

RADIUS HEALTH, INC.

FORM 8-K (Current report filing)

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Address	ATTN: CHIEF FINANCIAL OFFICER 950 WINTER STREET WALTHAM, MA 02451
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**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549**

FORM 8-K

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

Date of Report (Date of earliest event reported): August 8, 2017

RADIUS HEALTH, INC.
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction
of incorporation)

001-35726
(Commission
File Number)

80-0145732
(IRS Employer
Identification No.)

**950 Winter Street,
Waltham, MA**
(Address of principal executive offices)

02451
(Zip Code)

Registrant's telephone number, including area code: (617) 551-4000

Not Applicable
(Former name or former address, if changed since last report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instructions A.2. below):

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

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

Emerging growth company

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

Item 1.01 Entry into a Material Definitive Agreement.

On August 8, 2017, Radius Health, Inc. (the “Company”) and J.P. Morgan Securities LLC and Morgan Stanley & Co. LLC, on their own behalf and as representatives of the several underwriters (the “Underwriters”), entered into an underwriting agreement (the “Underwriting Agreement”) pursuant to which the Company agreed to issue and sell \$300 million aggregate principal amount of 3.00% Convertible Senior Notes due 2024 (the “Notes”) to the Underwriters. Pursuant to the Underwriting Agreement, the Company granted the Underwriters a 30-day option to purchase up to an additional \$45 million of 3.00% Convertible Senior Notes due 2024 solely to cover over-allotments.

The Company intends to use the net proceeds from the offering to support the U.S. commercial launch of TYMLOS™ (abaloparatide) injection and the development of its life cycle management activities, such as the Company’s investigational abaloparatide transdermal patch, and to advance the development of its pipeline of product candidates, including a Phase 2 clinical trial of elacestrant (RAD1901) in breast cancer and a Phase 1 study of RAD140 in breast cancer, and for general corporate purposes.

The closing of the issuance and sale of Notes is expected to occur on or about August 14, 2017, subject to the satisfaction of customary closing conditions. The Underwriting Agreement contains customary representations, warranties and agreements by the Company, customary conditions to closing, indemnification obligations of the Company and the Underwriters, including for liabilities under the Securities Act of 1933, as amended, other obligations of the parties and termination provisions.

The above description of the Underwriting Agreement is qualified in its entirety by reference to the full text of the Underwriting Agreement, a copy of which is filed as Exhibit 1.1 hereto and is incorporated herein by reference.

Goodwin Procter LLP, counsel to the Company, has issued an opinion to the Company, dated August 8, 2017, relating to the offering and sale of the Notes to be issued and sold in the offering. A copy of the opinion is filed as Exhibit 5.1 to this Current Report on Form 8-K.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit No.	Description
1.1	Underwriting Agreement, dated as of August 8, 2017, among Radius Health, Inc. and J.P. Morgan Securities LLC and Morgan Stanley & Co. LLC, on their own behalf and as representatives of the several underwriters named in Schedule 1 thereto.
5.1	Opinion of Goodwin Procter LLP, counsel to the Company, dated as of August 8, 2017.
23.1	Consent of Goodwin Procter LLP (included in Exhibit 5.1).

SIGNATURES

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

RADIUS HEALTH, INC.

Date: August 9, 2017

By: /s/ Brent Hatzis-Schoch

Name: Brent Hatzis-Schoch

Title: General Counsel

EXHIBIT INDEX

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Radius Health, Inc.
3.00% Convertible Senior Notes due September 1, 2024

Underwriting Agreement

August 8, 2017

J.P. Morgan Securities LLC
Morgan Stanley & Co. LLC

c/o J.P. Morgan Securities LLC
383 Madison Avenue
New York, New York 10017

Morgan Stanley & Co. LLC
1585 Broadway
New York, New York 10036

As Representatives of the several Underwriters

Ladies and Gentlemen:

Radius Health, Inc., a Delaware corporation (the “Company”), proposes to issue and sell to the several underwriters listed in Schedule 1 hereto (the “Underwriters”), for whom you are acting as representatives (the “Representatives”), \$300,000,000 principal amount of its 3.00% Convertible Senior Notes due September 1, 2024 (the “Underwritten Securities”) and, at the option of the Underwriters, up to an additional \$45,000,000 principal amount of its 3.00% Convertible Senior Notes due September 1, 2024 (the “Option Securities”) if and to the extent that the Underwriters shall have determined to exercise the option to purchase such 3.00% Convertible Notes due September 1, 2024 granted to the Underwriters in Section 2 hereof. The Underwritten Securities and the Option Securities are herein referred to as the “Securities”. The Securities will be convertible into shares of common stock of the Company, par value \$0.0001 per share (the “Common Stock”), or a combination of cash and shares of Common Stock at the Company’s election (any shares of Common Stock issuable upon conversion of the Securities, including, for the avoidance of doubt, any additional shares deliverable upon conversion in connection with a “make-whole fundamental change,” the “Underlying Securities”). The Securities will be issued pursuant to a base indenture to be dated as of August 14, 2017, as supplemented by the first supplemental indenture to such base indenture (collectively, the “Indenture”), between the Company and Wilmington Trust, National Association, as trustee (the “Trustee”).

The Company hereby confirms its agreement with the several Underwriters concerning the purchase and sale of the Securities, as follows:

1. Registration Statement. The Company has prepared and filed with the Securities and Exchange Commission (the “Commission”) under the Securities Act of 1933, as amended, and the rules and regulations of the Commission thereunder (collectively, the “Securities Act”), a registration statement on Form S-3, as amended (File No. 333-201610) including a base prospectus (the “Base Prospectus”), relating to the Securities. Such registration statement, as amended at the time it became effective, including the financial statements, exhibits and schedules thereto, in the form in which it became effective under the Act, including all documents incorporated or deemed to be incorporated by reference therein and including the information, if any, deemed pursuant to Rule 430A, 430B or 430C under the Securities Act to be part of the registration statement at the time of its effectiveness (“Rule 430 Information”), is referred to herein as the “Registration Statement”; and as used herein, the term “Preliminary Prospectus” means each prospectus included in such registration statement (and any amendments thereto) before effectiveness, any prospectus filed with the Commission pursuant to Rule 424(a) under the Securities Act and the prospectus included in the Registration Statement at the time of its effectiveness that omits Rule 430 Information, and the term “Prospectus” means the prospectus in the form first used (or made available upon request of purchasers pursuant to Rule 173 under the Securities Act) in connection with confirmation of sales of the Securities. If the Company has filed an abbreviated registration statement pursuant to Rule 462(b) under the Securities Act (the “Rule 462 Registration Statement”), then any reference herein to the term “Registration Statement” shall be deemed to include such Rule 462 Registration Statement. Any reference in this underwriting agreement (this “Agreement”) to the Registration Statement, any Preliminary Prospectus or the Prospectus shall be deemed to refer to and include the documents incorporated by reference therein pursuant to Item 12 of Form S-3 under the Securities Act, as of the effective date of the Registration Statement or the date of such Preliminary Prospectus or the Prospectus, as the case may be and any reference to “amend”, “amendment” or “supplement” with respect to the Registration Statement, any Preliminary Prospectus or the Prospectus shall be deemed to refer to and include any documents filed after such date under the Securities Exchange Act of 1934, as amended, and the rules and regulations of the Commission thereunder (collectively, the “Exchange Act”) that are deemed to be incorporated by reference therein. Capitalized terms used but not defined herein shall have the meanings given to such terms in the Registration Statement and the Prospectus.

At or prior to the time when sales of the Securities were first made (the “Time of Sale”), the Company had prepared the following information (collectively, the “Time of Sale Information”): a Preliminary Prospectus dated August 7, 2017, and each “free-writing prospectus” (as defined pursuant to Rule 405 under the Securities Act) listed on Annex A hereto.

2. Purchase of the Securities.

(a) The Company agrees to issue and sell the Underwritten Securities to the several Underwriters as provided in this agreement (this “Agreement”), and each Underwriter, on the basis of the representations, warranties and agreements set forth herein and subject to the conditions set forth herein, agrees, severally and not jointly, to purchase from the Company the respective principal amount of Underwritten Securities set forth opposite such Underwriter’s name in Schedule 1 hereto at a price equal to 97% of the principal amount thereof (the “Purchase

Price”) plus accrued interest, if any, from August 14, 2017 to the Closing Date (as defined below). In addition, the Company agrees to issue and sell the Option Securities to the several Underwriters as provided in this Agreement, and the Underwriters, on the basis of the representations, warranties and agreements set forth herein and subject to the conditions set forth herein, shall have the option to purchase, severally and not jointly, from the Company the Option Securities at the Purchase Price plus accrued interest, if any, from August 14, 2017 to the date of payment and delivery.

If any Option Securities are to be purchased, the principal amount of Option Securities to be purchased by each Underwriter shall be the principal amount of Option Securities which bears the same ratio to the aggregate principal amount of Option Securities being purchased as the principal amount of Underwritten Securities set forth opposite the name of such Underwriter in Schedule 1 hereto (or such amount increased as set forth in Section 11 hereof) bears to the aggregate principal amount of Underwritten Securities being purchased from the Company by the several Underwriters, subject, however, to such adjustments to eliminate Securities in denominations other than \$1,000 as the Representatives in their sole discretion shall make.

The Underwriters may exercise the option to purchase Option Securities at any time in whole, or from time to time in part, on or before the thirtieth day following the date of this Agreement, by written notice from the Representatives to the Company. Such notice shall set forth the aggregate principal amount of Option Securities plus accrued interest as to which the option is being exercised and the date and time when the Option Securities are to be delivered and paid for which may be the same date and time as the Closing Date (as hereinafter defined) but shall not be earlier than the Closing Date nor later than the tenth full business day (as hereinafter defined) after the date of such notice (unless such time and date are postponed in accordance with the provisions of Section 11 hereof). Any such notice shall be given at least two business days prior to the date and time of delivery specified therein.

(b) The Company understands that the Underwriters intend to make a public offering of the Securities as soon after the effectiveness of this Agreement as in the judgment of the Representatives is advisable, and initially to offer the Securities on the terms set forth in the Time of Sale Information. The Company acknowledges and agrees that the Underwriters may offer and sell Securities to or through any affiliate of an Underwriter and that any such affiliate may offer and sell Securities purchased by it to or through any Underwriter.

(c) Payment for the Securities shall be made by wire transfer in immediately available funds to the account specified by the Company to the Representatives in the case of the Underwritten Securities, at the offices of Ropes & Gray LLP at Prudential Tower, 800 Boylston Street, Boston, MA, at 10:00 A.M. New York City time on August 14, 2017, or at such other time or place on the same or such other date, not later than the fifth business day thereafter, as the Representatives and the Company may agree upon in writing or, in the case of the Option Securities, on the date and at the time and place specified by the Representatives in the written notice of the Underwriters' election to purchase such Option Securities. The time and date of such payment for the Underwritten Securities is referred to herein as the “Closing Date” and the time and date for such payment for the Option Securities, if other than the Closing Date, is herein referred to as the “Additional Closing Date”.

Payment for the Securities to be purchased on the Closing Date or the Additional Closing Date, as the case may be, shall be made against delivery to the nominee of The Depository Trust Company (“DTC”), for the respective accounts of the several Underwriters of the Securities to be purchased on such date, of one or more global notes representing the Securities (collectively, the “Global Note”), with any transfer taxes payable in connection with the sale of such Securities duly paid by the Company. The Global Note will be made available for inspection by the Representatives at the office of J.P. Morgan Securities LLC set forth above not later than 1:00 P.M., New York City time, on the business day prior to the Closing Date or the Additional Closing Date, as the case may be.

(d) The Company acknowledges and agrees that each Underwriter is acting solely in the capacity of an arm’s length contractual counterparty to the Company with respect to the offering of Securities contemplated hereby (including in connection with determining the terms of the offering) and not as a financial advisor or a fiduciary to, or an agent of, the Company or any other person. Additionally, neither the Representatives nor any other Underwriter is advising the Company or any other person as to any legal, tax, investment, accounting or regulatory matters in any jurisdiction. The Company shall consult with its own advisors concerning such matters and shall be responsible for making its own independent investigation and appraisal of the transactions contemplated hereby, and the Underwriters shall have no responsibility or liability to the Company with respect thereto. Any review by the Underwriters of the Company, the transactions contemplated hereby or other matters relating to such transactions will be performed solely for the benefit of the Underwriters and shall not be on behalf of the Company.

3. Representations and Warranties of the Company. The Company represents and warrants to each Underwriter that:

(a) *Preliminary Prospectus*. No order preventing or suspending the use of any Preliminary Prospectus has been issued by the Commission, and each Preliminary Prospectus included in the Time of Sale Information, at the time of filing thereof, complied in all material respects with the Securities Act, and no Preliminary Prospectus, at the time of filing thereof, contained any untrue statement of a material fact or omitted to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided that the Company makes no representation or warranty with respect to any statements or omissions made in reliance upon and in conformity with information relating to any Underwriter furnished to the Company in writing by such Underwriter through the Representative expressly for use in any Preliminary Prospectus, it being understood and agreed that the only such information furnished by any Underwriter consists of the information described as such in Section 8 hereof.

(b) *Time of Sale Information*. The Time of Sale Information, at the Time of Sale, did not, and at the Closing Date and as of the Additional Closing Date, as the case may be, will not, contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided that the Company makes no representation or warranty with respect to

any statements or omissions made in reliance upon and in conformity with information relating to any Underwriter furnished to the Company in writing by such Underwriter through the Representative expressly for use in such Time of Sale Information, it being understood and agreed that the only such information furnished by any Underwriter consists of the information described as such in Section 8 hereof. No statement of material fact included in the Prospectus has been omitted from the Time of Sale Information and no statement of material fact included in the Time of Sale Information that is required to be included in the Prospectus has been omitted therefrom.

(c) *Issuer Free Writing Prospectus.* Other than the Registration Statement, the Preliminary Prospectus and the Prospectus, the Company (including its agents and representatives, other than the Underwriters in their capacity as such) has not prepared, made, used, authorized, approved or referred to and will not prepare, make, use, authorize, approve or refer to any “written communication” (as defined in Rule 405 under the Securities Act) that constitutes an offer to sell or solicitation of an offer to buy the Securities (each such communication by the Company or its agents and representatives (other than a communication referred to in clause (i) below) an “Issuer Free Writing Prospectus”) other than (i) any document not constituting a prospectus pursuant to Section 2(a)(10)(a) of the Securities Act or Rule 134 under the Securities Act or (ii) the documents listed on Annex A hereto, each electronic road show and any other written communications approved in writing in advance by the Representative. Each such Issuer Free Writing Prospectus complies in all material respects with the Securities Act, has been or will be (within the time period specified in Rule 433) filed in accordance with the Securities Act (to the extent required thereby) and does not conflict with the information contained in the Registration Statement or the Time of Sale Information and, when taken together with the Preliminary Prospectus accompanying, or delivered prior to delivery of such Issuer Free Writing Prospectus, did not, and at the Closing Date and as of the Additional Closing Date, as the case may be, will not, contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided that the Company makes no representation or warranty with respect to any statements or omissions made in each such Issuer Free Writing Prospectus in reliance upon and in conformity with information relating to any Underwriter furnished to the Company in writing by such Underwriter through the Representative expressly for use in such Issuer Free Writing Prospectus, it being understood and agreed that the only such information furnished by any Underwriter consists of the information described as such in Section 8 hereof.

