in good standing (where such concept exists) under the laws of each other jurisdiction in which it owns or leases properties or conducts any business so as to require such qualification, except, in the case of this clause (ii), where the failure to be so qualified or in good standing would not, individually or in the aggregate, have a Material Adverse Effect;

(h) The Company has no subsidiaries;

(i) The Company has an authorized capitalization as set forth in the Registration Statement, the Pricing Disclosure Package and the Pricing Prospectus and all of the issued shares of capital stock of the Company, including the Shares to be sold by the Selling Shareholders, have been duly and validly authorized and issued and are fully paid and non-assessable and conform in all material respects to the description of the capital stock of the Company contained in the Registration Statement, the Pricing Disclosure Package and the Prospectus; and the sale of the Shares is not subject to any preemptive or similar rights that have not been complied with or otherwise effectively waived;

(j) The sale of the Shares by the Selling Shareholders and compliance by the Company with this Agreement and the consummation of the transactions contemplated in this Agreement and the Pricing Prospectus will not conflict with or result in a breach or violation of any of the terms or provisions of, or constitute a default under, (A) any indenture, mortgage, deed of trust, loan agreement, lease or other agreement or instrument to which the Company is a party or by which the Company is bound or to which any of the property or assets of the Company is subject, (B) the articles of incorporation or bylaws (or other applicable organizational document) of the Company, or (C) any statute or any judgment, order, rule or regulation of any court or governmental agency or body having jurisdiction over the Company or any of its properties, except, in the case of clauses (A) or (C), for such defaults, breaches, or violations that would not, individually or in the aggregate, have a Material Adverse Effect; and no consent, approval, authorization, order, registration or qualification of or with any such court or governmental agency or body is required for the consummation by the Company of the transactions contemplated by this Agreement, except such as have been obtained under the Act, the approval by the Financial Industry Regulatory Authority ("FINRA") of the underwriting terms and arrangements and such consents, approvals, authorizations, registrations or qualifications as may be required under state securities or Blue Sky laws in connection with the purchase and distribution of the Shares by the Underwriters;

(k) The Company is not (i) in violation of its articles of incorporation or bylaws (or other applicable organizational document), (ii) in violation of any statute or any judgment, order, rule or regulation of any court or governmental agency or body having jurisdiction over the Company or any of its properties, or (iii) in default in the performance or observance of any obligation, agreement, covenant or condition contained in any indenture, mortgage, deed of trust, loan agreement, lease or other agreement or instrument to which it is a party or by which it or any of its properties may be bound, except, in the case of the foregoing clauses (ii) and (iii), for such defaults as would not, individually or in the aggregate, have a Material Adverse Effect;

(l) The statements set forth in the Registration Statement, the Pricing Disclosure Package, and the Prospectus under the captions “Description of Capital Stock” and “Shares Eligible for Future Sale”, insofar as they purport to constitute a summary of the terms of the Stock, and under the captions “Material U.S. Federal Income Tax Consequences to Non-U.S. Holders” and “Underwriting”, insofar as they purport to describe the provisions of the laws and documents referred to therein, are accurate, complete and fair in all material respects;

(m) Other than as set forth in the Registration Statement, the Pricing Disclosure Package, and the Prospectus, there are no legal or governmental proceedings pending to which the Company or, to the Company’s knowledge, any officer or director of the Company, is a party or of which any property or assets of the Company or, to the Company’s knowledge, any officer or director of the Company, is the subject which, if determined adversely to the Company (or such officer or director), would individually or in the aggregate have a Material Adverse Effect; and, to the Company’s knowledge, no such proceedings are threatened or contemplated by governmental authorities or others;

(n) The Company is not an “investment company”, as such term is defined in the Investment Company Act of 1940, as amended (the “Investment Company Act”);

(o) At the time of filing the Initial Registration Statement and any post-effective amendment thereto, at the earliest time thereafter that the Company or any offering participant made a bona fide offer (within the meaning of Rule 164(h)(2) under the Act) of the Shares, and at the date hereof, the Company was not and is not an “ineligible issuer,” as defined under Rule 405 under the Act;

(p) Ernst & Young LLP, who have certified certain financial statements of the Company is an independent registered public accounting firm as required by the Act and the rules and regulations of the Commission thereunder;

(q) The Company maintains a system of internal control over financial reporting (as such term is defined in Rule 13a-15(f) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”)) that (i) complies with the requirements of the Exchange Act, (ii) has been designed by the Company’s principal executive officer and principal financial officer, or under their supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles and (iii) is sufficient to provide reasonable assurance that (A) transactions are executed in accordance with management’s general or specific authorization, (B) transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles and to maintain accountability for assets, (C) access to assets is

permitted only in accordance with management's general or specific authorization; (D) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences; and (E) the interactive data in eXtensible Business Reporting Language, if any, included or incorporated by reference in the Registration Statement is accurate to the extent required; and the Company's internal control over financial reporting is effective and the Company is not aware of any material weaknesses in its internal control over financial reporting;

(r) Since the date of the latest audited financial statements included in the Registration Statement, the Pricing Disclosure Package, and the Prospectus, there has been no change in the Company's internal control over financial reporting that has materially and adversely affected, or is reasonably likely to materially and adversely affect, the Company's internal control over financial reporting;

(s) The Company maintains disclosure controls and procedures (as such term is defined in Rule 13a-15(e) under the Exchange Act) that comply with the requirements of the Exchange Act; such disclosure controls and procedures have been designed to ensure that material information relating to the Company is made known to the Company's principal executive officer and principal financial officer by others within the Company; and such disclosure controls and procedures are effective;

(t) This Agreement has been duly authorized, executed and delivered by the Company;

(u) Neither the Company nor any director or officer of the Company, nor, to the knowledge of the Company, any agent, employee, affiliate of the Company or other person associated with or acting on behalf of the Company has (i) directly or indirectly made, offered, promised or authorized any unlawful payment, contribution, gift, entertainment or other unlawful benefit or expense (or taken any act in furtherance thereof); (ii) made, offered, promised or authorized any direct or indirect unlawful payment; or (iii) violated or is in violation of any provision of the U.S. Foreign Corrupt Practices Act of 1977, as amended, the Bribery Act 2010 of the United Kingdom or any other applicable anti-bribery or anti-corruption law;

(v) The operations of the Company are and have been conducted at all times in compliance with the requirements of applicable anti-money laundering laws, including, but not limited to, the Bank Secrecy Act of 1970, as amended by the USA PATRIOT ACT of 2001, and the rules and regulations promulgated thereunder, and the anti-money laundering laws of the various jurisdictions in which the Company conducts business (collectively, the "Money Laundering Laws") and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company with respect to the Money Laundering Laws is pending or, to the knowledge of the Company, threatened;

(w) Neither the Company nor any director or officer of the Company, nor, to the knowledge of the Company, any agent, employee or affiliate of the Company is currently the subject or the target of any sanctions administered or enforced by the U.S. Government, including, without limitation, the Office of Foreign Assets Control of the U.S. Department of the Treasury, or the U.S. Department of State and including, without limitation, the designation as a "specially designated national" or "blocked person," the European Union, Her Majesty's Treasury, the United Nations Security Council, or other relevant sanctions authority (collectively, "Sanctions"), nor is the Company located, organized or resident in a country or territory that is the subject or target of Sanctions;

(x) The financial statements included in the Registration Statement, the Pricing Prospectus and the Prospectus, together with the related schedules and notes, present fairly in all material respects the financial position of the Company at the dates indicated and the statement of operations, shareholders' equity and cash flows of the Company for the periods specified; said financial statements have been prepared in conformity with U.S. generally accepted accounting principles ("GAAP") applied on a consistent basis throughout the periods involved. The selected financial data and the summary financial information included in the Registration Statement, the Pricing Prospectus and the Prospectus present fairly in all material respects the information shown therein and have been compiled on a basis consistent with that of the audited financial statements included therein. Except as included therein, no historical or pro forma financial statements or supporting schedules are required to be included in the Registration Statement, the Pricing Prospectus or the Prospectus under the Act or the rules and regulations promulgated thereunder;

(y) From the time of initial confidential submission of a registration statement relating to the Company's initial public offering with the Commission (or, if earlier, the first date on which a Section 5(d) Communication was made) through the date hereof, the Company has been and is an "emerging growth company" as defined in Section 2(a)(19) of the Act (an "Emerging Growth Company");

(z) The Company owns or has obtained valid and enforceable licenses for the inventions, patent applications, patents, trademarks, trade names, service names, copyrights, trade secrets and other intellectual property described in the Registration Statement, the Pricing Disclosure Package and the Prospectus as being owned or licensed by it or which are necessary for the conduct of its business as currently conducted or planned to be conducted as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus (collectively, "Intellectual Property"). There are no third parties who have rights to any Intellectual Property other than (i) third-party licensors or (ii) third-party joint owners whose joint ownership interest has been recorded in the United States Patent & Trademark Office ("USPTO") except for customary reversionary rights of third-party licensors. To the Company's knowledge, the Company is not infringing or misappropriating the intellectual property rights of third parties, and the Company is the owner of the Intellectual Property purported to be owned by it, either as the sole owner or jointly owned with a third-party, and has the valid right to use such Intellectual Property free and clear of all material liens, security interests, or encumbrances. The Company is not obligated to pay a material royalty, grant a license, or provide other material consideration to any third party in connection with the Intellectual Property, except as discussed in the Registration Statement, the Pricing Disclosure Package and the Prospectus. Beyond pending appeals at the European Patent Office related to the Company's patents EP2364368 and EP2387627, there is no other pending or, to the Company's knowledge, threatened action, suit, proceeding or claim by others: (A) challenging the Company's rights in or to any Intellectual Property, including a claim to inventorship of any Intellectual Property; (B) challenging the validity, patentability, enforceability or scope of any Intellectual Property; or (C) asserting that the Company infringes or otherwise violates, or would, upon the commercialization of any product or service described in the Registration Statement and the Prospectus as under development, infringe, misappropriate or violate, any patent, trademark, trade name, service name, copyright, trade secret or other proprietary

rights of others. The Company has complied with the terms of each agreement pursuant to which Intellectual Property has been licensed to the Company, and all such agreements are in full force and effect;

(aa) Except as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, all patents and patent applications owned by or licensed to the Company or under which the Company has rights have been duly and properly filed and maintained; the parties prosecuting such applications have complied with their duty of candor and disclosure to the USPTO in connection with such applications; and the Company is not aware of any information required to be disclosed to the USPTO that was not disclosed to the USPTO and which would preclude the grant of a patent in connection with any such application or would reasonably be expected to form the basis of a finding of invalidity or unenforceability with respect to any patents that have been issued with respect to such applications;

