
**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): **September 16, 2020**

STRONGBRIDGE BIOPHARMA plc

(Exact name of registrant as specified in its charter)

Ireland (State or other jurisdiction of incorporation)	001-37569 (Commission File Number)	98-1275166 (I.R.S. Employer Identification No.)
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900 Northbrook Drive, Suite 200 Trevose, PA (Address of principal executive offices)	19053 (Zip Code)
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Registrant's telephone number, including area code: **(610) 254-9200**

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

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

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Ordinary shares, par value \$0.01 per share	SBBP	The Nasdaq Global Select Market

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

Emerging growth company

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

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

On September 16, 2020, Strongbridge Biopharma plc (the “Company”) entered into an underwriting agreement (the “Underwriting Agreement”) with Jefferies LLC and Stifel, Nicolaus & Company, Incorporated, as representatives of the several underwriters named in Schedule A thereto (the “Underwriters”), relating to the public offering (the “Offering”) of 11,111,111 ordinary shares of the Company, \$0.01 par value per share, at a price to the public of \$2.25 per share. The net proceeds to the Company from the Offering, after deducting the underwriting discounts and commissions and estimated offering expenses payable by the Company, are expected to be approximately \$23.1 million. The Offering is expected to close on or about September 21, 2020, subject to customary closing conditions. Under the terms of the Underwriting Agreement, the Company has also granted the Underwriters a 30-day option to purchase up to an additional 1,666,666 ordinary shares at the public offering price, less the underwriting discounts and commissions.

The Company intends to use the net proceeds from the offering to (i) continue development and regulatory activities, to facilitate commercial readiness, and to commercially launch Recorlev primarily in the United States, (ii) support the life cycle management activities of Keveyis, and (iii) support other general corporate purposes, which may include working capital, capital expenditures, acquisition of additional technologies or other forms of intellectual property, acquisition of assets or businesses that are complementary to our existing business, and general and administrative expenses.

The ordinary shares are being offered and sold pursuant to the Company’s shelf registration statement on Form S-3 (File No. 333-223575) (the “Registration Statement”), which was declared effective by the Securities and Exchange Commission (the “Commission”) on March 27, 2018, including the prospectus contained therein, as supplemented by a preliminary prospectus supplement, dated September 16, 2020, and a final prospectus supplement, dated September 16, 2020, each filed with the Commission pursuant to Rule 424(b) under the Securities Act of 1933, as amended.

The Underwriting Agreement contains customary representations, warranties and agreements by the Company. Under the terms of the Underwriting Agreement, the Company has agreed to indemnify the Underwriters against certain liabilities. The Company and all of the Company’s directors and executive officers have also agreed not to sell or transfer any ordinary shares held by them for a period of 90 days from September 16, 2020 without first obtaining the written consent of the Underwriters, subject to certain exceptions.

The foregoing summary of the Underwriting Agreement does not purport to be complete and is qualified in its entirety by reference to the full text of the Underwriting Agreement, a copy of which is attached as Exhibit 1.1 hereto and incorporated herein by reference. The Underwriting Agreement contains representations and warranties that the parties made to, and solely for the benefit of, the other in the context of all of the terms and conditions of the Underwriting Agreement and in the context of the specific relationship between the parties. The provisions of the Underwriting Agreement, including the representations and warranties contained therein, are not for the benefit of any party other than the parties to the Underwriting Agreement and are not intended as a document for investors and the public to obtain factual information about the current state of affairs of the parties to those documents and agreements. Rather, investors and the public should look to other disclosures contained in the Company’s filings with the Commission.

Item 8.01**Other Events.**

On September 16, 2020, the Company issued a press release announcing the offering and a second press release announcing the pricing of the Offering. Copies of these press releases are filed as Exhibits 99.1 and 99.2, respectively, to this Current Report on Form 8-K and incorporated herein by reference.

In connection with the Offering, the legal opinion as to the legality of the ordinary shares sold is being filed as Exhibit 5.1 to this Current Report on Form 8-K and is incorporated herein and into the Registration Statement by reference.