(d) *Registration Statement and Prospectus.* The Registration Statement has been declared effective by the Commission. The Registration Statement is an “automatic shelf registration statement” as defined under Rule 405 of the Securities Act that has been filed with the Commission not earlier than three years prior to the date hereof; and no notice of objection of the Commission to the use of such registration statement or any post-effective amendment thereto pursuant to Rule 401(g)(2) under the Securities Act has been received by the Company. No order suspending the effectiveness of the Registration Statement has been issued by the Commission and no proceeding for that purpose or pursuant to Section 8A of the Securities Act against the Company or related to the offering has been initiated or, to the knowledge of the Company, threatened by the Commission; as of the applicable effective date of the Registration

Statement and any post-effective amendment thereto, the Registration Statement complied and will comply in all material respects with the Securities Act and the Trust Indenture Act of 1939, as amended, and the rules and regulations of the Commission thereunder (collectively, the “Trust Indenture Act”), and did not and will not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein not misleading; and as of the date of the Prospectus and any amendment or supplement thereto and as of the Closing Date and as of the Additional Closing Date, as the case may be, the Prospectus does not and will not contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided that the Company makes no representation or warranty with respect to (i) that part of the Registration Statement that constitutes the Statement of Eligibility and Qualification (Form T-1) of the Trustee under the Trust Indenture Act or (ii) any statements or omissions made in reliance upon and in conformity with information relating to any Underwriter furnished to the Company in writing by such Underwriter through the Representative expressly for use in the Registration Statement and the Prospectus and any amendment or supplement thereto, it being understood and agreed that the only such information furnished by any Underwriter consists of the information described as such in Section 8 hereof.

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

(f) *Financial Statements.* The financial statements and the related notes thereto of the Company and its consolidated subsidiaries included or incorporated by reference in each of the Registration Statement, the Time of Sale Information and the Prospectus comply in all material respects with the applicable requirements of the Securities Act and the Exchange Act, as applicable, and present fairly in all material respects the financial position of the Company and its consolidated subsidiaries as of the dates indicated and the results of their operations and the changes in their cash flows for the periods specified; such financial statements have been prepared in conformity with generally accepted accounting principles (“GAAP”) in the United States applied on a consistent basis throughout the periods covered thereby, except, in the case of unaudited interim financial statements, subject to normal year-end audit adjustments and the exclusion of certain footnotes, and any supporting schedules included or incorporated by reference in the Registration Statement present fairly the information required to be stated therein; and the other financial information included or incorporated by reference in the

Registration Statement, the Time of Sale Information and the Prospectus has been derived from the accounting records of the Company and its consolidated subsidiaries and presents fairly the information shown thereby; and the pro forma financial information and the related notes thereto included or incorporated by reference in the Registration Statement, the Time of Sale Information and the Prospectus have been prepared in accordance with the applicable requirements of the Securities Act and the Exchange Act, as applicable, and the assumptions underlying such pro forma financial information are reasonable and are set forth in the Registration Statement, the Time of Sale Information and the Prospectus; there are no financial statements (historical or pro forma) that are required to be included or incorporated by reference in the Registration Statement, the Time of Sale Information or the Prospectus that are not included as required; the Company and its subsidiaries do not have any material liabilities or obligations, direct or contingent (including any off-balance sheet obligations), not described in the Registration Statement (including the exhibits thereto), the Time of Sale Information and the Prospectus.

(g) *Status under the Securities Act.* the Company was and is a “well-known seasoned issuer” (as defined in Rule 405) (i) at the original effectiveness of the Registration Statement, (ii) at the time of the most recent amendment thereto for the purposes of complying with Section 10(a)(3) of the 1933 Act (whether such amendment was by post-effective amendment, incorporated report filed pursuant to Section 13 or 15(d) of the 1934 Act or form of prospectus) and (iii) at the time the Company or any offering participant made a *bonafide* offer (within the meaning of Rule 164(h)(2) under the Securities Act) of the Securities.

(h) *Capitalization.* As of June 30, 2017, the Company had outstanding the number of shares of Common Stock identified in the section of the Preliminary Prospectus and the Prospectus entitled “Capitalization”; the company has no class or series of capital stock outstanding except as set forth in the section of the Preliminary Prospectus and the Prospectus entitled “Capitalization”; all of the issued and outstanding shares of capital stock of the Company have been duly authorized and validly issued and are fully paid and non-assessable, have been issued in compliance with all applicable securities laws and were not issued in violation of any preemptive right, resale right, right of first refusal or similar right; the Underlying Securities are registered pursuant to Section 12(b) or 12(g) of the Exchange Act and will be duly listed, and admitted and authorized for trading, subject to official notice of issuance and evidence of satisfactory distribution on NASDAQ; and the Company has taken no action designed to, or likely to have the effect of, terminating the registration of the shares of Underlying Securities under the Exchange Act or delisting the Common Stock from NASDAQ, nor has the Company received any notification that the Commission or NASDAQ is contemplating terminating such registration or listing; and to the Company’s knowledge, it is in compliance with all applicable listing requirements of NASDAQ.

(i) *Organization and Good Standing.* The Company and each of its subsidiaries have been duly organized and are validly existing and in good standing under the laws of their respective jurisdictions of organization, are duly qualified to do business and are in good standing in each jurisdiction in which their respective ownership or lease of property or the conduct of their respective businesses requires such qualification, and have all power and authority necessary to own or hold their respective properties and to conduct the businesses in

which they are engaged, except where the failure to be so qualified and in good standing or have such power or authority would not, individually or in the aggregate, either (i) have material adverse effect on the business, properties, general affairs, financial condition, management, stockholders' equity, assets, results of operations or prospects of the Company and its subsidiaries taken as a whole, (ii) prevent or materially interfere with consummation of the transactions contemplated hereby or (iii) prevent the Underlying Securities from being accepted for listing on, or result in the delisting of shares of Common Stock from NASDAQ (the occurrence of any such effect or any such prevention or interference or any such result described in the foregoing clauses (i), (ii) and (iii) being herein referred to as a "Material Adverse Effect"). The subsidiaries listed in Schedule 2 to this Agreement are the only significant subsidiaries of the Company as such term is defined in Rule 1-02 of Regulation S-X under the Exchange Act, and all the outstanding shares of capital stock or other equity interests of each subsidiary are owned directly or indirectly by the Company, free and clear of any lien, charge, encumbrance, security interest, restriction on voting or transfer or any other claim of any third party.

(j) *Organizational Documents.* Complete and correct copies of the charter and the bylaws or similar organizational documents of the Company and all of its subsidiaries and all amendments thereto have been delivered to you, and, except as set forth in the exhibits to the Registration Statement, no changes therein will be made on or after the date hereof through and including the time of purchase or, if later, any additional time of purchase.

(k) *Due Authorization.* The Company has full right, power and authority to execute and deliver this Agreement, the Indenture and the Securities (collectively, the "Transaction Documents") and to perform its obligations hereunder and thereunder; and all action required to be taken for the due and proper authorization, execution and delivery by it of each of the Transaction Documents and the consummation by it of the transactions contemplated thereby or by the Time of Sale Information and the Prospectus has been duly and validly taken.

(l) *The Indenture.* The Indenture has been duly authorized by the Company and upon effectiveness of the Registration Statement and on the Closing Date and on the Additional Closing Date, as the case may be, was or will have been duly executed and delivered in accordance with its terms by each of the parties thereto, will constitute a valid and legally binding agreement of the Company enforceable against the Company in accordance with its terms, except as enforceability may be limited by applicable bankruptcy, insolvency or similar laws affecting the enforcement of creditors' rights generally or by equitable principles relating to enforceability (collectively, the "Enforceability Exceptions") and the Indenture will conform in all material respects to the requirements of the Trust Indenture Act.

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

(n) *The Securities.* The Securities to be issued and sold by the Company hereunder have been duly authorized by the Company and, when duly executed, authenticated, issued and delivered as provided in the Indenture and paid for as provided herein, will be duly and validly issued and outstanding and will constitute valid and legally binding obligations of the Company enforceable against the Company in accordance with their terms, subject to the Enforceability Exceptions, and will be entitled to the benefits of the Indenture.

(o) *The Underlying Securities.* The Underlying Securities reserved for issuance upon conversion of the Securities have been duly authorized and reserved and, when issued upon conversion of the Securities in accordance with the terms of the Securities, will be validly issued, fully paid and non assessable, and the issuance of the Underlying Securities will not be subject to any preemptive or similar rights, resale rights, rights of first refusal and similar rights; the Underlying Securities, when issued and delivered as provided herein, will be free of any restriction upon the voting or transfer thereof pursuant to the Delaware General Corporation Law or the Company's charter or bylaws or any agreement or other instrument to which the Company is a party.

(p) *Descriptions of Transaction Documents.* Each Transaction Document conforms in all material respects to each description thereof, if any, contained in the Registration Statement, the Time of Sale Information and the Prospectus.

(q) *No Violation or Default.* Neither the Company nor any of its subsidiaries is (i) in breach or violation of its charter or by-laws or similar organizational documents; or (ii) or in default under (nor has any event occurred which, with notice, lapse of time or both, would result in any breach or violation of, constitute a default under or give the holder of any indebtedness (or a person acting on such holder's behalf) the right to require the repurchase, redemption or repayment of all or a part of such indebtedness under) (A) any indenture, mortgage, deed of trust, bank loan or credit agreement or other agreement, instrument or evidence of indebtedness, or any license, lease, contract or other agreement or instrument to which the Company or any of its subsidiaries is a party or by which the Company or any of its subsidiaries may be bound or affected or by which any property of the Company or any of its subsidiaries may be bound or affected, (B) any applicable federal, state, local or foreign law, regulation or rule, (C) any applicable rule or regulation of any self-regulatory organization or other non-governmental regulatory authority (including, without limitation, the rules and regulations of the NASDAQ), or (D) any decree, judgment or order applicable to it or any of its properties, except, in the case of the foregoing clauses (A), (B), (C) and (D), for any such default or violation that would not, individually or in the aggregate, have a Material Adverse Effect.

(r) *No Conflicts.* The execution, delivery and performance by the Company of each of the Transaction Documents, the issuance and sale of the Securities (including the issuance of the Underlying Securities upon conversion thereof) and the consummation of the transactions contemplated by the Transaction Documents will not conflict with, result in any breach or violation of or constitute a default under (nor constitute any event which, with notice, lapse of time or both, would result in any breach or violation of, constitute a default under or give the holder of any indebtedness (or a person acting on such holder's behalf) the right to require the repurchase, redemption or repayment of all or a part of such indebtedness under) (or result in the creation or imposition of a lien, charge or encumbrance on any property or assets of the Company or any of its subsidiaries pursuant to) (A) the charter or bylaws or similar organizational documents of the Company or any of its subsidiaries, (B) any indenture, mortgage, deed of trust, bank loan or credit agreement or other agreement, instrument or

evidence of indebtedness, or any license, lease, contract or other agreement or instrument to which the Company or any of its subsidiaries is a party or by which the Company or any of its subsidiaries is bound or by which any property of the Company or any of its subsidiaries may be bound or affected, (C) any federal, state, local or foreign law, regulation or rule, (D) any rule or regulation of any self-regulatory organization or other non-governmental regulatory authority (including, without limitation, the rules and regulations of the NASDAQ), or (E) any decree, judgment or order applicable to the Company, its subsidiaries or any of their respective properties, except, in the case of the foregoing clauses (B), (C), (D) and (E), for any such breach, violation, default or event that would not, individually or in the aggregate, have a Material Adverse Effect.

(s) *No Consents Required.* No consent, approval, authorization, order, registration or qualification of or with any court or arbitrator or governmental or regulatory authority is required for the execution, delivery and performance by the Company of each of the Transaction Documents, the issuance and sale of the Securities (including the issuance of the Underlying Securities upon conversion thereof) and the consummation of the transactions contemplated by the Transaction Documents, except for the registration of the Securities under the Securities Act, the qualification of the Indenture under the Trust Indenture Act and such consents, approvals, authorizations, orders and registrations or qualifications as may be required under applicable state securities laws in connection with the purchase and distribution of the Securities by the Underwriters.

(t) *Debarment.* The Company and its subsidiaries and, so far as the Company is aware, none of its or its subsidiaries' respective officers, employees or agents, have been convicted of any crime or engaged in any conduct that has resulted, or would reasonable be expected to result, in debarment under applicable law, including without limitation, 21 U.S.C. Section 335a; no claims, actions, proceedings or investigations that would reasonably be expected to result in such a material debarment or exclusion of the Company or any of its subsidiaries are pending or, so far as the Company is aware, threatened, against the Company, any of its subsidiaries or its or their officers, employees or agents;

(u) *Registration Rights.* Except as described in the Registration Statement (excluding the exhibits thereto), the Time of Sale Information and the Prospectus, or as has been validly waived in writing as of the date of this Agreement (copies of such waivers have been provided to you) or will terminate prior to the time of purchase: (i) no person has the right, contractual or otherwise, to cause the Company to issue or sell to it any shares of capital stock or other equity interests of the Company; (ii) no person has any preemptive rights, resale rights, rights of first refusal or other rights to purchase any shares of capital stock of or other equity interests in the Company; (iii) no person has the right to act as an underwriter or as a financial advisor to the Company in connection with the offering of the Securities and (iv) no person has the right, contractual or otherwise, to cause the Company or any of its subsidiaries to register under the Act any securities for sale or to include any such shares or interests in the Registration Statement or the offering contemplated thereby.