(bb) The Company and, to the Company's knowledge, its directors, officers and employees have operated and currently are in compliance in all material respects with all applicable health care laws, rules and regulations, and guidance and policies of the jurisdictions in which the Company is conducting business, including without limitation, the Federal Food and Drug and Cosmetics Act (21 U.S.C. §§ 301 et seq.), the Clinical Laboratory Improvement Amendments of 1988 (42 U.S.C. § 263a) federal Anti-kickback Statute (42 U.S.C. § 1320a-7b(b)), the Anti-Inducement Law (42 U.S.C. § 1320a-7a(a)(5)), the civil False Claims Act (31 U.S.C. §§ 3729 et seq.), the administrative False Claims Law (42 U.S.C. § 1320a-7b(a)), the Health Insurance Portability and Accountability Act of 1996 (42 U.S.C. § 1320d et seq.) ("HIPAA"), the Health Information Technology for Economic and Clinical Health Act of 2009 (the "HITECH Act"), the exclusion laws (42 U.S.C. § 1320a-7), the Medicare Program (Title XVIII of the Social Security Act), the Medicaid Program (Title XIX of the Social Security Act), and any applicable state or local laws, each as amended from time to time (the "Health Care Laws"). The Company possesses, or qualifies for applicable exemptions to, in all material respects, such valid and current registrations, listings, approvals, clearances, licenses, certificates, authorizations or permits and supplements or amendments thereto issued or required by the appropriate state, federal or foreign regulatory agencies or bodies necessary to conduct its business ("Permits") as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, including, without limitation, all such Permits required by the United States Food and Drug Administration (the "FDA"), the United States Department of Health and Human Services, the United States Centers for Medicare & Medicaid Services, Centers for Disease Control and Prevention, the European Medicines Agency or any other state, federal or foreign agencies or bodies engaged in the regulation of medical devices, laboratory tests, drugs, biologics, or biohazardous materials (each, an "Applicable Regulatory Authority"), and the Company has not received any notice of proceedings relating to the revocation or modification of, or non-compliance with, any Permit.

(cc) The Company's products, laboratory tests and facilities are in compliance in all material respects with all applicable (i) Health Care Laws, including, without limitation, the FDA's quality system regulation at 21 CFR Part 820, and, to the extent applicable, any similar requirements of Applicable Regulatory Authorities in countries outside the United States, and all federal and state laws regarding laboratory testing safety, accuracy, or quality, and (ii) voluntary registrations, listings, approvals, clearances, licenses, certificates, accreditations, authorizations or permits held by the Company, including without limitation,

accreditation by the College of American Pathologists (the “Voluntary Accreditations”). The Company has not had any facility subject to an Applicable Regulatory Authority (including FDA) shutdown or import or export prohibition, nor has the Company received any “warning letters,” “untitled letters,” requests to make changes to the tests or products of the Company, processes or operations, notice of inspectional observation, or similar correspondence or notice from the FDA or other Applicable Regulatory Authority, or any entity issuing a Voluntary Accreditation, alleging or asserting material noncompliance with Health Care Laws or material noncompliance with relevant requirements for Voluntary Accreditation, other than those that have been satisfactorily addressed and/or closed out with the FDA or other Applicable Regulatory Authority, or the entity issuing a Voluntary Accreditation, and, to the Company’s knowledge, neither the FDA nor any other Applicable Regulatory Authority, nor any entity issuing a Voluntary Accreditation, is considering such action.

(dd) Except as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, none of the Company’s product candidates which are subject to marketing clearance or approval requirements from any Applicable Regulatory Authority have received such clearance or approval. All clinical and pre-clinical studies and trials, and all validation studies, conducted by or on behalf of or sponsored by the Company with respect to the Company’s product candidates, including any such studies and trials that are described in the Registration Statement and the Prospectus, or the results of which are referred to in the Registration Statement and the Prospectus, as applicable (collectively, “Company Trials”), were, and if still pending are, to the Company’s knowledge, being conducted in all material respects in accordance with all applicable Health Care Laws of the Applicable Regulatory Authorities and, to the extent required, current Good Clinical Practices and Good Laboratory Practices, any investigational device exemptions, to the extent required, their protocols and any other applicable rules, regulations and policies of the jurisdiction in which such trials and studies are being conducted or were conducted; the descriptions in the Registration Statement, the Pricing Disclosure Package and the Prospectus of the results of any Company Trials are accurate and complete descriptions in all material respects and fairly present in all material respects the data derived therefrom; the Company has no knowledge of any other studies or trials not described in the Registration Statement and the Prospectus, the results of which are inconsistent with or call into question the results described or referred to in the Registration Statement and the Prospectus; the Company has not received, nor does the Company have knowledge that any of its respective collaboration partners have received, any written notices, correspondence or other communications from the Applicable Regulatory Authorities or any other governmental entity requiring or threatening the termination, material modification or suspension of Company Trials, other than ordinary course communications with the Applicable Regulatory Authorities with respect to modifications in connection with the design and implementation of such studies or trials, and, to the Company’s knowledge, there are no reasonable grounds for the same. No investigational device exemption or comparable submission filed by or on behalf of the Company with the FDA has been terminated or suspended due to concerns regarding the safety or effectiveness of the investigational product. Where required by the Health Care Laws or an Applicable Regulatory Authority, the Company has obtained (or caused to be obtained) informed consent by or on behalf of each human subject who participated in a Company Trial. In using or disclosing patient information received by the Company in connection with a Company Trial, the Company has complied in all material respects with all applicable laws and regulatory rules or requirements. To the Company’s knowledge, none of the Company Trials involved any investigator who has been disqualified as a clinical investigator or has been found by the FDA to have engaged in scientific misconduct;

(ee) The Company is, and at all prior times was, in compliance in all material respects with all applicable data privacy and security laws and regulations, including without limitation, as applicable, HIPAA, as amended by the HITECH Act, the European Union General Data Protection Regulation (“GDPR”) (EU 2016/679), the applicable provisions of the Federal Trade Commission Act, and all other applicable laws and regulations with respect to Personal Data that have been announced as of the date hereof as becoming effective within 12 months after the date hereof, and for which any non-compliance with same would be reasonably likely to create a material liability as soon as they take effect (collectively, the “Privacy Laws”). To ensure compliance with the Privacy Laws, the Company has in place and is in compliance with commercially reasonable policies and procedures relating to data privacy and security and the collection, storage, use, disclosure, handling, and analysis of Personal Data (the “Policies”) as applicable. For the purposes of this Section 1(i)(ff), “Personal Data” means (i) a natural person’s name, street address, telephone number, e-mail address, photograph, social security number or tax identification number, driver’s license number, passport number, credit card number, bank information, or customer or account number; (ii) Protected Health Information as defined by HIPAA; (iii) “personal data” as defined by GDPR; and (iv) any other piece of information that allows the identification of such natural person or permits the collection or analysis of any data related to an identified person’s health or sexual orientation. The Company has since inception made all disclosures to users or customers required by applicable laws and regulatory rules or requirements, and has provided accurate notice of its Policies then in effect to its customers, employees, third party vendors and representatives as required by applicable laws and governmental regulations. None of such disclosures made or contained in any of the Policies have been materially inaccurate, misleading, deceptive or in violation of any Privacy Laws or Policies. The execution, delivery and performance of this Agreement or any other agreement referred to in this Agreement will not result in a breach of violation of any Privacy Laws or Policies. The Company further certifies that it: (i) has not received notice of any actual or potential liability under or relating to, or actual or potential violation of, any of the Privacy Laws, and has no knowledge of any event or condition that would reasonably be expected to result in any such notice; (ii) is not currently conducting or paying for, in whole or in part, any investigation, remediation, or other corrective action pursuant to any Privacy Law; or (iii) is not a party to any order, decree, or agreement that imposes any material obligation or liability under any Privacy Law;

(ff) The Company’s information technology assets and equipment, computers, systems, networks, hardware, software, websites, applications, and databases (collectively, “IT Systems”) are adequate for, and operate and perform as required in connection with the operation of the business of the Company as currently conducted, and free and clear of all material bugs, errors, defects, Trojan horses, time bombs, malware and other corruptants. The Company has implemented and maintained commercially reasonable controls, policies, procedures, and safeguards to maintain and protect its material confidential information and the integrity, continuous operation, redundancy and security of all IT Systems and Personal Data used in connection with its business, and there have been no breaches, violations, outages or known unauthorized uses of or known accesses to same, except for those that have been remedied without material cost or liability or the duty to notify any other person, nor any incidents under internal review or investigations relating to the same. The Company is presently in compliance in all material respects with all applicable laws or statutes and all

judgments, orders, rules and regulations of any court or arbitrator or governmental or regulatory authority, internal policies and contractual obligations relating to the privacy and security of IT Systems and Personal Data and to the protection of such IT Systems and Personal Data from unauthorized use, access, misappropriation or modification;

(gg) There are no persons with registration rights or other similar rights to have any securities registered pursuant to the Registration Statement or otherwise registered by the Company under the Act except for the Shares to be sold by the Selling Shareholders hereunder or as have been validly waived or complied with in connection with the offering of the Shares;

(hh) (i) No labor disturbance by or dispute with current or former employees or officers of the Company exists or, to the Company's knowledge, is contemplated or threatened, and (ii) the Company is not aware of any existing or imminent labor disturbance by, or dispute with, the employees of any of the Company's principal suppliers, manufacturers or contractors. The Company is not a party to any collective bargaining agreement;

(ii) The Company has insurance covering its properties, operations, personnel and business, including business interruption insurance, which insurance is in amounts and insures against such losses and risks as are reasonable and is ordinary and customary for comparable companies in the same or similar businesses; and the Company (i) has not received written 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 and (ii) has no 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 at reasonable cost from similar insurers as may be necessary to continue its business;

(jj) The Company has filed all tax returns that are required to have been filed by it through the date hereof pursuant to applicable foreign, state and local law except insofar as the failure to file such returns would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect, and has paid all taxes due pursuant to such returns or pursuant to any assessment received by the Company, except for cases in which the failure to file or pay would not reasonably be expected to have a Material Adverse Effect and for such taxes, if any, as are being contested in good faith and as to which adequate reserves have been provided. The charges, accruals and reserves on the books of the Company in respect of any income and corporation tax liability for any years not finally determined are adequate to meet any assessments or re-assessments for additional income tax for any years not finally determined. No tax deficiency has been determined adversely to the Company which has had (nor does the Company have any written notice or knowledge of any tax deficiency which could reasonably be expected to be determined adversely to the Company and which would, individually or in the aggregate have) a Material Adverse Effect;

(kk) The Company has not taken and will not take, directly or indirectly, without giving effect to activities by the Underwriters, any action that is designed to or that has constituted or might reasonably be expected to cause or result in stabilization or manipulation of the price of the Shares;

(ll) The Company is not a party to any contract, agreement or understanding with any person (other than this Agreement) that would give rise to a valid claim against the Company or any Underwriter for a brokerage commission, finder's fee or like payment in connection with the offering and sale of the Shares;

(mm) To the Company’s knowledge, 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, that is required by the Act to be described in the Registration Statement and the Prospectus and that is not so described in such documents; and

(nn) (i) Each employee benefit plan, within the meaning of Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended (“ERISA”), for which the Company or any member of its “Controlled Group” (defined as any entity, whether or not incorporated, that is under common control with the Company within the meaning of Section 4001(a)(14) of ERISA or any entity that would be regarded as a single employer with the Company under Section 414(b), (c), (m) or (o) of the Internal Revenue Code of 1986, as amended (the “Code”)) would have any liability (each, a “Plan”) has been maintained in material compliance with its terms and the requirements of any applicable statutes, orders, rules and regulations, including but not limited to 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) for each Plan that is subject to the funding rules of Section 412 of the Code or Section 302 of ERISA, no Plan has failed (whether or not waived), or is reasonably expected to fail, to satisfy the minimum funding standards (within the meaning of Section 302 of ERISA or Section 412 of the Code) applicable to such Plan; (iv) no Plan is, or is reasonably expected to be, in “at risk status” (within the meaning of Section 303(i) of ERISA) and no Plan that is a “multiemployer plan” within the meaning of Section 4001(a)(3) of ERISA is in “endangered status” or “critical status” (within the meaning of Sections 304 and 305 of ERISA); (v) the fair market value of the assets of each Plan exceeds the present value of all benefits accrued under such Plan (determined based on those assumptions used to fund such Plan); (vi) no “reportable event” (within the meaning of Section 4043(c) of ERISA and the regulations promulgated thereunder) has occurred or is reasonably expected to occur; (vii) each Plan that is intended to be qualified under Section 401(a) of the Code is so qualified, and nothing has occurred, whether by action or by failure to act, which would reasonably be expected to cause the loss of such qualification; (viii) neither the Company nor any member of the Controlled Group has incurred, nor reasonably expects to incur, any liability under Title IV of ERISA (other than contributions to the Plan or premiums to the Pension Benefit Guarantee Corporation, in the ordinary course and without default) in respect of a Plan (including a “multiemployer plan” within the meaning of Section 4001(a)(3) of ERISA); and (ix) none of the following events has occurred or is reasonably likely to occur: (A) a material increase in the aggregate amount of contributions required to be made to all Plans by the Company or its Controlled Group affiliates in the current fiscal year of the Company and its Controlled Group affiliates compared to the amount of such contributions made in the Company’s and its Controlled Group affiliates’ most recently completed fiscal year; or (B) a material increase in the Company and its subsidiaries’ “accumulated post-retirement benefit obligations” (within the meaning of Accounting Standards Codification Topic 715-60) compared to the amount of such obligations in the Company and its subsidiaries’ most recently completed fiscal year; and

(oo) The Company has not engaged in any Section 5(d) Communications or distributed any Section 5(d) Writings in connection with the offering of the Shares.

(pp) The interactive data in eXtensible Business Reporting Language, if any, included in the Registration Statement fairly presents the information called for in all materials respects and has been prepared in accordance with the Commission's rules and guidelines applicable thereto to the extent required.

(ii) Each of the Selling Shareholders, severally and not jointly, represents and warrants to, and agrees with, each of the Underwriters and the Company that:

(a) All consents, approvals, authorizations and orders necessary for the execution and delivery by such Selling Shareholder of this Agreement and the Power of Attorney (if applicable) and the Custody Agreement referred to below, and for the sale and delivery of the Shares to be sold by such Selling Shareholder hereunder, have been obtained; and such Selling Shareholder has full right, power and authority to enter into this Agreement, the Power-of-Attorney (if applicable) and the Custody Agreement and to sell, assign, transfer and deliver the Shares to be sold by such Selling Shareholder hereunder;

(b) The sale of the Shares to be sold by such Selling Shareholder hereunder and the compliance by such Selling Shareholder with this Agreement, the Power of Attorney (if applicable) and the Custody Agreement and the consummation of the transactions herein and therein contemplated will not conflict with or result in a breach or violation of any of the terms or provisions of, or constitute a default under, (A) any statute, indenture, mortgage, deed of trust, loan agreement, lease or other agreement or instrument to which such Selling Shareholder is a party or by which such Selling Shareholder is bound or to which any of the property or assets of such Selling Shareholder is subject, (B) the certificate of incorporation, bylaws, partnership agreement or similar organizational document of such Selling Shareholder, as applicable (other than the Individual Selling Shareholder listed under the caption "Individual Selling Shareholder" on Schedule I hereto (the "Individual Selling Shareholder")) or (C) any statute or any judgment, order, rule or regulation of any court or governmental agency or body having jurisdiction over such Selling Shareholder or any property or assets of such Selling Shareholder except, in the case of clauses (A) or (C), as would not, individually or in the aggregate, materially impair the ability of such Selling Shareholder to consummate the transactions contemplated by this Agreement (a "Seller Material Adverse Effect"); and no consent, approval, authorization, order, registration or qualification of or with any such court or governmental body or agency is required for the performance by such Selling Shareholder of its obligations under this Agreement, the Power of Attorney (if applicable) and the Custody Agreement and the consummation by such Selling Shareholder of the transactions contemplated by this Agreement, the Power of Attorney (if applicable) and the Custody Agreement in connection with the Shares to be sold by such Selling Shareholder hereunder, except the registration under the Act of the Shares and such consents, approvals, authorizations, orders, registrations or qualifications as may be required by FINRA or under foreign or state securities or Blue Sky laws in connection with the purchase and distribution of the Shares by the Underwriters;

(c) Such Selling Shareholder has, and immediately prior to each Time of Delivery (as defined in Section 4 hereof) such Selling Shareholder will have, good and valid title to, or a valid "security entitlement" within the meaning of Section 8-501 of the New York Uniform Commercial Code (the "UCC") in respect of, the Shares to be sold by such Selling Shareholder hereunder at such Time of Delivery, free and clear of all liens, encumbrances, equities or adverse claims; and, upon delivery of such Shares and payment therefor pursuant hereto, good and valid title to such Shares, free and clear of all liens, encumbrances, equities

or adverse claims, will pass to the several Underwriters. For purposes of this representation, such Selling Shareholder may assume that when delivery of such Shares, payment therefor pursuant hereto and crediting of such Shares on the books of DTC to the securities accounts of the Underwriters occurs, (x) such Shares will have been registered in the name of Cede or another nominee designated by DTC, in each case on the Company's share registry in accordance with its charter, bylaws or other organizational document and applicable law, (y) DTC will be registered as a "clearing corporation" within the meaning of Section 8-102 of the UCC, and (z) appropriate entries to the accounts of the several Underwriters on the records of DTC will have been made pursuant to the UCC;

(d) On or prior to the date of the Pricing Prospectus, such Selling Shareholder has executed and delivered to the Underwriters a lock-up agreement in form and substance reasonably satisfactory to the Representatives;

(e) Such Selling Shareholder has not taken and will not take, directly or indirectly, any action that is designed to or that has constituted or might reasonably be expected to cause or result in stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Shares;

(f) To the extent that any statements or omissions made in the Registration Statement, any Preliminary Prospectus, the Prospectus or any amendment or supplement thereto are made in reliance upon and in conformity with written information furnished to the Company by such Selling Shareholder expressly for use therein, such Registration Statement and Preliminary Prospectus did, and the Prospectus and any further amendments or supplements to the Registration Statement and the Prospectus will not contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein not misleading; it being understood and agreed that the only information furnished by such Selling Shareholder to the Company consists of (i) the legal name of such Selling Shareholder, (ii) the number of Shares beneficially owned by such Selling Shareholder before and after the offering, (iii) any biographical information provided by the Selling Shareholders with respect to Selling Shareholders or representatives of the Selling Shareholders that are members of the board of directors included under such Selling Shareholder's name in the Registration Statement, the Pricing Disclosure Package and the Pricing Prospectus under the caption "Management" and (iv) the address and other information with respect to such Selling Shareholder (excluding percentages) which appear in the Registration Statement, the Pricing Disclosure Package and the Pricing Prospectus in the table (and corresponding footnotes) under the caption "Principal and Selling Shareholders" (with respect to each Selling Shareholder, the "Selling Shareholder Information");

(g) In order to document the Underwriters' compliance with the reporting and withholding provisions of the Tax Equity and Fiscal Responsibility Act of 1982 with respect to the transactions herein contemplated, such Selling Shareholder will deliver to the Representatives prior to or at the First Time of Delivery a properly completed and executed United States Treasury Department Form W-8BEN or Form W-9 (or other applicable form or statement specified by Treasury Department regulations in lieu thereof);

(h) Certificates in negotiable form or book-entry securities entitlements representing all of the Shares to be sold by such Selling Shareholder hereunder have been placed in custody under a Custody Agreement, substantially in the form heretofore furnished to the Representatives (the "Custody Agreement"), duly executed and delivered by such Selling Shareholder to Computershare Trust Company, N.A., as custodian (the "Custodian"), and the Individual Selling Shareholder has duly executed and delivered a Power of Attorney, substantially in the

form heretofore furnished to the Representatives (the "Power of Attorney"), appointing the persons indicated in Schedule I hereto, and each of them, as such Individual Selling Shareholder's attorneys-in-fact (the "Attorneys-in-Fact") with authority to execute and deliver this Agreement on behalf of such Individual Selling Shareholder;

(i) The Shares held in custody for such Selling Shareholder under the Custody Agreement are subject to the interests of the Underwriters hereunder; the arrangements made by such Selling Shareholder for such custody, and the appointment by the Individual Selling Shareholder of the Attorneys-in-Fact by the Power of Attorney, are to that extent irrevocable (except as otherwise described therein); the respective obligations of the Selling Shareholders hereunder shall not be terminated by operation of law, whether by the death or incapacity of any individual Selling Shareholder or, in the case of an estate or trust, by the death or incapacity of any executor or trustee or the termination of such estate or trust, or in the case of a partnership or corporation, by the dissolution of such partnership, limited liability company or corporation, or by the occurrence of any other event except as described herein or in the Custody Agreement or Power of Attorney; if any individual Selling Shareholder or any such executor or trustee should die or become incapacitated, or if any such estate or trust should be terminated, or if any such partnership, limited liability company or corporation should be dissolved, or if any other such event should occur, before the delivery of the Shares to be sold by such Selling Shareholder hereunder, certificates representing the Shares to be sold by such Selling Shareholder hereunder shall be delivered by or on behalf of the Selling Shareholders in accordance with the terms and conditions and subject to the limitations of this Agreement and of the Custody Agreements; and actions taken by the Attorneys-in-Fact pursuant to the Powers of Attorney shall be as valid as if such death, incapacity, termination, dissolution or other event had not occurred, regardless of whether or not the Custodian, the Attorneys-in-Fact, or any of them, shall have received notice of such death, incapacity, termination, dissolution or other event;

(j) Such Selling Shareholder will not directly or knowingly indirectly use the proceeds of the offering of the Shares hereunder, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other person or entity, (i) to fund or facilitate any activities of or business with any person, or in any country or territory, that, at the time of such funding, is the subject or the target of Sanctions, or in any other manner that will result in a violation by any person (including any person participating in the transaction, whether as underwriter, advisor, investor or otherwise) of Sanctions, or (ii) in furtherance of an offer, payment, promise to pay, or authorization of the payment or giving of money, or anything else of value, to any person in violation of any Money Laundering Laws or any applicable anti-bribery or anti-corruption laws; and

(k) Such Selling Shareholder is not prompted by any material information concerning the Company that is not disclosed in the Registration Statement, the Pricing Disclosure Package or the Pricing Prospectus to sell its Shares pursuant to this Agreement.