(v) *U.S. Food and Drug Administration.* Except as described in the Registration Statement, the Time of Sale Information and the Prospectus, the Company has filed with the U.S. Food and Drug Administration (the “FDA”) and applicable foreign, state, and local regulatory bodies, and has received approval of, all registrations, applications, licenses, requests for exemptions, permits, certificates, consents, approvals, clearances, and other regulatory authorizations necessary to conduct the Company’s business, including the research, development, application approval, manufacturing, labeling, distribution, marketing and sale, pricing reimbursement and record keeping of its products or product candidates; the Company and its subsidiaries have all necessary registrations, applications, licenses, permits, approvals, and other authorizations and have made all necessary filings, required under any applicable law, regulation or rule, and have obtained all necessary licenses, authorizations, consents and approvals from other persons, in order to conduct their respective businesses except where the failure to possess such license, authorization, consent or approval would not, individually or in the aggregate, have a Material Adverse Effect; neither the Company nor its subsidiaries is in violation of or default under, or has received notice of any proceedings relating to revocation or modification of, any such registration, application, license, request for exemption, permit, certificate, consent, approval, clearance, or other regulatory authorization or any federal, state, local or foreign law, regulation or rule or any decree, order or judgment applicable to the Company or its subsidiaries, except where such violation, default, revocation or modification would not, individually or in the aggregate, have a Material Adverse Effect;

(w) *Regulatory Compliance.* Except as disclosed in the Registration Statement, the Company is in compliance in all material respects with all statutes, rules, regulations, and policies applicable to the Company or any of its products, product candidates or activities, including, but not limited to, applicable FDA, foreign, state, and local rules and regulations relating to development, registration, investigational use, premarket clearance, licensure, application approval, good manufacturing practices, good laboratory practices, good clinical practices, product listing, quotas, packaging, labeling, processing, use, distribution, marketing, advertising, promotion, sale, offer for sale, pricing, reimbursement, record keeping, filing of reports, and storage, import, export or disposal of any product or product candidate developed, manufactured, or distributed by the Company except where the failure to be in compliance would not have or reasonably be expected to result in a Material Adverse Effect. Except as described in the Registration Statement, the Time of Sale Information and the Prospectus, there is no pending, completed or, to the Company’s knowledge, threatened, action (including any lawsuit, arbitration, or legal or administrative or regulatory proceeding, charge, complaint, or investigation) against the Company by the FDA or any other governmental entity, including any foreign, state, or local governmental entity, and the Company has not received any FDA Form 483, notice of adverse finding, warning letter or untitled letter from the FDA or any similar notification from any other governmental entity, including any foreign, state, or local governmental entity, which (i) contests the premarket clearance, licensure, registration, or approval of, the uses of, the distribution of, the manufacturing or packaging of, the testing of, the sale of, or the labeling and promotion of any of the Company’s products, (ii) withdraws its approval of, requests the recall, suspension, or seizure of, or withdraws or orders the withdrawal of advertising or sales promotional materials relating to, any of the Company’s products, (iii) imposes a clinical hold on any clinical investigation by the Company, (iv) enjoins production at any facility of the Company, (v) enters or proposes to enter into a consent decree of permanent injunction with the Company, or (vi) otherwise alleges any violation of any laws, rules or regulations by the Company, and which, either individually or in the aggregate, would have or reasonably be expected to result in a Material Adverse Effect;

(x) *Claims.* there are no (A) actions, suits, claims, investigations or proceedings pending or, to the Company's knowledge, threatened or contemplated to which the Company or any of its subsidiaries or any of its respective directors or officers is or would be a party or of which any of their respective properties is or would be subject at law or in equity, before or by any federal, state, local or foreign governmental or regulatory commission, board, body, authority or agency, or before or by any self-regulatory organization or other non-governmental regulatory authority (including, without limitation, NASDAQ), or (B) corporate integrity agreements, monitoring agreements, consent decrees, settlement orders or similar agreements (in each case where the Company or any of its subsidiaries is a party thereto) with or imposed by any governmental, administrative, regulatory, or law enforcement body or agency, except any such action, suit, claim, investigation or proceeding in the case of the foregoing clause (A) which, if resolved adversely to the Company would not, individually or in the aggregate, have a Material Adverse Effect;

(y) *Independent Accountants.* Ernst & Young LLP, who have certified certain financial statements of the Company and its subsidiaries are an independent registered public accounting firm with respect to the Company and its subsidiaries within the applicable rules and regulations adopted by the Commission and the Public Company Accounting Oversight Board (United States) and as required by the Securities Act.

(z) *Stock Options.* Each stock option granted under any stock option plan of the Company (each, a "Stock Plan") was granted with a per share exercise price no less than the fair market value per share of Common Stock on the grant date of such option, and no such grant involved any "back-dating" or similar practice with respect to the effective date of such grant; and except as disclosed in the Registration Statement, the Time of Sale Information and the Prospectus and except as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect, each such option (i) was granted in compliance with applicable law and with the applicable Stock Plan(s), (ii) was duly approved by the board of directors (or a duly authorized committee thereof or an officer of the Company duly authorized by the board of directors or authorized committee thereof to make such grants) of the Company, and (iii) has been properly accounted for in the Company's financial statements in accordance with U.S. generally accepted accounting principles and disclosed in the Company's filings with the Commission.

(aa) *Subsequent Changes.* Subsequent to the respective dates as of which information is given in the Registration Statement, the Time of Sale Information and the Prospectus, in each case excluding any amendments or supplements to the foregoing made after the execution of this Agreement, there has not been (i) any material adverse change, or any development that could reasonably be expected to result in a material adverse change, in the business, properties, general affairs, financial condition, management, stockholders' equity, assets or results of operations of the Company and its subsidiaries taken as a whole, (ii) any transaction to which either the Company or its subsidiaries is a party and which is material to the Company and its subsidiaries taken as a whole, (iii) any obligation or liability, direct or contingent (including any off-balance

sheet obligations), incurred by the Company or any of its subsidiaries, which is material to the Company and its subsidiaries taken as a whole, (iv) any material change in the capital stock or outstanding indebtedness of the Company or any of its subsidiaries (other than the shares of Common Stock upon exercise of stock options disclosed as outstanding in the Registration Statement (excluding the exhibits thereto), the Time of Sale Information and the Prospectus and the grant of awards under stock incentive plans described in the Registration Statement, in each case in the ordinary course of business) or (v) any dividend or distribution of any kind declared, paid or made on the capital stock of the Company.

(bb) *Lock-Up Agreements*. The Company has obtained for the benefit of the Underwriters the agreement (a “Lock-Up Agreement”), in the form set forth as Exhibit A hereto, of each of its directors and “officers” (within the meaning of Rule 16a-1(f) under the Exchange Act).

(cc) *Investment Company Act*. The Company is not and, after giving effect to the offering and sale of the Securities and the application of the proceeds thereof as described in the Registration Statement, the Time of Sale Information and the Prospectus, it will not be, an “investment company” or an entity “controlled” by an “investment company,” within the meaning of the Investment Company Act of 1940, as amended, and the rules and regulations of the Commission thereunder (collectively, the “Investment Company Act”);

(dd) *Title to Real and Personal Property*. Except as disclosed in the Registration Statement (excluding the exhibits thereto), the Time of Sale Information and the Prospectus, or as would not, individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect, (i) the Company and its subsidiaries have good and marketable title to all property (real, if any, and personal, excluding for the purposes of this Section 3(dd), Intellectual Property (as defined below)) described in the Registration Statement, the Time of Sale Information and the Prospectus as being owned by any of them, free and clear of all liens, claims, security interests or other encumbrances; and (ii) all the property described in the Registration Statement, the Time of Sale Information and the Prospectus as being held under lease by the Company and its subsidiaries is held thereby under valid, subsisting and enforceable leases;

(ee) *Intellectual Property*. Except as disclosed in the Registration Statement (excluding the exhibits thereto), the Time of Sale Information and the Prospectus, or as would not, individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect, (i) the Company and its subsidiaries own, or have obtained valid and enforceable licenses for, or other rights to use, the inventions, patent applications, patents, trademarks (both registered and unregistered), service marks (both registered and unregistered), tradenames, service names, copyrights, trade secrets and other proprietary information described, if any, in the Registration Statement (excluding the exhibits thereto), the Time of Sale Information and the Prospectus as being owned or licensed by it or that are necessary for, or used in, the conduct of their respective businesses as currently conducted or as currently proposed to be conducted (collectively, “Intellectual Property”), except as enforceability may be limited by bankruptcy, insolvency or similar laws affecting the rights of creditors generally and general equitable principles; (ii) the intellectual property owned by the Company and its subsidiaries is free and clear of all liens and

neither Company nor any of its subsidiaries is obligated to pay a royalty, grant a license or provide other consideration to any third party in connection with the Intellectual Property; (iii) there are no third parties who have established or, to the Company's knowledge, will be able to establish rights to any Intellectual Property, except for, and to the extent of, the ownership rights of the licensors of such Intellectual Property which is licensed to the Company or its subsidiaries and disclosed in the Registration Statement (excluding the exhibits thereto), the Time of Sale Information and the Prospectus; (iv) to the Company's knowledge, there is no infringement by third parties of any Intellectual Property; (v) there is no pending or, to the Company's knowledge, threatened action, suit, proceeding or claim by others challenging the Company's or its subsidiaries' rights in or to any Intellectual Property, and the Company is unaware of any facts which would form a reasonable basis for any such action, suit, proceeding or claim; (vi) there is no pending or, to the Company's knowledge, threatened action, suit, proceeding or claim by others challenging the validity, enforceability, scope, registration, priority, ownership or inventorship of any Intellectual Property, and the Company is unaware of any facts which would form a reasonable basis for any such action, suit, proceeding or claim; (vii) there is no pending or, to the Company's knowledge, threatened action, suit, proceeding or claim by others that the Company or its subsidiaries infringes or otherwise violates, or would, upon the commercialization of any product or service described in the Registration Statement, the Time of Sale Information and the Prospectus as under development, infringe or violate, any patent, trademark, tradename, service name, copyright, trade secret or other proprietary rights of others, and the Company is unaware of any facts which would form a reasonable basis for any such action, suit, proceeding or claim; (viii) the Company and its subsidiaries, as applicable, have complied with the terms of each agreement pursuant to which Intellectual Property has been licensed to the Company or its subsidiaries, and all such agreements are in full force and effect; (ix) to the Company's knowledge, there is no patent or patent application that contains claims that interfere with the issued or pending claims of any of the Intellectual Property or that challenges the validity, enforceability or scope of any of the Intellectual Property; (x) to the Company's knowledge, there is no prior art that may render any patent application within the Intellectual Property unpatentable that has not been disclosed to the United States Patent and Trademark Office (the "USPTO") or of which the Company is otherwise aware; (xi) the product candidates described in the Registration Statement, the Time of Sale Information and the Prospectus as under development by the Company or any of its subsidiaries fall within the scope of the claims of one or more patents or patent applications owned by, or exclusively licensed to, the Company or its subsidiaries; and (xii) the Company has taken reasonable measures to protect its confidential information and trade secrets and to maintain and safeguard the Intellectual Property, including the execution of appropriate nondisclosure and confidentiality agreements.

(ff) *Patents.* All patents and patent applications owned by or licensed to the Company or any of its subsidiaries or under which the Company or any of its subsidiaries has rights that are necessary for, or used in, the conduct of the their respective businesses as currently conducted or as currently proposed to be conducted have, to the knowledge of the Company and other than EP 0847278, been duly and properly filed and maintained; and to the knowledge of the Company, the parties prosecuting such applications have complied with their duty of candor and disclosure to the USPTO in connection with such applications.

(gg) *Labor Practices.* (i) Neither the Company nor any of its subsidiaries is engaged in any unfair labor practice, (ii) there is (A) no unfair labor practice complaint pending or, to the Company's knowledge, threatened against the Company or any of its subsidiaries before the National Labor Relations Board, and no grievance or arbitration proceeding arising out of or under collective bargaining agreements is pending or, to the Company's knowledge, threatened, (B) no strike, labor dispute, slowdown or stoppage pending or, to the Company's knowledge, threatened against the Company or any of its subsidiaries and (C) no union representation dispute currently existing concerning the employees of the Company or any of its subsidiaries, (iii) to the Company's knowledge, no union organizing activities are currently taking place concerning the employees of the Company or any of its subsidiaries and (iv) there has been no violation of any federal, state, local or foreign law relating to discrimination in the hiring, promotion or pay of employees, any applicable wage or hour laws or any provision of the Employee Retirement Income Security Act of 1974, as amended, or the rules and regulations promulgated thereunder concerning the employees of the Company or any of its subsidiaries; in the case of clauses (ii)—(iv) above, except for matters which would not, individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect.

(hh) *Certain Environmental Matters.* the Company and its subsidiaries and their respective properties, assets and operations are in compliance with, and the Company and its subsidiaries hold all permits, authorizations and approvals required under, Environmental Laws (as defined below), except to the extent that failure to so comply or to hold such permits, authorizations or approvals would not, individually or in the aggregate, have a Material Adverse Effect; there are no past or present events, conditions, circumstances, activities, practices, actions, omissions or plans that could reasonably be expected to give rise to any material costs or liabilities to the Company or its subsidiaries under, or to interfere with or prevent compliance by the Company or its subsidiaries with, Environmental Laws; except as would not, individually or in the aggregate, have a Material Adverse Effect, the Company or its subsidiaries (A) are not the subject of any investigation, (B) have not received any notice or claim, (C) are not party to or affected by any pending or, to the Company's knowledge, threatened action, suit or proceeding, (D) are not bound by any judgment, decree or order or (E) have not entered into any agreement, in each case relating to any alleged violation of any Environmental Law or any actual or alleged release or threatened release or cleanup at any location of any Hazardous Materials (as defined below) (as used herein, "Environmental Law" means any federal, state, local or foreign law, statute, ordinance, rule, regulation, order, decree, judgment, injunction, permit, license, authorization or other binding requirement, or common law, relating to health, safety or the protection, cleanup or restoration of the environment or natural resources, including those relating to the distribution, processing, generation, treatment, storage, disposal, transportation, other handling or release or threatened release of Hazardous Materials, and "Hazardous Materials" means any material (including, without limitation, pollutants, contaminants, hazardous or toxic substances or wastes) that is regulated by or may give rise to liability under any Environmental Law).

(ii) *Taxes.* The Company and its subsidiaries have paid all federal, state, local and foreign taxes and filed all tax returns required to be paid or filed through the date hereof; and except as otherwise disclosed in each of the Registration Statement, the Time of Sale Information and the Prospectus, there is no tax deficiency that has been, or could reasonably be

expected to be, asserted against the Company or any of its subsidiaries or any of their respective properties or assets, except (i) such taxes being contested in good faith and for which adequate reserves have been provided or (ii) where the failure to so file or pay would not, individually or in the aggregate, result in a Material Adverse Effect.

(jj) *Insurance*. The Company has insurance covering its respective properties, operations, personnel and businesses, including business interruption insurance, which insurance is in amounts and insures against such losses and risks as are adequate to protect the Company and its businesses; and the Company has not (i) received notice from any insurer or agent of such insurer that capital improvements or other expenditures are required or necessary to be made in order to continue such insurance or (ii) any reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage at similar insurers as may be necessary to continue its business as now conducted at a cost that would not result in any Material Adverse Event.

(kk) *Contracts*. Neither the Company nor any of its subsidiaries has sent or received any communication regarding termination of, or intent not to renew, any of the contracts or agreements referred to or described in the Time of Sale Information, the Prospectus or any free writing prospectus, or referred to or described in, or filed as an exhibit to, the Registration Statement, and no such termination or non-renewal has been threatened by the Company or any of its subsidiaries or, to the Company's knowledge, any other party to any such contract or agreement.

(ll) *Accounting Controls*. The Company and its subsidiaries maintain systems of "internal control over financial reporting" (as defined in Rule 13a-15(f) of the Exchange Act) that comply with the requirements of the Exchange Act and have been designed by, or under the supervision of, their respective principal executive and principal financial officers, or persons performing similar functions, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP. The Company and its subsidiaries maintain internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in accordance with management's general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain asset accountability; (iii) access to assets is permitted only in accordance with management's general or specific authorization; (iv) 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 (v) interactive data in eXtensible Business Reporting Language included or incorporated by reference in the Registration Statement, the Prospectus and the Time of Sale Information fairly presents the information called for in all material respects and is prepared in accordance with the Commission's rules and guidelines applicable thereto. Except as disclosed in the Registration Statement, the Time of Sale Information and the Prospectus, there are no material weaknesses in the Company's internal controls. The Company's auditors and the Audit Committee of the Board of Directors of the Company have been advised of: (i) all significant deficiencies and material weaknesses in the design or operation of internal controls over financial reporting which are reasonably likely to adversely affect the Company's ability to record, process, summarize and report financial information; and (ii) any fraud, whether or not material, that involves management or other employees who have a significant role in the Company's internal controls over financial reporting.

(mm) *Disclosure Controls* . The Company and its subsidiaries maintain an effective system of “disclosure controls and procedures” (as defined in Rule 13a-15(e) of the Exchange Act) that complies with the requirements of the Exchange Act and that has been designed to ensure that information required to be disclosed by the Company in reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Commission’s rules and forms, including controls and procedures designed to ensure that such information is accumulated and communicated to the Company’s management as appropriate to allow timely decisions regarding required disclosure. The Company and its subsidiaries have carried out evaluations of the effectiveness of their disclosure controls and procedures as required by Rule 13a-15 of the Exchange Act.

(nn) *Description of Securities*. The statements set forth in the Time of Sale Information and the Prospectus under the captions “Description of Notes” and “Description of Capital Stock” insofar as they purport to constitute summaries of the terms of the notes or stock, respectively, fairly summarizes such terms in all material respects.

(oo) *Forward Looking Statements*. No forward-looking statement (within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act) contained in the Registration Statement, the Time of Sale Information and the Prospectus has been made or reaffirmed without a reasonable basis or has been disclosed other than in good faith.

(pp) *Statistical and Market Data*. Nothing has come to the attention of the Company that has caused the Company to believe that the statistical and market-related data included or incorporated by reference in each of the Registration Statement, the Time of Sale Information and the Prospectus is not based on or derived from sources that are reliable and accurate in all material respects, and the Company has obtained the written consent to the use of such data from such sources to the extent required.

(qq) *No Unlawful Payments*. In the past five years, neither the Company nor any of its subsidiaries, nor any director, officer or employee of the Company or any of its subsidiaries nor, to the knowledge of the Company, any agent, affiliate or other person associated with or acting on behalf of the Company or any of its subsidiaries has (i) used any corporate funds for any unlawful contribution, gift, entertainment or other unlawful expense in each case relating to political activity; (ii) made or taken an act in furtherance of an offer, promise or authorization of any direct or indirect unlawful payment or benefit to any foreign or domestic government official or employee, including of any government-owned or controlled entity or of a public international organization, or any person acting in an official capacity for or on behalf of any of the foregoing, or any political party or party official or candidate for political office; (iii) violated or is in violation of any provision of the Foreign Corrupt Practices Act of 1977, as amended, or any applicable law or regulation implementing the OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions, or committed an offence under the Bribery Act 2010 of the United Kingdom, or any other applicable anti-bribery or anti-corruption law; or (iv) made, offered, agreed, requested or taken an act in furtherance of any

unlawful bribe or other unlawful benefit, including, without limitation, any rebate, payoff, influence payment, kickback or other unlawful or improper payment or benefit. The Company and its subsidiaries have instituted, maintain and enforce, and will continue to maintain and enforce policies and procedures designed to promote and ensure compliance with all applicable anti-bribery and anti-corruption laws. Neither the Company nor its subsidiaries will use, directly or indirectly, the proceeds of the offering 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 applicable anti-corruption laws.

(rr) *Compliance with Anti-Money Laundering Laws.* The operations of the Company and its subsidiaries are and have been conducted at all times in compliance with applicable financial recordkeeping and reporting requirements, including those of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the applicable money laundering statutes of all jurisdictions where the Company or any of its subsidiaries conducts business, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency (collectively, the “Anti-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 or any of its subsidiaries with respect to the Anti-Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

(ss) *No Conflicts with Sanctions Laws.* Neither the Company nor any of its subsidiaries, directors, officers or employees, nor, to the knowledge of the Company, any agent, affiliate or other person associated with or acting on behalf of the Company or any of its subsidiaries, 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 (“OFAC”) or the U.S. Department of State and including, without limitation, the designation as a “specially designated national” or “blocked person”), the United Nations Security Council (“UNSC”), the European Union, Her Majesty’s Treasury (“HMT”) or other relevant sanctions authority (collectively, “Sanctions”), nor is the Company or any of its subsidiaries located, organized or resident in a country or territory that is the subject or target of Sanctions, including, without limitation, Cuba, Iran, North Korea, Sudan, Syria and Crimea (each, a “Sanctioned Country”); and the Company will not directly or indirectly use the proceeds of the offering of the Securities 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 that, at the time of such funding or facilitation, is the subject or target of Sanctions, (ii) to fund or facilitate any activities of or business in any Sanctioned Country or (iii) 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. For the past five years, the Company and its subsidiaries have not knowingly engaged in and are not now knowingly engaged in any dealings or transactions with any person that at the time of the dealing or transaction is or was the subject or the target of Sanctions or with any Sanctioned Country.

(tt) *No Restrictions on Subsidiaries.* No subsidiary of the Company is currently prohibited, directly or indirectly, under any agreement or other instrument to which it is a party or is subject, from paying any dividends to the Company, from making any other distribution on such subsidiary's capital stock, from repaying to the Company any loans or advances to such subsidiary from the Company or from transferring any of such subsidiary's properties or assets to the Company or any other subsidiary of the Company.

(uu) *Clinical Information.* The preclinical tests and clinical trials that are described in, or the results of which are referred to in, the Registration Statement, the Time of Sale Information and the Prospectus were and, if still pending, are being conducted in all material respects in accordance with research protocols, good laboratory practices, and good clinical practices for each such test or trial, as the case may be, and applicable foreign, local, state, and federal laws, rules and regulations, and all manufacturing operations conducted for the benefit of the Company for each such clinical trial have been and are being conducted in material compliance with applicable laws, including, to the extent applicable, the provisions of the FDA's current good manufacturing practice regulations and similar requirements of foreign authorities; each description of the results of such tests and trials contained in the Registration Statement, the Time of Sale Information and the Prospectus is accurate and complete in all material respects and fairly presents in all material respects the data derived from such tests and trials, and the Company has no knowledge of any other studies or tests not described in the Registration Statement (excluding the exhibits thereto), the Time of Sale Information and the Prospectus the results of which are inconsistent with, or otherwise call into question, the results described or referred to in the Registration Statement, the Time of Sale Information and the Prospectus; except as described in the Registration Statement (excluding the exhibits thereto), the Time of Sale Information and the Prospectus, the Company has not received any notices or other correspondence from the FDA of the U.S. Department of Health and Human Services or any committee thereof or from any other U.S. or foreign government or any other drug or medical device regulatory agency (collectively, the "Regulatory Agencies") or from any clinical investigator that has participated or is participating in, or institutional review board that has or has had jurisdiction over such test or trial requiring or threatening to take action to initiate the termination, suspension or material modification of any clinical trials that are described or referred to in the Registration Statement, the Time of Sale Information and the Prospectus; and the Company has operated and currently is in compliance in all material respects with all applicable laws, rules, regulations and material policies of the Regulatory Agencies, except to the extent any non-compliance with policies is described in the Registration Statement (excluding the exhibits thereto), the Time of Sale Information or the Prospectus.

(vv) *Company Status.* The Company is not and during the past three years neither the Company nor any predecessor was: (A) a blank check company as defined in Rule 419(a)(2) of the Securities Act, (B) a shell company, other than a business combination related shell company, each as defined in Rule 405 of the Securities Act, or (C) an issuer for an offering of penny stock as defined in Rule 3a51-1 of the Exchange Act.

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

(xx) *No Stabilization*. The Company has not taken, and to the Company's knowledge, the Company's directors or officers, affiliates or controlling persons have not taken, directly or indirectly, any action designed to or that could reasonably be expected to cause or result in any stabilization or manipulation of the price of the Securities.

(yy) *Description of Documents*. There are no contracts or documents which are required to be described in the Registration Statement, the Time of Sale Information or the Prospectus or to be filed as exhibits to the Registration Statement or incorporated by reference thereto which have not been so described and filed or incorporated by reference thereto as required.

(zz) *Exchange Act Filings*. The Company has timely made all filings required to be made by it under the Exchange Act and the rules and regulations promulgated thereunder.

(aaa) *FINRA*. To the Company's knowledge, there are no affiliations or associations between (i) any member of FINRA and (ii) the Company or any of the Company's officers, directors or 5% or greater security holders that are affiliated with an officer or director of the Company or any beneficial owner of the Company's unregistered equity securities that were acquired at any time on or after the 180th day immediately preceding the date the Registration Statement was initially filed with the Commission, except as disclosed in the Registration Statement (excluding the exhibits thereto), the Time of Sale Information and the Prospectus.

(bbb) *eXtensible Business Reporting Language*. The interactive data in eXtensible Business Reporting Language included or incorporated by reference in the Registration Statement fairly presents the information called for in all material respects and has been prepared in accordance with the Commission's rules and guidelines applicable thereto.

(ccc) *Offering Material*. Prior to the later of (i) the expiration or termination of the option granted to the several Underwriters in Section 2, and (ii) the completion of the Underwriters' distribution of the Securities, the Company has not distributed and will not distribute any offering material in connection with the offering of the Securities other than the Registration Statement, the Time of Sale Information, the Prospectus or any free writing prospectus identified on Annex A hereto or such other free writing prospectus that has been reviewed and consented to by the Representatives.

In addition, any certificate signed by any officer of the Company and delivered to any Underwriter or counsel for the Underwriters in connection with the offering of the Securities shall be deemed to be a representation and warranty by the Company, as to matters covered thereby, to each Underwriter.

4. Further Agreements of the Company. The Company agrees:

(a) *Required Filings*. The Company will file the final Prospectus with the Commission within the time periods specified by Rule 424(b) and Rule 430A, 430B or 430C under the Securities Act, will file any Issuer Free Writing Prospectus (including the term sheet substantially in the form of Annex B hereto) to the extent required by Rule 433 under the Securities Act; and will file promptly all reports and any definitive proxy or information

statements required to be filed by the Company with the Commission pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act subsequent to the date of the Prospectus and for so long as the delivery of a prospectus is required in connection with the offering or sale of the Securities; and the Company will furnish copies of the Prospectus and each Issuer Free Writing Prospectus (to the extent not previously delivered) to the Underwriters in New York City prior to 10:00 A.M., New York City time, on the business day next succeeding the date of this Agreement in such quantities as the Representative may reasonably request. The Company will pay the registration fees for this offering within the time period required by Rule 456(b)(1) under the Securities Act (without giving effect to the proviso therein) and in any event prior to the Closing Date.

(b) *Blue Sky Compliance.* The Company will qualify the Securities for offer and sale under the securities or Blue Sky laws of such jurisdictions as the Representative shall reasonably request and will continue such qualifications in effect so long as required for distribution of the Securities; provided that the Company shall not be required to (i) qualify as a foreign corporation or other entity or as a dealer in securities in any such jurisdiction where it would not otherwise be required to so qualify, (ii) file any general consent to service of process in any such jurisdiction or (iii) subject itself to taxation in any such jurisdiction if it is not otherwise so subject.

(c) *Delivery of Copies.* The Company will make available and furnish to the Underwriters in New York City, as soon as practicable after this Agreement becomes effective and during the period when a prospectus relating to the Securities is required by the Act to be delivered (whether physically or through compliance with Rule 172 under the Act or any similar rule), as many copies of the Prospectus (or of the Prospectus as amended or supplemented if the Company shall have made any amendments or supplements thereto after the effective date of the Registration Statement) as the Underwriters may reasonably request for the purposes contemplated by the Act. The Company will furnish to the Representatives and Underwriters' counsel copies of the Registration Statement, as initially filed with the Commission, and of all amendments thereto (including all exhibits thereto) and sufficient copies of the foregoing (other than exhibits) for distribution of a copy to each of the other Underwriters.

(d) *Post-Effective Amendments.* If, at the time this Agreement is executed and delivered, it is necessary or appropriate for a post-effective amendment to the Registration Statement, or a Registration Statement under Rule 462(b) under the Act, to be filed with the Commission and become effective before the Securities may be sold, the Company will use its reasonable best efforts to cause such post-effective amendment or such Registration Statement to be filed and become effective, and will pay any applicable fees in accordance with the Act, as soon as possible; and the Company will advise the Representative promptly and, if requested by the Representative, will confirm such advice in writing, (i) when such post-effective amendment or such Registration Statement has become effective, and (ii) when the Prospectus is filed with the Commission pursuant to Rule 424(b) under the Act (which the Company agrees to file in a timely manner in accordance with such Rules);

(e) *Requests by the Commission.* The Company will advise the Representatives promptly, confirming such advice in writing, of any request by the Commission for amendments or supplements to the Registration Statement, any preliminary prospectus, the Prospectus or any

free writing prospectus or for additional information with respect thereto, or of notice of institution of proceedings for, or the entry of a stop order, suspending the effectiveness of the Registration Statement or preventing or suspending the use of any preliminary prospectus, any free writing prospectus or the Prospectus and, if the Commission should enter any such stop order, to use its reasonable best efforts to obtain the lifting or removal of such order as soon as possible; to advise the Representatives promptly of any proposal to amend or supplement the Registration Statement, any preliminary prospectus, the Time of Sale Information, the Prospectus or any free writing prospectus, and to provide the Representatives and Underwriters' counsel copies of any such documents for review and comment a reasonable amount of time prior to any proposed filing and to file no such amendment or supplement to which you shall have objected in writing; subject to Section 4(e) hereof, to file promptly all reports and documents and any preliminary or definitive proxy or information statement required to be filed by the Company with the Commission in order to comply with the Exchange Act for so long as a prospectus is required by the Act to be delivered (whether physically or through compliance with Rule 172 under the Act or any similar rule) in connection with any sale of Securities; and to provide the Representatives, for their review and comment, with a copy of such reports and statements and other documents to be filed by the Company pursuant to Section 13, 14 or 15(d) of the Exchange Act during such period a reasonable amount of time prior to any proposed filing, and to file no such report, statement or document to which you shall have reasonably objected in writing; and to promptly notify you of such filing;

(g) *Ongoing Compliance.* The Company will advise the Underwriters promptly of the happening of any event within the period during which a prospectus is required by the Act to be delivered (whether physically or through compliance with Rule 172 under the Act or any similar rule) in connection with any sale of Securities, which event could require the making of any change in the Prospectus then being used so that the Prospectus would not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they are made, not misleading, and to advise the Underwriters promptly if, during such period, it shall become necessary to amend or supplement the Prospectus to cause the Prospectus to comply with the requirements of the Act, and, in each case, during such time, subject to Section 0 hereof, to prepare and furnish, at the Company's expense, to the Underwriters promptly such amendments or supplements to such Prospectus as may be necessary to reflect any such change or to effect such compliance.

(h) *Earnings Statements.* The Company will make generally available (within the meaning of Rule 158 under the Act) to its security holders, and, if not available on EDGAR, to deliver to the Representatives, an earnings statement of the Company (which will satisfy the provisions of Section 11(a) of the Act) covering a period of twelve months beginning after the effective date of the Registration Statement (as defined in Rule 158(c) under the Act) as soon as is reasonably practicable after the termination of such twelve-month period but in any case not later than the date determined in accordance with the provisions of the last paragraph of Section 11(a) of the Act and Rule 158(c) thereunder.

(i) *Financial Statements.* The Company will, if requested by the Representatives, furnish to them as early as practicable prior to the time of purchase and any additional time of purchase, as the case may be, but not later than two business days prior thereto, a copy of the

latest available unaudited interim and monthly financial statements, if any, of the Company and its consolidated subsidiaries which have been read by the Company's independent registered public accountants, as stated in their letter to be furnished pursuant to Section 7(d) hereof, provided, however, that the Company shall not be required to furnish any materials pursuant to this clause if such materials are available via EDGAR.