2. Subject to the terms and conditions herein set forth, (a) each of the Selling Shareholders agrees, severally and not jointly, to sell to each of the Underwriters, and each of the Underwriters agrees, severally and not jointly, to purchase from each of the Selling Shareholders, at a purchase price per share of \$[●], the number of Firm Shares (to be adjusted by the Representatives so as to eliminate fractional shares) determined by multiplying the

aggregate number of Firm Shares to be sold by each of the Selling Shareholders as set forth opposite their respective names in Schedule I hereto by a fraction, the numerator of which is the aggregate number of Firm Shares to be purchased by such Underwriter as set forth opposite the name of such Underwriter in Schedule II hereto and the denominator of which is the aggregate number of Firm Shares to be purchased by all of the Underwriters from all of the Selling Shareholders hereunder and (b) in the event and to the extent that the Underwriters shall exercise the election to purchase Optional Shares as provided below, each of the Selling Shareholders, as and to the extent indicated in Schedule I hereto agree, severally and not jointly, to sell to each of the Underwriters, and each of the Underwriters agrees, severally and not jointly, to purchase from each of the Selling Shareholders, at the purchase price per share set forth in clause (a) of this Section 2 (provided that the purchase price per Optional Share shall be reduced by an amount per share equal to any dividends or distributions declared by the Company and payable on the Firm Shares but not payable on the Optional Shares), that portion of the number of Optional Shares as to which such election shall have been exercised (to be adjusted by the Representatives so as to eliminate fractional shares) determined by multiplying such number of Optional Shares by a fraction, the numerator of which is the maximum number of Optional Shares which such Underwriter is entitled to purchase as set forth opposite the name of such Underwriter in Schedule II hereto and the denominator of which is the maximum number of Optional Shares that all of the Underwriters are entitled to purchase hereunder.

The Selling Shareholders, as and to the extent indicated in Schedule I hereto, hereby grant, severally and not jointly, to the Underwriters the right to purchase at their election up to an aggregate of [●] Optional Shares, at the purchase price per share set forth in the paragraph above, provided that the purchase price per Optional Share shall be reduced by an amount per share equal to any dividends or distributions declared by the Company and payable on the Firm Shares but not payable on the Optional Shares. Any such election to purchase Optional Shares shall be made in proportion to the maximum number of Optional Shares to be sold by all Selling Shareholders as set forth in Schedule I hereto in proportion to the maximum number of Optional Shares to be sold by each Selling Shareholder as set forth in Schedule I hereto. Such election to purchase Optional Shares may be exercised in whole or in part from time to time (which Optional Shares exercises, for the avoidance of doubt, shall not exceed an aggregate of [●] Optional Shares) only by written notice from the Representatives to the Selling Shareholders or their Attorneys-in-Fact, as applicable (with a copy to the Company), given within a period of 30 calendar days after the date of this Agreement, setting forth the aggregate number of Optional Shares to be purchased and the date on which such Optional Shares are to be delivered, as determined by the Representatives but in no event earlier than the First Time of Delivery (as defined in Section 4 hereof) or, unless the Representatives and the Company and the Selling Shareholders or their Attorneys-in-Fact, as applicable, otherwise agree in writing, earlier than two or later than ten business days after the date of such notice.

3. Upon the authorization by the Representatives of the release of the Firm Shares, the several Underwriters propose to offer the Firm Shares for sale upon the terms and conditions set forth in the Pricing Prospectus and the Prospectus.

4. (a) The Shares to be purchased by each Underwriter hereunder, in definitive or book-entry form, and in such authorized denominations and registered in such names as the Representatives may request upon at least forty-eight hours' prior notice to the Company and

the Selling Shareholders shall be delivered by or on behalf of the Selling Shareholders to the Representatives, through the facilities of the Depository Trust Company (“DTC”), for the account of such Underwriter, against payment by or on behalf of such Underwriter of the purchase price therefor by wire transfer of Federal (same-day) funds to the accounts specified by the Custodian to the Representatives at least forty-eight hours in advance. The Selling Shareholders will cause the certificates, if any, representing the Shares to be made available for checking and packaging at least twenty-four hours prior to the Time of Delivery with respect thereto at the office of DTC or its designated custodian (the “Designated Office”). The time and date of such delivery and payment shall be, with respect to the Firm Shares, 9:30 a.m., New York City time, on [●], 2020 or such other time and date as the Representatives, the Selling Shareholders or their Attorneys-in-Fact, as applicable, and the Company may agree upon in writing, and, with respect to the Optional Shares, 9:30 a.m., New York time, on the date specified by the Representatives in the written notice given by the Representatives of the Underwriters’ election to purchase such Optional Shares, or such other time and date as the Representatives, the Selling Shareholders or their Attorneys-in-Fact, as applicable, and the Company may agree upon in writing. Such time and date for delivery of the Firm Shares is herein called the “First Time of Delivery”, each such time and date for delivery of the Optional Shares, if not the First Time of Delivery, is herein called the “Optional Shares Time of Delivery”, and each such time and date for delivery is herein called a “Time of Delivery”.

(b) The documents to be delivered at each Time of Delivery by or on behalf of the parties hereto pursuant to Section 8 hereof, including the cross receipt for the Shares and any additional documents requested by the Underwriters pursuant to Section 8(n) hereof, will be delivered at the offices of Fenwick & West LLP: 1191 Second Avenue, 10th Floor, Seattle, Washington 98101 (the “Closing Location”), and the Shares will be delivered at the Designated Office, all at such Time of Delivery. A meeting will be held at the Closing Location at [●] p.m., New York City time, on the New York Business Day next preceding such Time of Delivery, at which meeting the final drafts of the documents to be delivered pursuant to the preceding sentence will be available for review by the parties hereto. For the purposes of this Section 4, “New York Business Day” shall mean each Monday, Tuesday, Wednesday, Thursday and Friday which is not a day on which banking institutions in New York City are generally authorized or obligated by law or executive order to close.

5. The Company agrees with each of the Underwriters:

(a) To prepare the Prospectus in a form approved by the Representatives and to file such Prospectus pursuant to Rule 424(b) under the Act not later than the Commission’s close of business on the second business day following the execution and delivery of this Agreement, or, if applicable, such earlier time as may be required by Rule 430A(a)(3) under the Act; to make no further amendment or any supplement to the Registration Statement or the Prospectus prior to the last Time of Delivery which shall be disapproved by the Representatives promptly after reasonable notice thereof; to advise the Representatives, promptly after it receives notice thereof, of the time when any amendment to the Registration Statement has been filed or becomes effective or any amendment or supplement to the Prospectus has been filed and to furnish the Representatives with copies thereof; to file promptly all material required to be filed by the Company with the Commission pursuant to Rule 433(d) under the Act; to advise the Representatives, promptly after it receives notice thereof, of the issuance by the Commission of any stop order or of any order preventing or suspending the use of any Preliminary Prospectus or other prospectus in respect of the

Shares, of the suspension of the qualification of the Shares for offering or sale in any jurisdiction, of the initiation or threatening of any proceeding for any such purpose, or of any request by the Commission for the amending or supplementing of the Registration Statement or the Prospectus or for additional information; and, in the event of the issuance of any stop order or of any order preventing or suspending the use of any Preliminary Prospectus or other prospectus or suspending any such qualification, to promptly use its best efforts to obtain the withdrawal of such order;

(b) Promptly from time to time to take such action as the Representatives may reasonably request to qualify the Shares for offering and sale under the securities laws of such jurisdictions as the Representatives may request and to comply with such laws so as to permit the continuance of sales and dealings therein in such jurisdictions for as long as may be necessary to complete the distribution of the Shares, provided that in connection therewith the Company shall not be required to qualify as a foreign corporation (where not otherwise required) or to file a general consent to service of process in any jurisdiction (where not otherwise required);

(c) Prior to 10:00 a.m., New York City time, on the New York Business Day next succeeding the date of this Agreement (or such other time as may be agreed to by the Representatives, the Selling Shareholders or their Attorneys-in-Fact, as applicable, and the Company) and from time to time, to furnish the Underwriters with written and electronic copies of the Prospectus in New York City in such quantities as the Representatives may reasonably request, and, if the delivery of a prospectus (or in lieu thereof, the notice referred to in Rule 173(a) under the Act) is required at any time prior to the expiration of nine months after the time of issue of the Prospectus in connection with the offering or sale of the Shares and if at such time any event shall have occurred as a result of which the Prospectus as then amended or supplemented would include an untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made when such Prospectus (or in lieu thereof, the notice referred to in Rule 173(a) under the Act) is delivered, not misleading, or, if for any other reason it shall be necessary during such same period to amend or supplement the Prospectus in order to comply with the Act, to notify the Representatives and upon the Representatives' request to prepare and furnish without charge to each Underwriter and to any dealer in securities as many written and electronic copies as the Representatives may from time to time reasonably request of an amended Prospectus or a supplement to the Prospectus which will correct such statement or omission or effect such compliance; and in case any Underwriter is required to deliver a prospectus (or in lieu thereof, the notice referred to in Rule 173(a) under the Act) in connection with sales of any of the Shares at any time nine months or more after the time of issue of the Prospectus, upon the Representatives' request but at the expense of such Underwriter, to prepare and deliver to such Underwriter as many written and electronic copies as the Representatives may request of an amended or supplemented Prospectus complying with Section 10(a)(3) of the Act;

(d) To make generally available to its securityholders as soon as practicable (which may be satisfied by filing with the Commission's Electronic Data Gathering, Analysis and Retrieval System ("EDGAR")), but in any event not later than sixteen months after the effective date of the Registration Statement (as defined in Rule 158(c) under the Act), an earnings statement of the Company (which need not be audited) complying with Section 11(a) of the Act and the rules and regulations of the Commission thereunder (including, at the option of the Company, Rule 158);

(e) During the period beginning from the date hereof and continuing to and including the date 90 days after the date of the Prospectus (the “Company Lock-Up Period”), not to (i) offer, sell, contract to sell, pledge, grant any option to purchase, make any short sale or otherwise transfer or dispose of, directly or indirectly, or file with or confidentially submit to the Commission a registration statement under the Act relating to, any securities of the Company that are substantially similar to the Shares, including but not limited to any options or warrants to purchase shares of Stock or any securities that are convertible into or exchangeable for, or that represent the right to receive, Stock or any such substantially similar securities, (ii) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the Stock or any such other securities, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of Stock or such other securities, in cash or otherwise or (iii) publicly disclose the intention to do any of the foregoing, in each case, without the prior written consent of the Representatives; provided, however, that the foregoing restrictions shall not apply to (w) any shares of Stock issued by the Company upon the conversion or exchange of convertible or exchangeable securities outstanding as of the date of this Agreement, (x) any shares of Stock or any securities or other awards convertible into, exercisable for, or that represent the right to receive shares of Stock pursuant to any stock option plan, incentive plan or stock purchase plan of the Company (collectively, the “Company Stock Plans”) described in the Registration Statement and the Prospectus and (y) the filing by the Company of any registration statement on Form S-8 (or a successor form thereto) relating to any Company Stock Plan described in the Registration Statement and the Prospectus, and provided further, that the recipient of any shares of Stock or securities issued pursuant to clauses (w) and (x) during the Lock-Up Period shall enter into a lock-up agreement in form and substance satisfactory to the Representatives;

(f) During a period of three years from the effective date of the Registration Statement, for so long as the Company is subject to the reporting requirements of either Section 13 or Section 15(d) of the Exchange Act, to furnish to its shareholders as soon as practicable after the end of each fiscal year an annual report (including a balance sheet and statements of income, shareholders’ equity and cash flows of the Company certified by independent public accountants) and, as soon as practicable after the end of each of the first three quarters of each fiscal year (beginning with the fiscal quarter ending after the effective date of the Registration Statement), to make available to its shareholders summary financial information of the Company for such quarter in reasonable detail, provided that no reports, documents or other information needs to be furnished pursuant to this Section 5(f) to the extent they are available on EDGAR;

(g) During a period of three years from the effective date of the Registration Statement, to furnish to the Representatives copies of all reports or other communications (financial or other) furnished to shareholders, and to deliver to the Representatives (i) as soon as they are available, copies of any reports and financial statements furnished to or filed with the Commission or any national securities exchange on which any class of securities of the Company is listed; and (ii) such additional information concerning the business and financial condition of the Company as the Representatives may from time to time reasonably request (such financial statements to be on a consolidated basis to the extent the accounts of the

Company are consolidated in reports furnished to its shareholders generally or to the Commission), provided that no reports, documents or other information needs to be furnished pursuant to this Section 5(g) to the extent they are available on EDGAR;

(h) To use its best efforts to maintain the listing for quotation of the Shares on the Nasdaq Global Select Market (“Nasdaq”);

(i) Upon the request of the Representatives and Selling Shareholders, or their Attorneys-in-Fact, as applicable, the Company shall file a Rule 462(b) Registration Statement with the Commission in compliance with Rule 462(b) by 10:00 P.M., Washington, D.C. time, on the date of this Agreement, and the Company shall at the time of filing either pay to the Commission the filing fee for the Rule 462(b) Registration Statement or give irrevocable instructions for the payment of such fee pursuant to Rule 111(b) under the Act;

(j) Upon request of any Underwriter, to furnish, or cause to be furnished, to such Underwriter an electronic version of the Company’s trademarks, servicemarks and corporate logo for use on the website, if any, operated by such Underwriter for the purpose of facilitating the on-line offering of the Shares (the “License”); provided, however, that the License shall be used solely for the purpose described above, is granted without any fee and may not be assigned or transferred; and

(k) To promptly notify the Representatives if the Company ceases to be an Emerging Growth Company at any time prior to the later of (i) completion of the distribution of the Shares within the meaning of the Act and (ii) the completion of the Company Lock-Up Period referred to in Section 5(e) hereof; and

(l) To deliver to the Representatives, on the date hereof, a properly completed and executed Certification Regarding Beneficial Owners of Legal Entity Customers, together with copies of identifying documentation, and the Company undertakes to provide such additional supporting documentation as the Representatives may reasonably request in connection with the verification of the foregoing certification.

6. (a) The Company represents and agrees that, without the prior consent of the Representatives, it has not made and will not make any offer relating to the Shares that would constitute a “free writing prospectus” as defined in Rule 405 under the Act; each Selling Shareholder represents and agrees that, without the prior consent of the Company and the Representatives, it has not made and will not make any offer relating to the Shares that would constitute a free writing prospectus; and each Underwriter represents and agrees that, without the prior consent of the Company and the Representatives, it has not made and will not make any offer relating to the Shares that would constitute a free writing prospectus required to be filed with the Commission; any such free writing prospectus the use of which has been consented to by the Company and the Representatives is listed on Schedule III(a) hereto;

(b) The Company has complied and will comply with the requirements of Rule 433 under the Act applicable to any Issuer Free Writing Prospectus, including timely filing with the Commission or retention where required and legending; and the Company represents that it has satisfied and agrees that it will satisfy the conditions under Rule 433 under the Act to avoid a requirement to file with the Commission any electronic road show; and

(c) The Company agrees that if at any time following the issuance of an Issuer Free Writing Prospectus or Written Testing-the-Waters Communication any event occurred or occurs as a result of which such Issuer Free Writing Prospectus or Written Testing-the-Waters Communication would conflict with the information in the Registration Statement, the Pricing Prospectus or the Prospectus or would include an untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in the light of the circumstances then prevailing, not misleading, the Company will give prompt notice thereof to the Representatives and, if requested by the Representatives, will prepare and furnish without charge to each Underwriter an Issuer Free Writing Prospectus, Written Testing-the-Waters Communication or other document which will correct such conflict, statement or omission; provided, however, that this representation and warranty shall not apply to any statements or omissions in an Issuer Free Writing Prospectus or Written Testing-the-Waters Communication prepared or authorized by it made in reliance and in conformity with the Underwriter Information.

(d) The Company represents and agrees that (i) it has not engaged in, or authorized any other person to engage 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 as defined in Rule 144A under the Act or institutions that are accredited investors as defined in Rule 501(a)(1), (a)(2), (a)(3), (a)(7) or (a)(8) under the Act; and (ii) it has not distributed, or authorized any other person to distribute, any Written Testing-the-Waters Communication, other than those distributed with the prior consent of the Representatives that are listed on Schedule III(d) hereto; and the Company reconfirms that the Underwriters have been authorized to act on its behalf in engaging in Testing-the-Waters Communications.

7. (a) The Company and each of the Selling Shareholders covenant and agree with one another and with the several Underwriters that the Company will pay or cause to be paid the following: (i) the fees, disbursements and expenses of the Company's counsel and accountants and counsel for the Selling Shareholders (subject to the terms and limitations of that certain Seventh Amended and Restated Investors' Rights Agreement dated May 30, 2019) in connection with the registration of the Shares under the Act and all other expenses in connection with the preparation, printing, reproduction and filing of the Registration Statement, any Preliminary Prospectus, any Written Testing-the-Waters Communication, any Issuer Free Writing Prospectus and the Prospectus and amendments and supplements thereto and the mailing and delivering of copies thereof to the Underwriters and dealers; (ii) the cost of printing or producing any Agreement among Underwriters, this Agreement, the Blue Sky Memorandum, closing documents (including any compilations thereof) and any other documents in connection with the offering, purchase, sale and delivery of the Shares; (iii) all expenses in connection with the qualification of the Shares for offering and sale under state securities laws as provided in Section 5(b) hereof, including the reasonable and documented fees and disbursements of counsel for the Underwriters in connection with such qualification and in connection with the Blue Sky survey (iv) all fees and expenses in connection with listing the Shares on Nasdaq; (v) the filing fees incident to, and the reasonable and documented fees and disbursements of counsel for the Underwriters in connection with, any required review by FINRA of the terms of the sale of the Shares; (vi) the cost and charges of any transfer agent or registrar; (vii) fees and expenses of the Custodian and the Attorneys-in-Fact; and (viii) all other costs and expenses incident to the performance of its and the Selling

Shareholders' obligations hereunder which are not otherwise specifically provided for in this Section (other than any transfer taxes payable by the Selling Shareholders on their respective sales of Shares to the Underwriters, and for the sake of clarity excluding any underwriting discounts or commissions); provided however, that the amounts payable by the Company pursuant to clause (iii) and for fees and disbursements of counsel for the Underwriters described in clauses (iii) and (v) shall not exceed \$50,000 in the aggregate. It is understood, however, that, (x) except as provided in this Section, and Sections 9 and 12 hereof, the Underwriters will pay all of their own costs and expenses, including the fees of their counsel, stock transfer taxes on resale of any of the Shares by them, and any advertising expenses connected with any offers they may make and all travel and lodging expenses of the Underwriters and their representatives and counsel and (y) the Underwriters and the Company shall each pay 50% of the cost of chartering all aircraft used in connection with the road show.

(b) Each Selling Shareholder, severally and not jointly, covenants and agrees with the Underwriters and the Company that (i) such Selling Shareholder will pay or cause to be paid all transfer taxes incident to the sale and delivery of the Shares to be sold by such Selling Shareholder to the Underwriters hereunder; (ii) the underwriting discount and commission associated with the Shares to be sold by such Selling Shareholder hereunder shall be deducted from such Selling Shareholder's proceeds from the sale of such Shares; and (iii) such Selling Shareholder will pay or cause to be paid the fees, disbursements and expenses of such Selling Shareholder other than as provided for in Section 7(a)(i) above.

8. The obligations of the Underwriters hereunder, as to the Shares to be delivered at each Time of Delivery, shall be subject, in their discretion, to the condition that all representations and warranties and other statements of the Company and the Selling Shareholders herein are, at and as of the Applicable Time and such Time of Delivery, true and correct, the condition that each of the Company and the Selling Shareholders shall have performed all of its and their obligations hereunder theretofore to be performed, and the following additional conditions:

(a) The Prospectus shall have been filed with the Commission pursuant to Rule 424(b) under the Act within the applicable time period prescribed for such filing by the rules and regulations under the Act and in accordance with Section 5(a) hereof; all material required to be filed by the Company pursuant to Rule 433(d) under the Act shall have been filed with the Commission within the applicable time period prescribed for such filing by Rule 433; if the Company has elected to rely upon Rule 462(b) under the Act, the Rule 462(b) Registration Statement shall have become effective by 10:00 P.M., Washington, D.C. time, on the date of this Agreement; no stop order suspending the effectiveness of the Registration Statement or any part thereof shall have been issued and no proceeding for that purpose shall have been initiated or threatened by the Commission; no stop order suspending or preventing the use of the Pricing Prospectus, Prospectus or any Issuer Free Writing Prospectus shall have been initiated or threatened by the Commission; and all requests for additional information on the part of the Commission shall have been complied with to the reasonable satisfaction of the Representatives;

(b) Fenwick & West LLP, counsel for the Underwriters, shall have furnished to the Representative such written opinion or opinions dated such Time of Delivery, in form and

substance satisfactory to the Representatives, with respect to such matters as the Representatives may reasonably request, and such counsel shall have received such papers and information as they may reasonably request to enable them to pass upon such matters;

(c) DLA Piper LLP (US), counsel for the Company, shall have furnished to the Representatives their written opinion dated such Time of Delivery, in form and substance satisfactory to the Representatives;

(d) The respective counsel for the Selling Shareholders, as indicated in Schedule I hereto, shall have each furnished to the Representatives their written opinion with respect to such Selling Shareholders, dated such Time of Delivery, in form and substance satisfactory to the Representatives;