(j) *Payment of Costs.* The Company will pay all costs, expenses, fees and taxes in connection with (i) the preparation and filing of the Registration Statement, each preliminary prospectus, the Prospectus, each free writing prospectus prepared by or on behalf of, used by, or referred to by the Company, and any amendments or supplements to any of the foregoing, and the printing and furnishing of copies of each thereof to the Underwriters and to dealers (including costs of mailing and shipment), (ii) the registration, issue, sale and delivery of the Securities including any stock or transfer taxes and stamp or similar duties payable upon the sale, issuance or delivery of the Securities to the Underwriters, (iii) the producing, word processing and/or printing of this Agreement, any Agreement Among Underwriters, any dealer agreements, and any closing documents (including compilations thereof by the Company or its counsel) and the reproduction and/or printing and furnishing of copies of each thereof to the Underwriters and (except closing documents) to dealers (including costs of mailing and shipment), (iv) the qualification of the Securities for offering and sale under state or foreign laws and the determination of their eligibility for investment under state or foreign law (including the reasonable legal fees and filing fees and other reasonable disbursements of counsel for the Underwriters) and the printing and furnishing of copies of any blue sky surveys, "Canadian wrapper" or legal investment surveys to the Underwriters and to dealers, and any supplements thereto, in an amount not to exceed \$5,000, (v) any listing of the Securities on any securities exchange or qualification of the Underlying Securities for listing on the NASDAQ and any registration thereof under the Exchange Act, (vi) any filing for review of the offering of the Securities by FINRA, including the reasonable legal fees and filing fees and other reasonable disbursements of counsel to the Underwriters relating to FINRA matters, in an amount not to exceed \$5,000 (excluding FINRA filing fees), (vii) the fees and disbursements of any transfer agent or registrar for the Securities, (viii) the costs and expenses of the Company relating to presentations or meetings undertaken in connection with the marketing of the offering and sale of the Securities to prospective investors and the Underwriters' sales forces, including, without limitation, expenses associated with the production of road show slides and graphics, fees and expenses of any consultants (whose engagement has been preapproved by the Company) engaged in connection with the road show presentations, travel, lodging and other expenses incurred by the officers of the Company and any such consultants (provided, however, that the Underwriters and the Company shall each pay 50% of the cost of chartering any aircraft to be used in connection with the road show), (ix) all costs and expenses of qualifying the Securities for inclusion in the book-entry settlement system of the DTC, and (x) the performance of the Company's other obligations hereunder; except as otherwise provided in this Agreement (including, without limitation, Section 6, the last paragraph of Section 8 and Section 11 hereof), the Underwriters shall pay their own costs and expenses in connection with the offering of the Securities contemplated hereby, including the costs and expenses of their legal counsel.

(k) *Clear Market*. Beginning on the date hereof and ending on, and including, the date that is 90 days after the date of the Prospectus (the “Lock-Up Period”), without the prior written consent of the Representatives, the Company will not (i) issue, sell, offer to sell, contract or agree to sell, hypothecate, pledge, grant any option to purchase or otherwise dispose of or agree to dispose of, directly or indirectly, or establish or increase a put equivalent position or liquidate or decrease a call equivalent position within the meaning of Section 16 of the Exchange Act and the rules and regulations of the Commission promulgated thereunder, with respect to, any Common Stock, or any other securities convertible into or exchangeable or exercisable for, or any warrants or other rights to purchase, the foregoing, (ii) file or cause to become effective a registration statement under the Act relating to the offer and sale of any Common Stock, or any other securities convertible into or exchangeable or exercisable for, or any warrants or other rights to purchase, the foregoing, (iii) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of Common Stock, or any other securities convertible into or exchangeable or exercisable for, or any warrants or other rights to purchase, the foregoing, whether any such transaction is to be settled by delivery of Common Stock or such other securities, in cash or otherwise or (iv) publicly announce an intention to effect any transaction specified in clause (i), (ii) or (iii), except, in each case, for (A) the registration of the offer and sale by the Company of the Securities as contemplated by this Agreement, (B) (i) issuances of Common Stock upon the exercise of options, warrants or other rights to acquire Common Stock under a stock incentive plan of the Company disclosed as outstanding in the Registration Statement (excluding the exhibits thereto), the Time of Sale Information and the Prospectus and (ii) the grant of any stock appreciation rights, restricted stock, restricted stock units, stock awards or stock options to employees, consultants, advisors, officers or directors of the Company under a stock incentive plan or inducement award disclosed in the Registration Statement (excluding the exhibits thereto), the Time of Sale Information and the Prospectus and additional inducement awards of up to 200,000 shares of Common Stock, (C) (i) the issuance by the Company of Common Stock upon exercise of a warrant, or the conversion of a security, in each case outstanding on the date hereof and (ii) the issuance of employee stock options not exercisable during the Lock-Up Period pursuant to stock option plans described in the Registration Statement (excluding the exhibits thereto), the Time of Sale Information or the Prospectus, (D) the filing by the Company of a registration statement on Form S-8 or a successor form thereto relating to stock option plans described in the Registration Statement (excluding the exhibits thereto), inducement awards granted prior to the date hereof or inducement awards granted in accordance with clause (B)(ii) above, the Time of Sale Information or the Prospectus, (E) the filing of a registration statement providing for the resale of shares of Common Stock as required by a contractual agreement granting registration rights in effect on the date hereof or causing any such registration statement to become effective, and (F) issuances of Common Stock or other securities in connection with a transaction that includes a commercial relationship (including joint ventures, marketing or distribution arrangements, collaboration arrangements or intellectual property license agreements), any acquisition of assets or at least a controlling portion of the equity of another entity or the repayment, satisfaction, arrangement or borrowing pursuant to an existing or future credit facility or agreement (provided that (x) the aggregate number of shares of Common Stock or securities issued pursuant to this clause (F) shall not exceed 5.0% of the total number of outstanding shares of Common Stock immediately following the issuance and sale of the Underwritten Securities pursuant hereto and (y) the holder of such shares of Common Stock or securities shall sign a Lock-Up Agreement in the form referred to in Section 3(bb) hereof.

(l) *Underlying Securities*. The Company will reserve and keep available at all times, free of pre-emptive rights, shares of Common Stock for the purpose of enabling the Company to satisfy all obligations to issue the Underlying Securities upon conversion of the Securities. The Company will use its best efforts to cause the Underlying Securities to be listed on NASDAQ.

(m) *Press Releases*. The Company will, prior to the Option Termination Date, provide the Representatives with reasonable advance notice of and opportunity to comment on any press release or other communication directly or indirectly and hold no press conferences with respect to the Company, the financial condition, results of operations, business, properties, assets, or liabilities of the Company, or the offering of the Securities, and to issue no such press release or communications or hold such press conference without your prior consent (such consent not to be unreasonably withheld), except as required by applicable law or stock exchange rule.

(n) *Prospectus*. The Company will not, at any time at or after the execution of this Agreement, to, directly or indirectly, offer or sell any Securities by means of any "prospectus" (within the meaning of the Act), or use any "prospectus" (within the meaning of the Act) in connection with the offer or sale of the Securities, in each case other than the Prospectus.

(o) *No Stabilization*. The Company will not take, directly or indirectly, any action designed to or that could reasonably be expected to cause or result in any stabilization or manipulation of the price of the Securities and will not take any action prohibited by Regulation M under the Exchange Act in connection with the distribution of the Securities contemplated hereby.

(p) *Transfer Agent and Registrar*. For so long as the Company is subject to the reporting requirements of Section 13(g) or 15(d) of the Exchange Act, to maintain a transfer agent and, if necessary under the jurisdiction of incorporation of the Company, a registrar for the Common Stock.

(q) *Free Writing Prospectus*. The Company shall furnish to the Representatives for review, a reasonable amount of time prior to the proposed time of filing or use thereof, a copy of each proposed free writing prospectus or any amendment or supplement thereto prepared by or on behalf of, used by, or referred to by the Company, and the Company shall not file, use or refer to any proposed free writing prospectus or any amendment or supplement thereto without the Representatives' prior written consent, which consent shall be deemed to have been given in respect of the Road Show and any free writing prospectus included on Schedule B hereto; the Company shall furnish to each Underwriter, without charge, as many copies of any free writing prospectus prepared by or on behalf of, used by or referred to by the Company as such Underwriter may reasonably request; if at any time when a prospectus is required by the Act to be delivered (whether physically or through compliance with Rule 172 under the Act or any similar rule) in connection with sales of the Securities (but in any event if at any time through and including the time of purchase) there occurred or occurs an event or development as a result of which any free writing prospectus prepared by or on behalf of, used by, or referred to by the Company conflicted or would conflict with the information contained in the Registration Statement or, when taken together with the preliminary prospectus accompanying, or delivered prior to delivery of, such free writing prospectus, included or would include an untrue statement of a material fact or omitted or would omit to state a material fact necessary in order to make the

statements therein, in the light of the circumstances prevailing at such time, not misleading, the Company shall promptly amend or supplement such free writing prospectus to eliminate or correct such conflict so that the statements in such free writing prospectus as so amended or supplemented will not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading, as the case may be; provided, however, that prior to amending or supplementing any such free writing prospectus, the Company shall furnish to the Representatives for review, a reasonable amount of time prior to the proposed time of filing or use thereof, a copy of such proposed amended or supplemented free writing prospectus, and the Company shall not file, use or refer to any such amended or supplemented free writing prospectus without the Representatives' prior written consent.

(r) The Company shall not take any action that would result in an Underwriter or the Company being required to file with the Commission pursuant to Rule 433(d) under the Act a free writing prospectus prepared by or on behalf of such Underwriter that such Underwriter otherwise would not have been required to file thereunder.

(s) *Electronic Prospectus*. If requested by the Representatives, the Company shall cause to be prepared and delivered, at its expense, within one business day from the effective date of this Agreement, to the Representatives an "electronic Prospectus" to be used in connection with the offering and sale of the Securities; as used herein, the term "electronic Prospectus" means a form of Time of Sale Information, and any amendment or supplement thereto, that meets each of the following conditions: (i) it shall be encoded in an electronic format, satisfactory to the Representatives, that may be transmitted electronically by the Representatives to offerees and purchasers of the Securities; (ii) it shall disclose the same information as the paper Time of Sale Information, except to the extent that graphic and image material cannot be disseminated electronically, in which case such graphic and image material shall be replaced in the electronic Prospectus with a fair and accurate narrative description or tabular representation of such material, as appropriate; and (iii) it shall be in or convertible into a paper format or an electronic format, satisfactory to the Representatives, that will allow investors to store and have continuously ready access to the Time of Sale Information at any future time, without charge to investors (other than any fee charged for subscription to the Internet as a whole and for on-line time); and the Company hereby confirms that it has included or will include in the Prospectus filed pursuant to EDGAR or otherwise with the Commission and in the Registration Statement at the time it was declared effective an undertaking that, upon receipt of a request by an investor or his or her representative, the Company shall transmit or cause to be transmitted promptly, without charge, a paper copy of the Time of Sale Information.

5. Certain Agreements of the Underwriters. Each Underwriter represents and agrees, severally and not jointly, that it shall not take any action that would result in an Underwriter or the Company being required to file with the Commission pursuant to Rule 433(d) under the Act a free writing prospectus prepared by or on behalf of such Underwriter that such Underwriter otherwise would not have been required to file thereunder;

6. Reimbursement of the Underwriters' Expenses. If, after the execution and delivery of this Agreement, the Securities are not delivered for any reason other than the termination of this Agreement pursuant to the fifth paragraph of Section 11 hereof or the default by one or more of the Underwriters in its or their respective obligations hereunder, the Company shall, in addition to paying the amounts described in Section 4(j) hereof, reimburse the Underwriters for all of their out-of-pocket expenses, including the fees and disbursements of their counsel, reasonably incurred by the Underwriters in connection with the offering of the Securities and the other transaction contemplated thereby.

7. Conditions of the Underwriters' Obligations. The several obligations of the Underwriters hereunder are subject to the accuracy of the representations and warranties on the part of the on the date hereof, at the time of purchase and, if applicable, at the additional time of purchase, the performance by the Company of its obligations hereunder and to the following additional conditions precedent:

(a) The Company shall furnish to the Representatives at the time of purchase and, if applicable, at the additional time of purchase, an opinion of Goodwin Procter LLP, counsel for the Company, each addressed to the Underwriters, and dated the time of purchase or the additional time of purchase, as the case may be, with executed copies for each Underwriter, and in form and substance reasonably satisfactory to the Representatives.

(b) The Company shall furnish to the Representatives at the time of purchase and, if applicable, at the additional time of purchase, an opinion of Perkins Coie LLP, special counsel for the Company with respect to patents and proprietary rights, addressed to the Underwriters, and dated the time of purchase or the additional time of purchase, as the case may be, with executed copies for each Underwriter, and in form and substance reasonably satisfactory to the Representatives.

(c) The Company shall furnish to the Representatives at the time of purchase and, if applicable, at the additional time of purchase, an opinion of the Senior Vice President & General Counsel of the Company, each addressed to the Underwriters, and dated the time of purchase or the additional time of purchase, as the case may be, with executed copies for each Underwriter, and in form and substance reasonably satisfactory to the Representatives.

(d) The Representatives shall have received from Ernst & Young LLP letters dated, respectively, the date of this Agreement, the date of the Prospectus, the time of purchase and, if applicable, the additional time of purchase, and addressed to the Underwriters (with executed copies for each Underwriter) in the forms satisfactory to the Representatives, which letters shall cover, without limitation, the various financial disclosures contained or incorporated in the Registration Statement, the Time of Sale Information, the Prospectus, and each free writing prospectus, if any.

(e) The Representatives shall have received at the time of purchase and, if applicable, at the additional time of purchase, the favorable opinion of Ropes & Gray LLP, counsel for the Underwriters, dated the time of purchase or the additional time of purchase, as the case may be, in form and substance reasonably satisfactory to the Representatives.

(f) No Prospectus or amendment or supplement to the Registration Statement or the Prospectus shall have been filed to which the Representatives shall have objected as soon as reasonably practicable in writing.

(g) The Registration Statement and any registration statement required to be filed, prior to the sale of the Securities, under the Act pursuant to Rule 462(b) shall have been filed and shall have become effective under the Act. The Prospectus shall have been filed with the Commission pursuant to Rule 424(b) under the Act at or before 5:30 P.M., New York City time, on the second full business day after the date of this Agreement (or such earlier time as may be required under the Act).

(h) (i) Prior to and at the time of purchase, and, if applicable, the additional time of purchase, no stop order with respect to the effectiveness of the Registration Statement shall have been issued under the Act or proceedings initiated under Section 8(d) or 8(e) of the Act; (ii) the Registration Statement and all amendments thereto shall not, as of the Effective Time, 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; and (iii) the Prospectus, and no amendment or supplement thereto, shall include, as of its date, the date that it was filed with the Commission, the time of purchase, and, if applicable, the additional time of purchase, include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they are made, not misleading;

(i) The Company will, at the time of purchase and, if applicable, at the additional time of purchase, deliver to the Representatives a certificate of its Chief Executive Officer and its Chief Financial Officer, dated the time of purchase or the additional time of purchase, as the case may be, in the form attached as Exhibit B hereto.