(e) Bozicevic, Field and Francis LLP, intellectual property counsel for the Company, shall have furnished to the Representatives their written opinion, dated such Time of Delivery, in form and substance satisfactory to the Representatives;

(f) Arnold & Porter Kaye Scholer LLP, regulatory counsel for the Company, shall have furnished to the Representatives their written opinion, dated such Time of Delivery, in form and substance satisfactory to the Representatives;

(g) On the date of the Prospectus at a time prior to the execution of this Agreement, at 9:30 a.m., New York City time, on the effective date of any post-effective amendment to the Registration Statement filed subsequent to the date of this Agreement and also at each Time of Delivery, Ernst & Young LLP shall have furnished to the Representatives a letter or letters, dated the respective dates of delivery thereof, in form and substance satisfactory to the Representatives;

(h) (i) The Company shall not have sustained since the date of the latest audited financial statements included in the Pricing Prospectus any 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, otherwise than as set forth or contemplated in the Pricing Prospectus, and (ii) since the respective dates as of which information is given in the Pricing Prospectus there shall not have been any change in the capital stock (other than as a result of the exercise of stock options or the award of stock options or restricted stock in the ordinary course of business pursuant to the Company Stock Plans that are described in the Pricing Prospectus) or long-term debt of the Company or any change or effect, or any development involving a prospective change or effect, in or affecting (x) the business, properties, general affairs, management, financial position, shareholders' equity or results of operations of the Company, except as set forth or contemplated in the Pricing Prospectus and the Prospectus, or (y) the ability of the Company to perform its obligations under this Agreement, including the issuance and sale of the Shares, or to consummate the transactions contemplated in the Pricing Prospectus and the Prospectus, the effect of which, in any such case described in clause (i) or (ii), is in the judgment of the Representatives so material and adverse as to make it impracticable or inadvisable to proceed with the public offering or the delivery of the Shares being delivered at such Time of Delivery on the terms and in the manner contemplated in the Pricing Prospectus and the Prospectus;

(i) On or after the Applicable Time (i) no downgrading shall have occurred in the rating accorded the Company's debt securities by any "nationally recognized statistical rating organization", as that term is defined by the Commission for purposes of Rule 436(g)(2) under the 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 debt securities;

(j) On or after the Applicable Time there shall not have occurred any of the following: (i) a suspension or material limitation in trading in securities generally on Nasdaq; (ii) a suspension or material limitation in trading in the Company's securities on Nasdaq; (iii) a general moratorium on commercial banking activities declared by either Federal or New York State authorities or a material disruption in commercial banking or securities settlement or clearance services in the United States; (iv) the outbreak or escalation of hostilities involving the United States or the declaration by the United States of a national emergency or war or (v) the occurrence of any other calamity or crisis or any change in financial, political or economic conditions in the United States or elsewhere, if the effect of any such event specified in clause (iv) or (v) in the judgment of the Representatives makes it impracticable or inadvisable to proceed with the public offering or the delivery of the Shares being delivered at such Time of Delivery on the terms and in the manner contemplated in the Pricing Prospectus and the Prospectus;

(k) The Shares to be sold at such Time of Delivery shall have been duly listed for quotation on Nasdaq;

(l) The Company shall have obtained and delivered to the Underwriters executed copies of an agreement from each director and officer of the Company, and each of the Selling Shareholders shall have delivered to the Underwriters executed copies of an agreement from each of them, substantially to the effect set forth in Section 5(e) hereof in form and substance reasonably satisfactory to the Representatives;

(m) The Company shall have complied with the provisions of Section 5(c) hereof with respect to the furnishing of prospectuses on the New York Business Day next succeeding the date of this Agreement;

(n) The Company and the Selling Shareholders shall have furnished or caused to be furnished to the Representatives at such Time of Delivery certificates of officers of the Company and of the Selling Shareholders, respectively, satisfactory to the Representatives as to the accuracy of the representations and warranties of the Company and the Selling Shareholders, respectively, herein at and as of such Time of Delivery, as to the performance by the Company and the Selling Shareholders of all of their respective obligations hereunder to be performed at or prior to such Time of Delivery, and as to such other matters as the Representatives may reasonably request, and the Company shall have furnished or caused to be furnished certificates as to the matters set forth in subsections (a) and (h) of this Section 8;

(o) At each Time of Delivery, the Representatives shall have received a certificate of the Secretary of the Company, as to such matters as the Representatives may reasonably request;

(p) At each Time of Delivery, the Representatives shall have received reasonably satisfactory evidence of the valid existence of the Company in the State of Washington and its good standing (where such concept exists) as a foreign entity in such other jurisdictions as the Representatives may reasonably request, in each case in writing or any standard form of telecommunication from the appropriate governmental authorities of such jurisdictions; and

(q) The Company shall have delivered to the Underwriters on the date of the Prospectus at a time prior to the execution of this Agreement and at such Time of Delivery a certificate of the Chief Financial Officer of the Company in form and substance satisfactory to the Representatives;

(r) At each Time of Delivery, the Company shall have furnished to the Representatives such additional information, certificates, opinions or documents as the Representatives may reasonably request.

9. (a) The Company will indemnify and hold harmless each Underwriter and Selling Shareholder against any losses, claims, damages or liabilities, joint or several, to which such Underwriter or Selling Shareholder may become subject, under the Act or otherwise, 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 Pricing Prospectus or the Prospectus, or any amendment or supplement thereto, any Issuer Free Writing Prospectus, any "roadshow" as defined in Rule 433(h) under the Act (a "roadshow"), any "issuer information" filed or required to be filed pursuant to Rule 433(d) under the Act or any Testing-the-Waters Communication, 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, and will reimburse each Underwriter or Selling Shareholder, as applicable, for any legal or other expenses reasonably incurred by such Underwriter or Selling Shareholder in connection with investigating or defending any such action or claim as such expenses are incurred; *provided, however*, that the Company shall not be liable in any such case to the extent that any such loss, claim, damage or liability arises out of or is based upon an untrue statement or alleged untrue statement or omission or alleged omission made in the Registration Statement, any Preliminary Prospectus, the Pricing Prospectus or the Prospectus, or any amendment or supplement thereto, or any Issuer Free Writing Prospectus or any Testing-the-Waters Communication, in reliance upon and in conformity with: (i) the Underwriter Information with respect to the Company's indemnification obligations to each Underwriter and (ii) the Selling Shareholder Information with respect to the Company's indemnification obligations to each Selling Shareholder.

(b) Each of the Selling Shareholders will, severally and not jointly, indemnify and hold harmless each Underwriter and the Company against any losses, claims, damages or liabilities, joint or several, to which such Underwriter or the Company may become subject, under the Act or otherwise, 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 Pricing Prospectus or the Prospectus, or any amendment or supplement thereto, any Issuer Free Writing Prospectus, any roadshow or Testing-the-Waters Communication, any "issuer information" filed or required to be filed pursuant to Rule 433(d)

under the Act, 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 the Registration Statement, any Preliminary Prospectus, the Pricing Prospectus or the Prospectus, or any amendment or supplement thereto, any Issuer Free Writing Prospectus, any roadshow or any Testing-the-Waters Communication any “issuer information” filed or required to be filed pursuant to Rule 433(d) under the Act, in reliance upon and in conformity with the Selling Shareholder Information; and will reimburse each Underwriter or the Company, as applicable, for any legal or other expenses reasonably incurred by such Underwriter or the Company in connection with investigating or defending any such action or claim as such expenses are incurred; provided, however, that such Selling Shareholder shall not be liable in any such case to the extent that any such loss, claim, damage or liability arises out of or is based upon an untrue statement or alleged untrue statement or omission or alleged omission made in the Registration Statement, any Preliminary Prospectus, the Pricing Prospectus or the Prospectus, or any amendment or supplement thereto, any Issuer Free Writing Prospectus, roadshow or any Testing-the-Waters Communication, any “issuer information” filed or required to be filed pursuant to Rule 433(d) under the Act in reliance upon and in conformity with the Underwriter Information. The liability of each Selling Shareholder under this Section 9(b) shall not exceed an amount equal to the total net proceeds, after deducting underwriting discounts and commissions but before deducting other expenses, received by such Selling Shareholder from the sale of Shares sold by such Selling Shareholder hereunder (the “Selling Shareholder Proceeds”).

(c) Each Underwriter will, severally and not jointly, indemnify and hold harmless the Company and each Selling Shareholder against any losses, claims, damages or liabilities to which the Company or such Selling Shareholder may become subject, under the Act or otherwise, 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 Pricing Prospectus or the Prospectus, or any amendment or supplement thereto, or any Issuer Free Writing Prospectus, or any roadshow or any Testing-the-Waters Communication, 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 the Registration Statement, any Preliminary Prospectus, the Pricing Prospectus or the Prospectus, or any amendment or supplement thereto, or any Issuer Free Writing Prospectus, or any roadshow or any Testing-the-Waters Communication, in reliance upon and in conformity with the Underwriter Information; and will reimburse the Company and each Selling Shareholder for any legal or other expenses reasonably incurred by the Company or such Selling Shareholder in connection with investigating or defending any such action or claim as such expenses are incurred. As used in this Agreement with respect to an Underwriter and an applicable document, “Underwriter Information” shall mean the written information furnished to the Company by such Underwriter through the Representatives expressly for use therein; it being understood and agreed upon that the only such information furnished by any Underwriter consists of the following information in the Prospectus furnished on behalf of each Underwriter: the concession and reallowance figures appearing in the fifth paragraph under the caption “Underwriting”, and the information contained in the eighth, ninth and tenth paragraphs under the caption “Underwriting”.

(d) Promptly after receipt by an indemnified party under subsection (a), (b) or (c) of this Section 9 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; provided that the failure to notify the indemnifying party shall not relieve it from any liability that it may have under the preceding paragraphs of this Section 9 except to the extent that it has been materially prejudiced (through the forfeiture of substantive rights or defenses) by such failure; and provided further that the failure to notify the indemnifying party shall not relieve it from any liability that it may have to an indemnified party otherwise than under the preceding paragraphs of this Section 9. In case any such action shall be brought against any indemnified party and it shall notify the indemnifying party of the commencement thereof, the indemnifying party shall be entitled to participate therein and, to the extent that it shall wish, jointly with any other indemnifying party similarly notified, to assume the defense thereof, with counsel reasonably satisfactory to such indemnified party (who shall not, except with the consent of the indemnified party, be counsel to the indemnifying party), and, after notice from the indemnifying party to such indemnified party of its election so to assume the defense thereof, the indemnifying party shall not be liable to such indemnified party under such subsection for any legal expenses of other counsel (other than local counsel) or any other expenses, in each case subsequently incurred by such indemnified party, in connection with the defense thereof other than reasonable costs of investigation. No indemnifying party shall, without the written consent of the indemnified party (which consent shall not be unreasonably conditioned, withheld or delayed), effect the settlement or compromise of, or consent to the entry of any judgment with respect to, any pending or threatened action or claim in respect of which indemnification or contribution may be sought hereunder (whether or not the indemnified party is an actual or potential party to such action or claim) unless such settlement, compromise or judgment (i) includes an unconditional release of the indemnified party, in form and substance reasonably satisfactory to such indemnified party, from all liability arising out of such action or claim and (ii) does not include a statement as to or an admission of fault, culpability or a failure to act, by or on behalf of any indemnified party.