(j) The Representatives shall have received each of the signed Lock-Up Agreements referred to in Section 3(bb) hereof, and each such Lock-Up Agreement shall be in full force and effect at the time of purchase and the additional time of purchase, as the case may be.

(k) The Company shall have furnished to the Representatives such other documents and certificates as to the accuracy and completeness of any statement in the Registration Statement, the Time of Sale Information, or the Prospectus as of the time of purchase and, if applicable, the additional time of purchase, as you may reasonably request.

(l) An application for the listing of the maximum number of Underlying Securities shall have been submitted to NASDAQ.

(m) On the Closing Date, the Underwriters shall have received from the Company and the Trustee a copy of the fully executed Indenture and copies of the fully executed Underwritten Securities, and on any Additional Closing Date the Underwriters shall have received from the Company and the Trustee copies of the fully executed Option Securities.

(n) Subsequent to the execution and delivery of this Agreement, and prior to the Closing Date or, in the case of the Option Securities, prior to the Additional Closing Date, there shall not have occurred any downgrading, nor shall any notice have been given of any intended or potential downgrading or of any review for a possible change that does not indicate the direction of the possible change, in the rating accorded any of the securities of the Company or any of its subsidiaries by any “nationally recognized statistical rating organization,” as such term is defined in Section 3(a)(62) of the Exchange Act.

8. Indemnification and Contribution.

(a) *Indemnification of the Underwriters.* The Company agrees to indemnify, defend and hold harmless each Underwriter, its partners, directors, officers and members, any person who controls any Underwriter within the meaning of Section 15 of the Act or Section 20 of the Exchange Act, and any “affiliate” (within the meaning of Rule 405 under the Act) of such Underwriter and the successors and assigns of all of the foregoing persons (the “Underwriter Indemnified Parties”), from and against any loss, damage, expense, liability or claim (including the reasonable cost of investigation) which, jointly or severally, any such Underwriter or any such person may incur under the Act, the Exchange Act, the common law or otherwise, insofar as such loss, damage, expense, liability or claim arises out of or is based upon (i) (A) any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement (or in the Registration Statement as amended by any post-effective amendment thereof by the Company) or (B) any omission or alleged omission to state a material fact required to be stated therein or necessary to make the statements therein not misleading, except insofar as any such loss, damage, expense, liability or claim arises out of or is based upon any untrue statement or alleged untrue statement of a material fact contained in, and in conformity with the Underwriter Information in, the Registration Statement or arises out of or is based upon any omission or alleged omission to state a material fact in the Registration Statement in connection with such information, which material fact was not contained in such information and which material fact was required to be stated in such Registration Statement or was necessary to make such information not misleading, (ii) (X) any untrue statement or alleged untrue statement of a material fact included in any Prospectus (the term Prospectus for the purpose of this Section 8 being deemed to include each preliminary prospectus, the Time of Sale Information, the Prospectus, any free writing prospectus that the Company has used, referred to or filed, or is required to file, pursuant to Rule 433 of the Act, any “road show” as defined in Rule 433(h) under the Securities Act (a “road show”), and any amendments or supplements to any of the foregoing) or (Y) any omission or alleged omission to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading, except, with respect to such Prospectus, insofar as any such loss, damage, expense, liability or claim arises out of or is based upon any untrue statement or alleged untrue statement

of a material fact contained in, and in conformity with, the Underwriter Information in such Prospectus or arises out of or is based upon any omission or alleged omission to state a material fact in such Prospectus in connection with such Underwriter Information, which material fact was not contained in such Underwriter Information and which material fact was necessary in order to make the statements in such Underwriter Information, in the light of the circumstances under which they were made, not misleading, or (iii) the violation of any laws or regulations of foreign jurisdictions where Securities have been offered or sold, and will reimburse each Indemnified Party (defined below) for any legal or other fees or expenses reasonably incurred by such Indemnified Party in connection with investigating or defending against any loss, damage, expense, liability, claim, action, litigation, investigation or proceeding whatsoever, whether threatened or commenced, and in connection with the enforcement of this provision with respect to the above as such fees and expenses are incurred. It is agreed and understood that “Underwriting Information” refers only to the following information included in the Prospectus and furnished by any Underwriter, on behalf of each Underwriter: the concession and reallowance figures appearing in the third paragraph under the caption “Underwriting”, the information contained in the ninth (the first two sentences of such paragraph only) and thirteenth (the first sentence of such paragraph only) paragraphs under the caption “Underwriting”.

(b) *Indemnification of the Company.* Each Underwriter severally agrees to indemnify, defend and hold harmless the Company, its directors and officers, and any person who controls the Company within the meaning of Section 15 of the Act or Section 20 of the Exchange Act, and the successors and assigns of all of the foregoing persons (the “Company Indemnified Parties” and, together with the “Underwriter Indemnified Parties”, the “Indemnified Parties”), from and against any loss, damage, expense, liability or claim (including the reasonable cost of investigation) which, jointly or severally, the Company or any such person may incur under the Act, the Exchange Act, the common law or otherwise, insofar as such loss, damage, expense, liability or claim arises out of or is based upon (i) any untrue statement or alleged untrue statement of a material fact contained in, and in conformity with, the Underwriter Information, or arises out of or is based upon any omission or alleged omission to state a material fact in such Registration Statement in connection with such Underwriter Information, which material fact was not contained in such Underwriter Information and which material fact was required to be stated in such Registration Statement or was necessary to make such Underwriter Information not misleading or (ii) any untrue statement or alleged untrue statement of a material fact contained in, and in conformity with, the Underwriter Information, or arises out of or is based upon any omission or alleged omission to state a material fact in such Prospectus in connection with such Underwriter Information, which material fact was not contained in such Underwriter Information and which material fact was necessary in order to make the statements in such Underwriter Information, in the light of the circumstances under which they were made, not misleading.

(c) *Notice and Procedures.* If any action, suit or proceeding (each, a “Proceeding”) is brought against an Indemnified Party in respect of which indemnity may be sought against the Company or an Underwriter (as applicable, the “indemnifying party”) pursuant to subsection (a) or (b), respectively, of this Section 8, such Indemnified Party shall promptly notify such indemnifying party in writing of the institution of such Proceeding and such indemnifying party shall assume the defense of such Proceeding, including the retention of counsel reasonably

satisfactory to such Indemnified Party, and pay all legal or other fees and expenses related to such Proceeding or incurred in connection with such Indemnified Party's enforcement of subsection (a) or (b) of this Section 8; provided, however, that the omission to so notify such indemnifying party shall not relieve such indemnifying party from any liability that such indemnifying party may have to any Indemnified Party pursuant to subsection (a) or (b), except to the extent that it has been materially prejudiced (through the forfeiture of substantive rights or defenses by such failure) or otherwise. The Indemnified Party or parties shall have the right to retain its or their own counsel in any such case, but the fees and expenses of such counsel shall be at the expense of such Indemnified Party or parties unless (i) the retention of such counsel shall have been authorized in writing by the indemnifying party in connection with the defense of such Proceeding, (ii) the indemnifying party shall not have, within a reasonable period of time in light of the circumstances, retained counsel to defend such Proceeding or (iii) such Indemnified Party or parties shall have reasonably concluded that there may be defenses available to it or them that are different from, additional to or in conflict with those available to such indemnifying party (in which case such indemnifying party shall have the right to participate at its cost in, but not have the right to direct, the defense of such Proceeding on behalf of the Indemnified Party or parties), in any of which events such fees and expenses shall be borne by such indemnifying party and paid as incurred (it being understood, however, that except as provided in Section 8(a), such indemnifying party shall not be liable for the fees or expenses of more than one separate counsel (in addition to any local counsel) in any one Proceeding or series of related Proceedings in the same jurisdiction representing the Indemnified Parties who are parties to such Proceeding). The indemnifying party shall not be liable for any settlement of any Proceeding effected without its written consent but, if settled with its written consent, such indemnifying party agrees to indemnify and hold harmless the Indemnified Party or parties from and against any loss or liability by reason of such settlement. Notwithstanding the foregoing sentence, if at any time an Indemnified Party shall have requested an indemnifying party to reimburse the Indemnified Party for fees and expenses of counsel as contemplated by the second sentence of this Section 8(c), then the indemnifying party agrees that it shall be liable for any settlement of any Proceeding effected without its written consent if (i) such settlement is entered into more than 60 business days after receipt by such indemnifying party of the aforesaid request, (ii) such indemnifying party shall not have fully reimbursed the Indemnified Party in accordance with such request prior to the date of such settlement and (iii) such Indemnified Party shall have given the indemnifying party at least 30 days' prior notice of its intention to settle. No indemnifying party shall, without the prior written consent of the Indemnified Party, effect any settlement of any pending or threatened Proceeding in respect of which any Indemnified Party is or could have been a party and indemnity could have been sought hereunder by such Indemnified Party, unless such settlement includes an unconditional release of such Indemnified Party from all liability on claims that are the subject matter of such Proceeding and does not include an admission of fault or culpability or a failure to act by or on behalf of such Indemnified Party.

(d) *Contribution.* If the indemnification provided for in this Section 8 is unavailable to an Indemnified Party under subsections (a) and (b) of this Section 8 or insufficient to hold an Indemnified Party harmless in respect of any losses, damages, expenses, liabilities or claims referred to therein, then each applicable indemnifying party shall contribute to the amount paid or payable by such Indemnified Party as a result of such losses, damages, expenses, liabilities or claims (i) in such proportion as is appropriate to reflect the relative benefits received by the

Company on the one hand and the Underwriters on the other hand from the offering of the Securities or (ii) if the allocation provided by clause (i) above is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) above but also the relative fault of the Company on the one hand and of the Underwriters on the other in connection with the statements or omissions which resulted in such losses, damages, expenses, liabilities or claims, as well as any other relevant equitable considerations. The relative benefits received by the Company on the one hand and the Underwriters on the other shall be deemed to be in the same respective proportions as the total proceeds from the offering (net of underwriting discounts and commissions but before deducting expenses) received by the Company, and the total underwriting discounts and commissions received by the Underwriters, bear to the aggregate offering price of the Securities. The relative fault of the Company on the one hand and of the Underwriters on the other shall be determined by reference to, among other things, whether the untrue statement or alleged untrue statement of a material fact or omission or alleged omission relates to information supplied by the Company or by the Underwriters and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission. The amount paid or payable by a party as a result of the losses, damages, expenses, liabilities and claims referred to in this subsection shall be deemed to include any legal or other fees or expenses reasonably incurred by such party in connection with investigating, preparing to defend or defending any Proceeding.

(e) *Limitation on Liability.* The Company and the Underwriters agree that it would not be just and equitable if contribution pursuant to this Section 8 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 that does not take account of the equitable considerations referred to in subsection (d) above. Notwithstanding the provisions of this Section 8, no Underwriter shall be required to contribute any amount in excess of the amount by which the total underwriting discounts and commissions received by such Underwriter with respect to the offering of the Securities exceeds the amount of any damage which such Underwriter has otherwise been required to pay by reason of such untrue statement 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 to contribute pursuant to this Section 7 are several in proportion to their respective underwriting commitments and not joint.

(f) *Non-Exclusive Remedies.* The indemnity and contribution agreements contained in this Section 8 and the covenants, warranties and representations of the Company contained in this Agreement shall remain in full force and effect regardless of any investigation made by or on behalf of any Underwriter, or any of their respective partners, directors, officers or members or any person (including each partner, officer, director or member of such person) who controls any Underwriter within the meaning of Section 15 of the Act or Section 20 of the Exchange Act, or by or on behalf of the Company, its directors or officers or any person who controls the Company within the meaning of Section 15 of the Act or Section 20 of the Exchange Act, and shall survive any termination of this Agreement or the issuance and delivery of the Securities. The Company and each Underwriter agree promptly to notify each other of the commencement of any Proceeding against it and, in the case of the Company, against any of the Company's officers or directors in connection with the issuance and sale of the Securities, or in connection with the Registration Statement or any Prospectus.

9. Effectiveness of Agreement. This Agreement shall become effective when the parties hereto have executed and delivered this Agreement.

10. Termination. This Agreement may be terminated in the absolute discretion of the Representatives, by notice to the Company, if after the execution and delivery of this Agreement and prior to the Closing Date or, in the case of the Option Securities, prior to the Additional Closing Date (i) since the time of execution of this Agreement or the earlier respective dates as of which information is given in the Registration Statement, the Time of Sale Information and the Prospectus there has been any change or any development involving a prospective change in the business, properties, management, financial condition or results of operations of the Company, the effect of which change or development is, in the sole 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 Securities on the terms and in the manner contemplated in the Registration Statement, the Time of Sale Information and the Prospectus or; (ii) since the time of execution of this Agreement, there shall have occurred: (A) a suspension or material limitation in trading in securities generally on the New York Stock Exchange or NASDAQ; (B) a suspension or material limitation in trading in the Company's securities on NASDAQ; (C) 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; (D) there shall have occurred an outbreak or escalation of hostilities or acts of terrorism involving the United States or a declaration by the United States of a national emergency or war; or (E) any other calamity or crisis or any change in financial, political or economic conditions in the United States or elsewhere, that, in the sole judgment of the Representatives, makes it impracticable or inadvisable to proceed with the offering or the delivery of the Securities on the terms and in the manner contemplated by this Agreement, the Time of Sale Information and the Prospectus.

If the Representatives elect to terminate this Agreement as provided in this Section 10, the Company and each other Underwriter shall be notified promptly in writing.

If the sale to the Underwriters of the Securities, as contemplated by this Agreement, is not carried out by the Underwriters for any reason permitted under this Agreement, or if such sale is not carried out because the Company shall be unable to comply with any of the terms of this Agreement, the Company shall not be under any obligation or liability under this Agreement (except to the extent provided in Sections 4(j), 6 and 8 hereof), and the Underwriters shall be under no obligation or liability to the Company under this Agreement (except to the extent provided in Section 7 hereof) or to one another hereunder.

11. Defaulting Underwriter. Subject to Sections 7 and 10 hereof, if any Underwriter shall default in its obligation to take up and pay for the Securities to be purchased by it hereunder (otherwise than for a failure of a condition set forth in Section 7 hereof or a reason sufficient to justify the termination of this Agreement under the provisions of Section 10 hereof) and if the aggregate principal amount of such Securities that all Underwriters so defaulting shall have

agreed but failed to take up and pay for does not exceed 10% of the total number of Securities, the non-defaulting Underwriters (including the Underwriters, if any, substituted in the manner set forth below) shall take up and pay for (in addition to the aggregate principal amount of such Securities they are obligated to purchase pursuant to Section 2 hereof) the aggregate principal amount of Securities agreed to be purchased by all such defaulting Underwriters, as hereinafter provided. Such principal amount of Securities shall be taken up and paid for by such non-defaulting Underwriters in such amount or amounts as you may designate with the consent of each Underwriter so designated or, in the event no such designation is made, such principal amount of Securities shall be taken up and paid for by all non-defaulting Underwriters pro rata in proportion to the aggregate principal amount of Securities set forth opposite the names of such non-defaulting Underwriters on Schedule A.

Without relieving any defaulting Underwriter from its obligations hereunder, the Company agrees with the non-defaulting Underwriters that it will not sell any Securities hereunder unless all of the Securities are purchased by the Underwriters (or by substituted Underwriters selected by you with the approval of the Company or selected by the Company with your approval).