(e) If the indemnification provided for in this Section 9 is unavailable to or insufficient to hold harmless an indemnified party under subsection (a), (b) or (c) above in respect of any losses, claims, damages or liabilities (or actions in respect thereof) referred to therein, then each indemnifying party shall contribute to the amount paid or payable by such indemnified party as a result of such losses, claims, damages or liabilities (or actions in respect thereof) in such proportion as is appropriate to reflect the relative benefits received by the Company and the Selling Shareholders on the one hand and the Underwriters on the other from the offering of the Shares. If, however, the allocation provided by the immediately preceding sentence is not permitted by applicable law, then each indemnifying party shall contribute to such amount paid or payable by such indemnified party in such proportion as is appropriate to reflect not only such relative benefits but also the relative fault of the Company and the Selling Shareholders on the one hand and the Underwriters on the other in connection with the statements or omissions which resulted in such losses, claims, damages or liabilities (or actions in respect thereof), as well as any other relevant equitable considerations. The relative benefits received by the Company and the Selling Shareholders 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 Selling Shareholders 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 of the Company and the Selling Shareholders on the one hand and the Underwriters on the other shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission or alleged omission to state a material fact relates to information supplied by the Company or to Selling Shareholder Information supplied by a Selling Shareholder on the one hand or the Underwriters on the other and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission. Notwithstanding the provisions of this subsection (e), in no event shall a Selling Shareholder be required to contribute any amount in excess of the amount by which the total net proceeds, after underwriting discounts and commissions but before deducting other expenses, received by such Selling Shareholder from the sale of Shares sold by such Selling Shareholder hereunder exceeds the amount of any damages that such Selling Shareholder has otherwise been required to pay by reason of such untrue or alleged untrue statement or omission or alleged omission and in no event shall the aggregate liability of a Selling Shareholder under subsections (b), (e) and (f) of this Section 9 exceed the Selling Shareholder Proceeds of such Selling Shareholder. The Company, each of the Selling Shareholders and the Underwriters agree that it would not be just and equitable if contribution pursuant to this subsection (e) were 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 above in this subsection (e). The amount paid or payable by an indemnified party as a result of the losses, claims, damages or liabilities (or actions in respect thereof) referred to above in this subsection (e) shall be deemed to include, subject to the limitations set forth above, any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending any such action or claim. Notwithstanding the provisions of this subsection (e), no Underwriter shall be required to contribute any amount in excess of the amount by which the total price at which the Shares underwritten by it and distributed to the public were offered to the public exceeds the amount of any damages which 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 (e) to contribute are several in proportion to their respective underwriting obligations and not joint. The Selling Shareholders' obligations in this subsection (e) to contribute are several in proportion to the respective net proceeds received by them from the sale of the Shares under this Agreement and not joint.

(f) The obligations of the Company and the Selling Shareholders under this Section 9 shall be in addition to any liability which the Company and the respective Selling Shareholders may otherwise have and shall extend, upon the same terms and conditions, to each employee, officer and director of each Underwriter and each person, if any, who controls any Underwriter within the meaning of the Act and each broker-dealer or other affiliate of any Underwriter; and the obligations of the Underwriters under this Section 9 shall be in addition to any liability which the respective Underwriters may otherwise have and shall extend, upon the same terms and conditions, to each officer and director of the Company (including any person who, with his or her consent, is named in the Registration Statement as about to become a director of the Company) and of each Selling Shareholder and to each person, if any, who controls the Company or any Selling Shareholders within the meaning of the Act.

10. (a) If any Underwriter shall default in its obligation to purchase the Shares which it has agreed to purchase hereunder at a Time of Delivery, the Representatives may in their discretion arrange for the Representatives or another party or other parties to purchase such Shares on the terms contained herein. If within thirty-six hours after such default by any Underwriter the Representatives do not arrange for the purchase of such Shares, then the Company and the Selling Shareholders shall be entitled to a further period of thirty-six hours within which to procure another party or other parties satisfactory to the Representatives to purchase such Shares on such terms. In the event that, within the respective prescribed periods, the Representatives notify the Company and the Selling Shareholders that the Representatives have so arranged for the purchase of such Shares, or the Company or a Selling Shareholder notifies the Representatives that it has so arranged for the purchase of such Shares, the Representatives or the Company or a Selling Shareholder shall have the right to postpone such Time of Delivery for a period of not more than seven days, in order to effect whatever changes may thereby be made necessary in the Registration Statement or the Prospectus, or in any other documents or arrangements, and the Company agrees to file promptly any amendments or supplements to the Registration Statement or the Prospectus which in the opinion of the Representatives may thereby be made necessary. The term "Underwriter" as used in this Agreement shall include any person substituted under this Section with like effect as if such person had originally been a party to this Agreement with respect to such Shares.

(b) If, after giving effect to any arrangements for the purchase of the Shares of a defaulting Underwriter or Underwriters by the Representatives, the Company and the Selling Shareholders as provided in subsection (a) above, the aggregate number of such Shares which remains unpurchased does not exceed one-eleventh of the aggregate number of all the Shares to be purchased at such Time of Delivery, and the Selling Shareholders shall have the right to require each non-defaulting Underwriter to purchase the number of Shares which such Underwriter agreed to purchase hereunder at such Time of Delivery and, in addition, to require each non-defaulting Underwriter to purchase its pro rata share (based on the number of Shares which such Underwriter agreed to purchase hereunder) of the Shares of such defaulting Underwriter or Underwriters for which such arrangements have not been made; but nothing herein shall relieve a defaulting Underwriter from liability for its default.

(c) If, after giving effect to any arrangements for the purchase of the Shares of a defaulting Underwriter or Underwriters by the Representatives, the Company and the Selling Shareholders as provided in subsection (a) above, the aggregate number of such Shares which remains unpurchased exceeds one-eleventh of the aggregate number of all the Shares to be purchased at such Time of Delivery, or if the Selling Shareholders shall not exercise the right described in subsection (b) above to require non-defaulting Underwriters to purchase Shares of a defaulting Underwriter or Underwriters, then this Agreement (or, with respect to the Optional Shares Time of Delivery, the obligations of the Underwriters to purchase and of the Selling Shareholders to sell the Optional Shares) shall thereupon terminate, without liability on the part of any non-defaulting Underwriter, the Company or the Selling Shareholders, except for the expenses to be borne by the Company, the Selling Shareholders and the Underwriters as provided in Section 7 hereof and the indemnity and contribution agreements in Section 9 hereof; but nothing herein shall relieve a defaulting Underwriter from liability for its default.

11. The respective indemnities, agreements, representations, warranties and other statements of the Company, the Selling Shareholders and the several Underwriters, as set forth in this Agreement or made by or on behalf of them, respectively, pursuant to this Agreement, shall remain in full force and effect, regardless of any investigation (or any statement as to the results thereof) made by or on behalf of any Underwriter or any controlling person of any Underwriter, or the Company, or any of the Selling Shareholders, or any officer or director or controlling person of the Company, or any controlling person of any Selling Shareholder, and shall survive delivery of and payment for the Shares.

12. If this Agreement shall be terminated pursuant to Section 10 hereof, neither the Company nor the Selling Shareholders shall then be under any liability to any Underwriter except as provided in Sections 7 and 9 hereof; but, if for any other reason, any Shares are not delivered by or on behalf of the Selling Shareholders as provided herein, the Company or such Selling Shareholder as the case may be, will reimburse the Underwriters through the Representatives for all out-of-pocket expenses approved in writing by the Representatives, including fees and disbursements of counsel, reasonably incurred by the Underwriters in making preparations for the purchase, sale and delivery of the Shares not so delivered, but the Company and the Selling Shareholders shall then be under no further liability to any Underwriter except as provided in Sections 7 and 9 hereof.

13. In all dealings hereunder, the Representatives shall act on behalf of each of the Underwriters, and the parties hereto shall be entitled to act and rely upon any statement, request, notice or agreement on behalf of any Underwriter made or given by the Representatives; and in all dealings with any Selling Shareholder hereunder, the Representatives and the Company shall be entitled to act and rely upon any statement, request, notice or agreement on behalf of such Selling Shareholder made or given by any or all of the Attorneys-in-Fact for such Selling Shareholder.

All statements, requests, notices and agreements hereunder shall be in writing, and (A) if to the Underwriters shall be delivered or sent by mail, telex or facsimile transmission to the Representatives in care of J.P. Morgan Securities LLC, 383 Madison Avenue, New York, New York 10179, Attention: Equity Syndicate Desk; in care of Goldman Sachs & Co. LLC, 200 West Street, New York, New York 10282-2198, Attention: Registration Department; and in care of BofA Securities, Inc., One Bryant Park, New York, New York 10036, Attention: Equity Capital Markets; (B) if to the Company shall be delivered or sent by mail, telex or facsimile transmission to the address of the Company set forth in the Registration Statement, Attention: Secretary; and (C) if to any Selling Shareholder shall be delivered or sent by mail, telex or facsimile transition to the address of such Selling Shareholder set forth in Schedule I hereto; provided, however, that any notice to an Underwriter pursuant to Section 9(c) hereof shall be delivered or sent by mail, telex or facsimile transmission to such Underwriter at its address set forth in its Underwriters' Questionnaire, or telex constituting such Questionnaire, which address will be supplied to the Company or the Selling Shareholders by the Representatives upon request; provided, however, that notices under subsection 5(e)(2) shall be in writing, and if to the Underwriters shall be delivered or sent by mail, telex or facsimile transmission to the Representatives in the care of J.P. Morgan Securities LLC, 383 Madison Avenue, New York, New York 10179; and in the care of Goldman Sachs & Co. LLC, 200 West Street, New York, New York 10282-2198, Attention: Control Room. Any such statements, requests, notices or agreements shall take effect upon receipt thereof.

In accordance with the requirements of the USA Patriot Act (Title III of Pub. L. 107-56 (signed into law October 26, 2001)), the Underwriters are required to obtain, verify and record information that identifies their respective clients, including the Company and the Selling Shareholders, which information may include the name and address of their respective clients, as well as other information that will allow the Underwriters to properly identify their respective clients.

14. This Agreement shall be binding upon, and inure solely to the benefit of, the Underwriters, the Company and the Selling Shareholders and, to the extent provided in Sections 9 and 11 hereof, the officers and directors of the Company and each person who controls the Company, any Selling Shareholder or any Underwriter, and their respective heirs, executors, administrators, successors and assigns, and no other person shall acquire or have any right under or by virtue of this Agreement. No purchaser of any of the Shares from any Underwriter shall be deemed a successor or assign by reason merely of such purchase.

15. Time shall be of the essence of this Agreement. As used herein, the term "business day" shall mean any day when the Commission's office in Washington, D.C. is open for business.

16. The Company and each Selling Shareholder, severally and not jointly, acknowledges and agrees that (i) the purchase and sale of the Shares pursuant to this Agreement is an arm's-length commercial transaction between the Company and the Selling Shareholders, on the one hand, and the several Underwriters, on the other, (ii) in connection therewith and with the process leading to such transaction each Underwriter is acting solely as a principal and not the agent or fiduciary of the Company or any Selling Shareholder, (iii) no Underwriter has assumed an advisory or fiduciary responsibility in favor of the Company or any Selling Shareholder with respect to the offering contemplated hereby or the process leading thereto (irrespective of whether such Underwriter has advised or is currently advising the Company or any Selling Shareholder on other matters) or any other obligation to the Company or any Selling Shareholder except the obligations expressly set forth in this Agreement and (iv) the Company and each Selling Shareholder has consulted its own legal and financial advisors to the extent it deemed appropriate. The Company and each Selling Shareholder agree that it will not claim that the Underwriters, or any of them, has rendered advisory services of any nature or respect, or owes a fiduciary or similar duty to the Company or any Selling Shareholder, in connection with such transaction or the process leading thereto.

17. This Agreement supersedes all prior agreements and understandings (whether written or oral) among the Company, the Selling Shareholders and the Underwriters, or any of them, with respect to the subject matter hereof.

18. This Agreement and any transaction contemplated by this Agreement shall be governed by and construed in accordance with the laws of the State of New York without regard to principles of conflict of laws that would result in the application of any other law than the laws of the State of New York. The Company and each Selling Shareholder agree that any suit or proceeding arising in respect of this Agreement or any transaction contemplated by this Agreement will be tried exclusively in the U.S. District Court for the Southern District of New York or, if that court does not have subject matter jurisdiction, in any state court located in The City and County of New York and the Company and each Selling Shareholder agree to submit to the jurisdiction of, and to venue in, such courts.

19. THE COMPANY, EACH SELLING SHAREHOLDER 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.

20. This Agreement may be executed by any one or more of the parties hereto in any number of counterparts, each of which shall be deemed to be an original, but all such counterparts shall together constitute one and the same instrument.

21. Notwithstanding anything herein to the contrary, the Company and the Selling Shareholders are authorized to disclose to any persons the U.S. federal and state income tax treatment and tax structure of the potential transaction and all materials of any kind (including tax opinions and other tax analyses) provided to the Company and the Selling Shareholders relating to that treatment and structure, without the Underwriters imposing any limitation of any kind. However, any information relating to the tax treatment and tax structure shall remain confidential (and the foregoing sentence shall not apply) to the extent necessary to enable any person to comply with securities laws. For this purpose, "tax structure" is limited to any facts that may be relevant to that treatment.

22. Recognition of the U.S. Special Resolution Regimes.

(a) In the event that any Underwriter that is a Covered Entity becomes subject to a proceeding under a U.S. Special Resolution Regime, the transfer from such Underwriter of this Agreement, and any interest and obligation in or under this Agreement, will be effective to the same extent as the transfer would be effective under the U.S. Special Resolution Regime if this Agreement, and any such interest and obligation, were governed by the laws of the United States or a state of the United States.

(b) In the event that any Underwriter that is a Covered Entity or a BHC Act Affiliate of such Underwriter becomes subject to a proceeding under a U.S. Special Resolution Regime, Default Rights under this Agreement that may be exercised against such Underwriter are permitted to be exercised to no greater extent than such Default Rights could be exercised under the U.S. Special Resolution Regime if this Agreement were governed by the laws of the United States or a state of the United States.

(c) As used in this section:

"BHC Act Affiliate" has the meaning assigned to the term "affiliate" in, and shall be interpreted in accordance with, 12 U.S.C. § 1841(k).

"Covered Entity" means any of the following:

(i) a "covered entity" as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 252.82(b);

(ii) a "covered bank" as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 47.3(b); or

(iii) a "covered FSI" as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 382.2(b).

“Default Right” has the meaning assigned to that term in, and shall be interpreted in accordance with, 12 C.F.R. §§ 252.81, 47.2 or 382.1, as applicable.

“U.S. Special Resolution Regime” means each of (i) the Federal Deposit Insurance Act and the regulations promulgated thereunder and (ii) Title II of the Dodd-Frank Wall Street Reform and Consumer Protection Act and the regulations promulgated thereunder.

If the foregoing is in accordance with the understanding of the Representatives, please sign and return to us counterparts hereof, and upon the acceptance hereof by the Representatives, on behalf of each of the Underwriters, this letter and such acceptance hereof shall constitute a binding agreement between each of the Underwriters, each of the Selling Shareholders and the Company. It is understood that acceptance of the Representatives of this letter on behalf of each of the Underwriters is pursuant to the authority set forth in a form of Agreement among Underwriters, the form of which shall be submitted to the Company and the Selling Shareholders for examination, upon request, but without warranty on the part of the Representatives as to the authority of the signers thereof.

Any person executing and delivering this Agreement as Attorney-in-Fact for a Selling Shareholder represents by so doing that he has been duly appointed as Attorney-in-Fact by such Selling Shareholder pursuant to a validly existing and binding Power of Attorney that authorizes such Attorney-in-Fact to take such action.

[Signature Page Follows]

Very truly yours,

Adaptive Biotechnologies Corporation

By: _____
Name:
Title:

**Viking Global Opportunities Illiquid
Investments Sub-Master LP**

By: Viking Global Opportunities Portfolio GP LLC, its
general partner

By: _____
Name:
Title:

Viking Global Equities II LP

By: Viking Global Performance LLC, its general partner

By: _____
Name:
Title:

Viking Global Equities Master Ltd.

By: Viking Global Performance LLC, its investment
manager

By: _____
Name:
Title:

**Viking Global Opportunities Illiquid
Investments Sub-Master LP**

By: Viking Long Fund Master Ltd., its investment
manager

By: _____
Name:
Title:

Matrix Capital Management Master Fund, LP

By: Matrix Institutional Advisers, LP, its General Partner

By: _____

Name: David E. Goel

Title: Managing General Partner

Senator Global Opportunity Master Fund L.P.

By: Senator Master GP LLC, its general partner

By: _____

Name:

Title:

Andris Zoltners

By:

As Attorney-in-Fact

Accepted as of the date hereof:

J.P. Morgan Securities LLC

By: _____
Name:
Title:

Goldman Sachs & Co. LLC

By: _____
Name:
Title:

BofA Securities, Inc.

By: _____
Name:
Title:

On behalf of each of the Underwriters

SCHEDULE I

	Total Number of Firm Shares to be Sold	Number of Optional Shares to be Sold if Maximum Option Exercised
The Company.		
Individual Selling Shareholder:		
Andris Zoltners (a)		
Entity Selling Shareholder(s):		
Viking Global Equities II LP (b)		
Viking Global Equities Master Ltd. (c)		
Viking Long Fund Master Ltd. (d)		
Viking Global Opportunities Illiquid Investments Sub-Master LP (e)		
Matrix Capital Management Master Fund, L.P. (f)		
Senator Global Opportunity Master Fund LP (g)		
Total		

- (a) This Selling Shareholder is represented by Skadden, Arps, Slate, Meagher & Flom LLP, 4 Times Square, New York, New York, 10036-6522, and has appointed Chad Cohen and Stacy Taylor, and each of them, as the Attorneys-in-Fact for such Selling Shareholder. The address for notices for this Selling Shareholder is 4951 Gulf Shore Blvd N. Apt 502 Naples, FL 34103.
- (b) This Selling Shareholder is represented by Skadden, Arps, Slate, Meagher & Flom LLP, 4 Times Square, New York, New York, 10036-6522, and Maples and Calder, PO Box 309, Ugland House, Grand Cayman, KY1-1104, Cayman Islands. The address for notices for this Selling Shareholder is c/o Viking Global Investors LP, 55 Railroad Avenue, Greenwich, CT 06830.
- (c) This Selling Shareholder is represented by Skadden, Arps, Slate, Meagher & Flom LLP, 4 Times Square, New York, New York, 10036-6522, and Maples and Calder, PO Box 309, Ugland House, Grand Cayman, KY1-1104, Cayman Islands. The address for notices for this Selling Shareholder is c/o Viking Global Investors LP, 55 Railroad Avenue, Greenwich, CT 06830.
- (d) This Selling Shareholder is represented by Skadden, Arps, Slate, Meagher & Flom LLP, 4 Times Square, New York, New York, 10036-6522, and Maples and Calder, PO Box 309, Ugland House, Grand Cayman, KY1-1104, Cayman Islands. The address for notices for this Selling Shareholder is c/o Viking Global Investors LP, 55 Railroad Avenue, Greenwich, CT 06830.
- (e) This Selling Shareholder is represented by Skadden, Arps, Slate, Meagher & Flom LLP, 4 Times Square, New York, New York, 10036-6522, and Maples and Calder, PO Box 309, Ugland House, Grand Cayman, KY1-1104, Cayman Islands. The address for notices for this Selling Shareholder is c/o Viking Global Investors LP, 55 Railroad Avenue, Greenwich, CT 06830.

- (f) This Selling Shareholder is represented by Skadden, Arps, Slate, Meagher & Flom LLP, 4 Times Square, New York, New York, 10036-6522, and Conyers Dill & Pearman, SIX, 2nd Floor, Cricket Square, Hutchins Drive, PO Box 2681, Grand Cayman, KY1-1111, Cayman Islands. The address for notices for this Selling Shareholder is 1000 Winter Street Suite 4500 Waltham, MA 02451.
- (g) This Selling Shareholder is represented by Skadden, Arps, Slate, Meagher & Flom LLP, 4 Times Square, New York, New York, 10036-6522, and Walkers, 190 Elgin Avenue, George Town, Grand Cayman, KY1-9001, Cayman Islands. The address for notices for this Selling Shareholder is Senator Investment Group LP 510 Madison Avenue, 28th Floor New York, NY 10022 Attn: General Counsel.

Schedule II

<u>Underwriter</u>	<u>Total Number of Firm Shares to be Purchased</u>	<u>Number of Optional Shares to be Purchased if Maximum Option Exercised</u>
J.P. Morgan Securities LLC		
Goldman Sachs & Co. LLC		
BofA Securities, Inc.		
Cowen and Company, LLC		
Guggenheim Securities, LLC		
William Blair & Company, L.L.C.		
BTIG, LLC		
Total		

SCHEDULE III

(a) Issuer Free Writing Prospectuses not included in the Pricing Disclosure Package:

[Electronic roadshow dated [●].]

(b) Additional Documents Incorporated by Reference:

[None]

(c) Information other than the Pricing Prospectus that comprise the Pricing Disclosure Package:

The public offering price per share for the Shares is \$[●]

The number of Firm Shares purchased by the Underwriters is [●].

The number of Optional Shares that may be purchase by the Underwriters is [●].

(d) Written Testing-the-Waters Communications