If a new Underwriter or Underwriters are substituted by the Underwriters or by the Company for a defaulting Underwriter or Underwriters in accordance with the foregoing provision, the Company or the Representatives shall have the right to postpone the time of purchase for a period not exceeding five business days in order that any necessary changes in the Registration Statement and the Prospectus and other documents may be effected.

The term "Underwriter" as used in this Agreement shall refer to and include any Underwriter substituted under this Section 11 with like effect as if such substituted Underwriter had originally been named on Schedule A hereto.

If the aggregate principal amount of Securities which the defaulting Underwriter or Underwriters agreed to purchase exceeds 10% of the aggregate principal amount of Securities that all Underwriters agreed to purchase hereunder, and if neither the non-defaulting Underwriters nor the Company shall make arrangements within the five business day period stated above for the purchase of all the Securities which the defaulting Underwriter or Underwriters agreed to purchase hereunder, this Agreement shall terminate without further act or deed and without any liability on the part of the Company to any Underwriter and without any liability on the part of any non-defaulting Underwriter to the Company. Nothing in this paragraph, and no action taken hereunder, shall relieve any defaulting Underwriter from liability in respect of any default of such Underwriter under this Agreement.

12. Persons Entitled to Benefit of Agreement. This Agreement shall inure to the benefit of and be binding upon the parties hereto and their respective successors and the officers and directors and any controlling persons referred to herein, and the affiliates of each Underwriter referred to in Section 8 hereof. Nothing in this Agreement is intended or shall be construed to give any other person any legal or equitable right, remedy or claim under or in respect of this Agreement or any provision contained herein. No purchaser of Securities from any Underwriter shall be deemed to be a successor merely by reason of such purchase.

13. Survival. The respective indemnities, rights of contribution, representations, warranties and agreements of the Company and the Underwriters contained in this Agreement or made by or on behalf of the Company or the Underwriters pursuant to this Agreement or any certificate delivered pursuant hereto shall survive the delivery of and payment for the Securities and shall remain in full force and effect, regardless of any termination of this Agreement or any investigation made by or on behalf of the Company or the Underwriters.

14. Certain Defined Terms. For purposes of this Agreement, (a) except where otherwise expressly provided, the term “affiliate” has the meaning set forth in Rule 405 under the Securities Act; (b) the term “business day” means any day other than a day on which banks are permitted or required to be closed in New York City; and (c) the term “subsidiary” has the meaning set forth in Rule 405 under the Securities Act; and (d) the term “significant subsidiary” has the meaning set forth in Rule 1-02 of Regulation S-X under the Exchange Act.

15. Compliance with USA Patriot Act. 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, 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.

16. Miscellaneous.

(a) *Notices*. Except as otherwise herein provided, all statements, requests, notices and agreements shall be in writing or by telegram or facsimile and, if to the Underwriters, shall be sufficient in all respects if delivered or sent to c/o J.P. Morgan Securities LLC, 383 Madison Avenue, New York, New York 10179 (fax: (212) 622-8358); Attention: Equity Syndicate Desk and Morgan Stanley & Co. LLC, 1585 Broadway, New York, New York 10036; Attention: Equity Syndicate Desk, with a copy to the Legal Department.; and c/o with a copy to Ropes & Gray LLP, Prudential Tower, 800 Boylston Street, Boston, Massachusetts 02199, Attention: Patrick O’Brien, Esq.; and if to the Company, shall be sufficient in all respects if delivered or sent to Radius Health, Inc., 950 Winter Street, Waltham, MA 02451, Facsimile: 617-551-4701, Attention: Jesper Høiland, Chief Executive Officer; with a copy to Goodwin Procter LLP, 100 Northern Avenue, Boston, MA 02210, Facsimile: 617-801-8626, Attention: Arthur R. McGivern, Esq.

(b) *Governing Law*. This Agreement and any claim, controversy or dispute arising under or related to this Agreement shall be governed by and construed in accordance with the laws of the State of New York.

(c) *Submission to Jurisdiction*. The Company hereby submits to the exclusive jurisdiction of the U.S. federal and New York state courts in the Borough of Manhattan in The City of New York in any suit or proceeding arising out of or relating to this Agreement or the transactions contemplated hereby. The Company waives any objection which it may now or hereafter have to the laying of venue of any such suit or proceeding in such courts. The Company agrees that final judgment in any such suit, action or proceeding brought in such court shall be conclusive and binding upon the Company and may be enforced in any court to the jurisdiction of which Company is subject by a suit upon such judgment.

(d) *Waiver of Jury Trial*. Each of the parties hereto hereby waives any right to trial by jury in any suit or proceeding arising out of or relating to this Agreement.

(e) *No Fiduciary Relationship*. The Company hereby acknowledges that the Underwriters are acting solely as underwriters in connection with the purchase and sale of the Company's securities. The Company further acknowledges that the Underwriters are acting pursuant to a contractual relationship created solely by this Agreement entered into on an arm's length basis, and in no event do the parties intend that the Underwriters act or be responsible as a fiduciary to the Company, its management, stockholders or creditors or any other person in connection with any activity that the Underwriters may undertake or have undertaken in furtherance of the purchase and sale of the Company's securities, either before or after the date hereof. The Underwriters hereby expressly disclaim any fiduciary or similar obligations to the Company, either in connection with the transactions contemplated by this Agreement or any matters leading up to such transactions, and the Company hereby confirms its understanding and agreement to that effect. The Company and the Underwriters agree that they are each responsible for making their own independent judgments with respect to any such transactions and that any opinions or views expressed by the Underwriters to the Company regarding such transactions, including, but not limited to, any opinions or views with respect to the price or market for the Company's securities, do not constitute advice or recommendations to the Company. The Company and the Underwriters agree that the Underwriters are acting as principal and not the agent or fiduciary of the Company, and no Underwriter has assumed, and none of them will assume, any advisory responsibility in favor of the Company with respect to the transactions contemplated hereby or the process leading thereto (irrespective of whether any Underwriter has advised or is currently advising the Company on other matters). The Company hereby waives and releases, to the fullest extent permitted by law, any claims that the Company may have against the Underwriters with respect to any breach or alleged breach of any fiduciary, advisory or similar duty to the Company in connection with the transactions contemplated by this Agreement or any matters leading up to such transactions.

(f) *Counterparts*. This Agreement may be signed in counterparts (which may include counterparts delivered by any standard form of telecommunication), each of which shall be an original and all of which together shall constitute one and the same instrument.

(g) *Amendments or Waivers*. No amendment or waiver of any provision of this Agreement, nor any consent or approval to any departure therefrom, shall in any event be effective unless the same shall be in writing and signed by the parties hereto.

(h) *Headings*. The headings herein are included for convenience of reference only and are not intended to be part of, or to affect the meaning or interpretation of, this Agreement.

If the foregoing is in accordance with your understanding, please indicate your acceptance of this Agreement by signing in the space provided below.

Very truly yours,

RADIUS HEALTH, INC.

By /s/ Jose Carmona

Title: Chief Financial Officer

Accepted: As of the date first written above

J.P. MORGAN SECURITIES LLC

For itself and on behalf of the
several Underwriters listed
in Schedule 1 hereto.

By: /s/ Santosh Sreenivasan

Authorized Signatory

MORGAN STANLEY & CO. LLC

For itself and on behalf of the
several Underwriters listed
in Schedule 1 hereto.

By: /s/ Usman S. Khan

Name: Usman Khan

Title: Managing Director

<u>Underwriter</u>	<u>Principal Amount</u>
J.P. Morgan Securities LLC	\$ 107,474,000
Morgan Stanley & Co. LLC	\$ 93,298,000
Citigroup Global Markets Inc.	\$ 49,614,000
Leerink Partners LLC	\$ 49,614,000
Total	\$ 300,000,00

Significant Subsidiaries

Legal Name of Subsidiary

Radius Health Securities Corporation

Jurisdiction of Organization

Massachusetts

a. Time of Sale Information

Term sheet containing the terms of the Securities, substantially in the form of Annex B.

Radius Health, Inc.
Pricing Term Sheet
3.00% Convertible Senior Notes due 2024

The information in this pricing term sheet relates to Radius Health, Inc.'s offering (the "Offering") of its 3.00% Convertible Senior Notes due 2024 and should be read together with the preliminary prospectus supplement dated August 7, 2017 relating to the Offering (the "Preliminary Prospectus Supplement"), including the documents incorporated by reference therein, and the accompanying prospectus dated August 7, 2017, each filed pursuant to Rule 424(b) under the Securities Act of 1933, as amended.

Issuer:	Radius Health, Inc., a Delaware corporation.
Ticker / Exchange for Common Stock:	RDUS / The NASDAQ Global Market ("NASDAQ").
Securities Offered:	3.00% Convertible Senior Notes due 2024 (the "Notes").
Aggregate Principal Amount Offered:	\$300,000,000 aggregate principal amount of Notes (or \$345,000,000 aggregate principal amount if the underwriters' over-allotment option to purchase up to an additional \$45,000,000 principal amount of Notes is exercised in full).
Maturity Date:	September 1, 2024, unless earlier repurchased, redeemed or converted.
Interest Rate:	3.00% per annum, accruing from August 14, 2017.
Interest Payment Dates:	March 1 and September 1 of each year, beginning on March 1, 2018.
Public Offering Price:	100.00% of the principal amount of the Notes plus accrued interest, if any, from August 14, 2017.
NASDAQ Last Reported Sale Price on August 8, 2017:	\$36.835 per share of the Issuer's common stock.
Initial Conversion Price:	Approximately \$48.81 per share of the Issuer's common stock.
Initial Conversion Rate:	20.4891 shares of the Issuer's common stock per \$1,000 principal amount of Notes.
Optional Redemption:	On or after September 1, 2021, the Issuer may redeem for cash all or part of the Notes if the last reported sale price of its common stock equals or exceeds 130% of the conversion price then in effect for at least 20 trading days (whether or not consecutive) during any 30 consecutive trading day period ending within five trading days prior to the date on which the Issuer provides notice of the redemption. The redemption price will be the principal amount of the Notes to be redeemed, plus accrued and unpaid interest, if any,

to, but not including, the redemption date. In addition, calling any Note for redemption will constitute a make-whole fundamental change with respect to that Note, in which case the conversion rate applicable to the conversion of that Note, if it is converted in connection with the redemption, will be increased in certain circumstances.

Use of Proceeds:

The Issuer estimates that the net proceeds from the Offering will be approximately \$290.8 million (or approximately \$334.5 million if the underwriters exercise their over-allotment option in full), after deducting the underwriters' discount and estimated offering expenses payable by the Issuer.

The Issuer intends to use the net proceeds from the Offering to support the U.S. commercial launch of TYMLOS™ (abaloparatide) injection and the development of its life cycle management activities, such as the Issuer's investigational abaloparatide transdermal patch, and to advance the development of its pipeline of product candidates, including a Phase 2 clinical trial of elacestrant (RAD1901) in breast cancer and Phase 1 study of RAD140 in breast cancer, and for general corporate purposes.

See "Use of Proceeds" in the Preliminary Prospectus Supplement.

Trade Date:

August 9, 2017.

Settlement Date:

August 14, 2017.

CUSIP:

750469 AA6

ISIN:

US750469AA69

Joint Book-Running Managers:

J.P. Morgan Securities LLC

Morgan Stanley & Co. LLC

Book-Runner:

Citigroup Global Markets Inc.

Manager:

Leerink Partners LLC

Additional Amounts:

If the Issuer consolidates with or merges with or into, or sells, conveys, transfers or leases all or substantially all of its properties and assets to, another company and the resulting, surviving or transferee company is not organized and existing under the laws of the United States of America, any State thereof or the District of Columbia (such company or any successor thereto, the "surviving entity"), then all payments made by the surviving entity under or with respect to the Notes will be made without withholding or deduction for taxes unless the surviving entity is legally required to do so, in which case, subject to certain exceptions and limitations, the surviving entity will pay such additional amounts as may be necessary so that the net amount received by beneficial owners of the Notes after such withholding or deduction shall equal the amount that would have been received in the absence of such withholding or deduction.

Increase in Conversion Rate Upon Conversion Upon a Make-Whole Fundamental Change:

The following table sets forth the amount, if any, by which the conversion rate will be increased per \$1,000 principal amount of Notes for conversions in connection with a "make-whole fundamental change" (as defined in the Preliminary Prospectus Supplement) for each "stock price" (as defined in the Preliminary Prospectus Supplement) and "effective date" (as defined in the Preliminary Prospectus Supplement) set forth below:

Effective Date	Stock Price										
	\$36.835	\$42.00	\$48.81	\$60.00	\$70.00	\$80.00	\$90.00	\$100.00	\$110.00	\$120.00	\$140.00
August 14, 2017	6.6589	5.2242	3.7720	2.2865	1.4872	0.9677	0.6204	0.3848	0.2242	0.1162	0.0099
September 1, 2018	6.6589	5.1289	3.6610	2.1777	1.3918	0.8883	0.5568	0.3354	0.1872	0.0904	0.0018
September 1, 2019	6.6589	5.1598	3.6387	2.1227	1.3331	0.8351	0.5126	0.3005	0.1605	0.0721	0.0000
September 1, 2020	6.6589	5.1111	3.5382	2.0013	1.2215	0.7417	0.4387	0.2446	0.1196	0.0462	0.0000
September 1, 2021	6.6589	5.0083	3.3692	1.8145	1.0571	0.6092	0.3379	0.1714	0.0699	0.0172	0.0000
September 1, 2022	6.6589	4.7845	3.0601	1.5053	0.8021	0.4168	0.1999	0.0791	0.0203	0.0000	0.0000
September 1, 2023	6.6589	4.3080	2.4504	0.9590	0.4019	0.1508	0.0409	0.0018	0.0000	0.0000	0.0000
September 1, 2024	6.6589	3.2231	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

The exact stock price and effective date may not be set forth in the table above, in which case:

- If the stock price is between two stock prices in the table above or the effective date is between two effective dates in the table above, the amount by which the conversion rate will be increased will be determined by a straight-line interpolation between the amount of the conversion rate increase set forth for the higher and lower stock prices and the earlier and later effective dates, as applicable, based on a 365-day year.
- If the stock price is greater than \$140.00 per share (subject to adjustment in the same manner as the stock prices set forth in the column headings of the table above as described in the Preliminary Prospectus Supplement), the conversion rate will not be increased.
- If the stock price is less than \$36.835 per share (subject to adjustment in the same manner as the stock prices set forth in the column headings of the table above as described in the Preliminary Prospectus Supplement), the conversion rate will not be increased.

Notwithstanding the foregoing, in no event will the conversion rate per \$1,000 principal amount of Notes exceed 27.1480 shares of the Issuer's common stock, subject to adjustment in the same manner as the conversion rate as set forth under "Description of Notes—Conversion Rights—Conversion Rate Adjustments" in the Preliminary Prospectus Supplement.

The Issuer has filed a registration statement (including the Preliminary Prospectus Supplement, dated August 7, 2017, and an accompanying prospectus, dated August 7, 2017) with the Securities and Exchange Commission, or SEC, for the Offering to which this communication relates. Before you invest, you should read the Preliminary Prospectus Supplement and the accompanying prospectus in that registration statement and other documents the Issuer has filed with the SEC that is incorporated by reference in the Prospectus Supplement and the accompanying prospectus for more complete information about the Issuer and the Offering. You may get these documents for free by visiting EDGAR on the SEC website at www.sec.gov. Alternatively, copies may be obtained from J.P. Morgan Securities LLC, c/o Broadridge Financial Solutions, 1155 Long Island Avenue, Edgewood, New York 11717 or by calling 1-866-803-9204 or from Morgan Stanley & Co. LLC, Attention: Prospectus Department, 180 Varick Street, Second Floor, New York, New York 10014, by calling (866) 718-1649 or by emailing prospectus@morganstanley.com.

This communication should be read in conjunction with the Preliminary Prospectus Supplement, dated August 7, 2017, and the accompanying prospectus, dated August 7, 2017. The information in this communication supersedes the information in the Preliminary Prospectus Supplement and the accompanying prospectus to the extent inconsistent with the information in the Preliminary Prospectus Supplement and the accompanying prospectus. Terms used but not defined herein have the meanings given in the Preliminary Prospectus Supplement.

ANY DISCLAIMERS OR OTHER NOTICES THAT MAY APPEAR BELOW ARE NOT APPLICABLE TO THIS COMMUNICATION AND SHOULD BE DISREGARDED. SUCH DISCLAIMERS OR OTHER NOTICES WERE AUTOMATICALLY GENERATED AS A RESULT OF THIS COMMUNICATION BEING SENT VIA BLOOMBERG OR ANOTHER EMAIL SYSTEM.

Form of Lock-Up Agreement

August , 2017

J.P. Morgan Securities LLC
Morgan Stanley & Co. LLC

c/o J.P. Morgan Securities LLC
383 Madison Avenue
New York, New York 10017

Morgan Stanley & Co. LLC
1585 Broadway
New York, NY 10036

Ladies and Gentlemen:

This Lock-Up Agreement (the “Lock-Up Agreement”) is being delivered to you in connection with the proposed Underwriting Agreement (the “Underwriting Agreement”) to be entered into by Radius Health, Inc., a Delaware corporation (the “Company”), and you and the other underwriters named in Schedule A to the Underwriting Agreement (collectively, the “Underwriters”), with respect to the offering (the “Offering”) of convertible notes of the Company (the “Securities”), which will be convertible into common stock, par value \$0.0001 per share (the “Common Stock”), of the Company.

In order to induce you to enter into the Underwriting Agreement, the undersigned agrees that, for a period (the “Lock-Up Period”) beginning on the date hereof and ending on, and including, the date that is [90]/[60]¹ days after the date of the final prospectus supplement (the “Prospectus”) relating to the Offering, the undersigned will not, without the prior written consent of J.P. Morgan Securities LLC and Morgan Stanley & Co. LLC (the “Representatives”), (i) sell, offer, contract or agree to sell, hypothecate, pledge, grant any option or right to purchase, or warrant for the sale of, or otherwise dispose of or agree to dispose of, any option or contract to purchase, purchase any option or contract to sell, right or warrant for the sale of, or otherwise dispose of or transfer directly or indirectly, or exercise any right with respect to the registration of or file (or participate in the filing of) a registration statement with the Securities and Exchange Commission (the “Commission”) in respect of, or establish or increase a put equivalent position or liquidate or decrease a call equivalent position within the meaning of Section 16 of the Securities Exchange Act of 1934, as amended, and the rules and regulations of the Commission promulgated thereunder (the “Exchange Act”) with respect to, any Common Stock, or any securities convertible into or exchangeable or exercisable for, or any warrants or other rights to

¹ Note to Draft: 90 days for officers/60 days for directors.

purchase, Common Stock, whether now owned or hereafter acquired by the undersigned or with respect to which the undersigned has or hereafter acquires the power of disposition (the “Lock-Up Securities”), (ii) enter into any swap or other arrangement that transfers to another, in whole or in part, directly or indirectly, any of the economic consequences of ownership of Lock-Up Securities, whether any such transaction is to be settled by delivery of Common Stock or such other securities, in cash or otherwise or (iii) publicly announce an intention to effect any transaction specified in clause (i) or (ii).

The foregoing paragraph shall not apply to (a) the offer and sale of the Securities as contemplated by the Underwriting Agreement and the sale of the Securities to the Underwriters (as defined in the Underwriting Agreement) in the Offering, (b) bona fide gifts, provided that the recipient thereof agrees in writing with the Underwriters to be bound by the terms of this Lock-Up Agreement and no filing under Section 16(a) of the Exchange Act shall be required or shall be voluntarily made during the Lock-Up Period, (c) the acquisition of shares of Common Stock upon the exercise of any option for cash, warrant or other right to acquire shares of Common Stock, the settlement of any stock-settled stock appreciation rights, restricted stock or restricted stock units, or the conversion of any convertible security into securities of the Company, provided that any securities received as a result thereof by the undersigned will also be subject to the restrictions in this Lock-up Agreement and no filing under Section 16(a) of the Exchange Act shall be required or shall be voluntarily made during the Lock-up Period, (d) dispositions to immediate family members or to any trust for the direct or indirect benefit of the undersigned and/or the immediate family of the undersigned, and dispositions by will, other testamentary document or intestate succession to the legal representative, heir, beneficiary or a member of the immediate family of the undersigned, provided that, in each case, as a condition precedent to any such transfer, such immediate family member and trust agrees in writing with the Underwriters to be bound by the terms of this Lock-Up Agreement and no filing under Section 16(a) of the Exchange Act shall be required or shall be voluntarily made during the Lock-up Period, (e) securities transferred to one or more affiliates of the undersigned and distributions of securities to limited partners, members or stockholders of the undersigned, provided that, as a condition precedent to any such transfer, such proposed transferee agrees in writing with the Underwriters to be bound by the terms of this Lock-Up Agreement and no filing under Section 16(a) of the Exchange Act shall be required or shall be voluntarily made during the Lock-up Period, (f) transactions relating to securities acquired in open market transactions after the completion of the Offering, provided that no filing under Section 16(a) of the Exchange Act reporting a reduction in beneficial ownership of Common Stock shall be required or shall be voluntarily made during the Lock-Up Period in connection with subsequent sales of Common Stock or other securities acquired in such open market transactions, (g) the entry into any trading plan established pursuant to Rule 10b5-1 under the Exchange Act, provided that such plan does not provide for any sales or other dispositions of Common Stock during the Lock-Up Period and no public announcement or public disclosure of entry into such plan is made or required to be made, (h) transfers to the Company to satisfy tax withholding obligations pursuant to the Company’s equity incentive plans or arrangements or to pay the exercise price of any options issued under any such plan or arrangement, provided that no filing under Section 16(a) of the Exchange Act shall be required or shall be voluntarily made during the Lock-Up Period, (i) pursuant to any contractual arrangement described in the Prospectus in effect on the date of this Lock-Up Agreement that provides for the repurchase of the undersigned’s Lock-Up Securities by the Company in connection with the termination of the undersigned’s employment or other service

relationship with the Company or the undersigned's failure to meet certain conditions set out upon receipt of such Lock-Up Securities, and (j) transfers in connection with a bona fide third party tender offer, merger, consolidation or other similar transaction made to all holders of Common Stock involving a change of control of the Company (for purposes hereof, "change of control" shall mean the transfer (whether by tender offer, merger, consolidation or other similar transaction), in one transaction or a series of related transactions, to a person or group of affiliated persons (other than an Underwriter pursuant to the Public Offering), of shares of Common Stock if, after such transfer, such person or group of affiliated persons would hold all of the outstanding voting securities of the Company (or the surviving entity)), provided that in the event that the tender offer, merger, consolidation or other such transaction is not completed, the undersigned's Common Stock shall remain subject to the restrictions contained herein. For purposes of this paragraph, "immediate family" shall mean the undersigned and the spouse, any lineal descendent, father, mother, brother or sister of the undersigned.

The undersigned agrees that, during the Lock-Up Period, the undersigned will not, without the prior written consent of the Representatives, make any demand for, or exercise any right with respect to, the registration of Common Stock or any securities convertible into or exercisable or exchangeable for Common Stock, or warrants or other rights to purchase Common Stock or any such securities.

In addition, the undersigned hereby waives any and all preemptive rights, participation rights, resale rights, rights of first refusal and similar rights that the undersigned may have in connection with the Offering or with any issuance or sale by the Company of any equity or other securities before the Offering, except for any such rights as have been heretofore duly exercised.

The undersigned hereby confirms that the undersigned has not, directly or indirectly, taken, and hereby covenants that the undersigned will not, directly or indirectly, take, any action designed, or which has constituted or will constitute or might reasonably be expected to cause or result in the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of shares of Common Stock.

The undersigned hereby authorizes the Company and its transfer agent, during the Lock-Up Period, to decline the transfer of or to note stop transfer restrictions on the stock register and other records relating to Lock-Up Securities of which the undersigned is the record holder, and, with respect to Lock-Up Securities of which the undersigned is the beneficial owner but not the record holder, the undersigned hereby agrees to cause such record holder to authorize the Company and its transfer agent, during the Lock-Up Period, to decline the transfer of or to note stop transfer restrictions on the stock register and other records relating to such Lock-Up Securities.

Whether or not the Offering occurs as currently contemplated or at all depends on market conditions and other factors. The Offering will only be made pursuant to the Underwriting Agreement, the terms of which are subject to negotiation between the Company and the underwriters.

The undersigned hereby represents and warrants that the undersigned has full power, capacity and authority to enter into this Lock-Up Agreement. This Lock-Up Agreement is irrevocable and will be binding on the undersigned and the successors, heirs, personal representatives and assigns of the undersigned. The undersigned understands that the Company and the Underwriters are relying upon this Lock-Up Agreement in proceeding toward consummation of the Offering.

The undersigned shall be released from all obligations under this Lock-Up Agreement (i) if the Underwriting Agreement does not become effective on or before September 30, 2017, (ii) if the Underwriting Agreement (other than the provisions thereof which survive termination) shall terminate or be terminated prior to payment for and delivery of the securities to be sold thereunder, or (iii) if the Representatives, on behalf of the Underwriters, on the one hand, or the Company, on the other hand, inform the other in writing, prior to the execution of the Underwriting Agreement, that they have or it has determined not to proceed with the Offering.

This Lock-Up Agreement and any claim, controversy or dispute arising under or related to this Lock-Up Agreement shall be governed by, and construed in accordance with, the laws of the State of New York, without regard to the conflict of laws principles thereof.

Yours very truly,

Print Name of Stockholder

By: _____

Name: _____

Title: _____

Address: _____

Tel: _____

Fax: _____

E-mail: _____

OFFICERS' CERTIFICATE

Each of the undersigned, Jesper Høiland, President and Chief Executive Officer of Radius Health, Inc., a Delaware corporation (the "Company"), and Jose Carmona, Chief Financial Officer of the Company, on behalf of the Company, does hereby certify pursuant to Section 1(i) of that certain Underwriting Agreement, dated August [], 2017 (the "Underwriting Agreement"), among the Company, and, on behalf of the several Underwriters named therein and J.P. Morgan Securities LLC, that as of August [], 2017:

1. He has reviewed the Registration Statement and the Prospectus.
2. The representations and warranties of the Company as set forth in the Underwriting Agreement are true and correct as of the date hereof and as if made on the date hereof.
3. The Company has performed all of its obligations under the Underwriting Agreement as are to be performed at or before the date hereof.
4. The conditions set forth in Section 7(g) of the Underwriting Agreement have been met.

Capitalized terms used herein without definition shall have the respective meanings ascribed to them in the Underwriting Agreement.

I N W ITNESS W HEREOF , the undersigned have hereunto set their hands on August [], 2017.

Name: Jesper Høiland
Title: President and Chief Executive Officer

Name: Jose Carmona
Title: Chief Financial Officer



Goodwin Procter LLP
100 Northern Avenue
Boston, MA 02210

goodwinlaw.com
+1 617 570 1000

August 8, 2017

Radius Health, Inc.
950 Winter Street
Waltham, Massachusetts 02451

Re: Securities Registered under Registration Statement on Form S-3

Ladies and Gentlemen:

Reference is made to our opinion letter dated August 7, 2017 and included as Exhibit 5.1 to the Post-Effective Amendment No. 1 to Form S-3ASR (File No. 333-201610) (the "Registration Statement") filed on August 7, 2017 by Radius Health, Inc., a Delaware corporation (the "Company"), with the Securities and Exchange Commission (the "Commission") pursuant to the Securities Act of 1933, as amended (the "Securities Act"). The Registration Statement became effective under the Securities Act upon filing on August 7, 2017. We are delivering this supplemental opinion letter in connection with the prospectus supplement (the "Prospectus Supplement") to be filed on or about August 9, 2017 by the Company with the Commission pursuant to Rule 424 under the Securities Act. The Prospectus Supplement relates to the offering by the Company of (i) of up to \$345,000,000 aggregate principal amount of its 3.00% Convertible Senior Notes due 2024 (the "Notes") and (ii) the shares of the Company's common stock, par value \$0.0001 per share (the "Common Stock") that may be issued upon conversion of the Notes (the "Conversion Shares" and, collectively with the Notes, the "Securities") covered by the Registration Statement.

We have reviewed such documents and made such examination of law as we have deemed appropriate to give the opinions set forth below. We have relied, without independent verification, on certificates of public officials and, as to matters of fact material to the opinions set forth below, on certificates of officers of the Company.

The Notes are to be issued and sold by the Company pursuant to (i) the Underwriting Agreement, dated as of August 8, 2017 (the "Underwriting Agreement"), between the Company and J.P. Morgan Securities LLC and Morgan Stanley & Co. LLC, on their own behalf and as representatives of the several underwriters named in Schedule 1 thereto and (ii) an indenture, to be dated on or about August 14, 2017, by and between the Company and Wilmington Trust, National Association, as trustee (the "Trustee"), as supplemented by the Supplemental Indenture No. 1, to be dated on or about August 14, 2017, by and between the Company and the Trustee, establishing the terms of the Notes, in a form consistent with that authorized by the Company (as supplemented, the "Indenture").

The opinion set forth below is limited to the Delaware General Corporation Law and the law of New York.

Based on the foregoing and subject to the additional qualifications set forth below, we are of the opinion that:

1. The Notes have been duly authorized and, upon the due execution and delivery of the Indenture by each of the Company and the Trustee and the execution, authentication and issuance of the Notes (in the form examined by us) against payment therefor in accordance with the terms of the Underwriting Agreement and otherwise in accordance with the Indenture, the Notes will be valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.
2. The issuance of the Conversion Shares has been duly authorized and, assuming a sufficient number of authorized but unissued shares of Common Stock are available for issuance when the Notes are converted, the Conversion Shares, when issued and delivered upon conversion of the Notes in accordance with the Indenture, will be validly issued, fully paid and nonassessable.

The opinion expressed in numbered opinion paragraph 1 above is subject to and limited by the effect of any applicable bankruptcy, insolvency, fraudulent transfer, reorganization, moratorium and other similar laws of general application affecting the rights and remedies of creditors and to general principles of equity (including, without limitation, concepts of materiality, reasonableness, good faith, fair dealing and unconscionability), regardless of whether considered in a proceeding in equity or law.

We hereby consent to the inclusion of this opinion as Exhibit 5.1 to the Registration Statement and to the references to our firm under the caption "Legal Matters" in the Registration Statement. In giving our consent, we do not admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations thereunder.

Very truly yours,

/s/ Goodwin Procter LLP

GOODWIN PROCTER LLP