(d) Exhibits

Exhibit Number	Exhibit Table
1.1	<u>Underwriting Agreement, dated as of September 16, 2020, by and between Strongbridge Biopharma plc and Jefferies LLC and Stifel, Nicolaus and Company, Incorporated, as representatives of the several underwriters named therein</u>
5.1	<u>Opinion of Arthur Cox</u>
23.1	<u>Consent of Arthur Cox (included in Exhibit 5.1)</u>
99.1	<u>Press Release issued by Strongbridge Biopharma plc, dated September 16, 2020.</u>
99.2	<u>Press Release issued by Strongbridge Biopharma plc, dated September 16, 2020.</u>
104	Cover Page Interactive Data File (formatted as inline XBRL).

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.

STRONGBRIDGE BIOPHARMA PLC

By: /s/ Robert Lutz
Name: Robert Lutz
Title: Chief Financial Officer

Date: September 18, 2020

11,111,111 Ordinary Shares
Strongbridge Biopharma plc
UNDERWRITING AGREEMENT

September 16, 2020

JEFFERIES LLC
STIFEL, NICOLAUS & COMPANY, INCORPORATED
As Representatives of the several Underwriters

c/o JEFFERIES LLC
520 Madison Avenue
New York, New York 10022

c/o STIFEL, NICOLAUS & COMPANY, INCORPORATED
787 7th Avenue, 11th Floor
New York, New York 10019

Ladies and Gentlemen:

Introductory. Strongbridge Biopharma plc, an Irish public limited company (registered no. 562659) (the “**Company**”), proposes to issue and sell to the several underwriters named in Schedule A (the “**Underwriters**”) an aggregate of 11,111,111 ordinary shares of the Company, par value \$0.01 per share (the “**Shares**”). The 11,111,111 Shares to be sold by the Company are called the “**Firm Shares**.” In addition, the Company has granted to the Underwriters an option to purchase up to an additional 1,666,666 Shares as provided in Section 2. The additional 1,666,666 Shares to be sold by the Company pursuant to such option are collectively called the “**Optional Shares**.” The Firm Shares and, if and to the extent such option is exercised, the Optional Shares are collectively called the “**Offered Shares**.” Jefferies LLC (“**Jefferies**”) and Stifel, Nicolaus & Company, Incorporated (“**Stifel**”) have agreed to act as representatives of the several Underwriters (in such capacity, the “**Representatives**”) in connection with the offering and sale of the Offered Shares. To the extent there are no additional underwriters listed on Schedule A, the term “**Representatives**” as used herein shall mean you, as Underwriters, and the term “**Underwriters**” shall mean either the singular or the plural, as the context requires.

The Company has prepared and filed with the Securities and Exchange Commission (the “**Commission**”) a shelf registration statement on Form S-3, File No. 333-223575, including a base prospectus (the “**Base Prospectus**”) to be used in connection with the public offering and sale of the Offered Shares. Such registration statement, as amended, including the financial statements, exhibits and schedules thereto, in the form in which it became effective under the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder (collectively, the “**Securities Act**”), including all documents incorporated or deemed to be incorporated by reference therein and any information deemed to be a part thereof at the time of effectiveness pursuant to Rule 430A or 430B under the Securities Act, is called the “**Registration Statement**.” Any registration statement filed by the Company pursuant to Rule 462(b) under the Securities Act in connection with the offer and sale of the Offered Shares is called the “**Rule 462(b) Registration Statement**,” and from and after the date and time of filing of any such Rule 462(b) Registration Statement the term “**Registration Statement**” shall include the Rule 462(b) Registration Statement. The preliminary prospectus supplement dated September 16, 2020 describing the Offered Shares and the offering thereof, together with the Base Prospectus, is called the “**Preliminary**

Prospectus,” and the Preliminary Prospectus and any other prospectus supplement to the Base Prospectus in preliminary form that describes the Offered Shares and the offering thereof and is used prior to the filing of the Prospectus (as defined below), together with the Base Prospectus, is called a “**preliminary prospectus**.” As used herein, the term “**Prospectus**” shall mean the final prospectus supplement to the Base Prospectus that describes the Offered Shares and the offering thereof, together with the Base Prospectus, in the form first used by the Underwriters to confirm sales of the Offered Shares or in the form first made available to the Underwriters by the Company to meet requests of purchasers pursuant to Rule 173 under the Securities Act. References herein to the Preliminary Prospectus, any preliminary prospectus and the Prospectus shall refer to both the prospectus supplement and the Base Prospectus components of such prospectus. As used herein, the “**Applicable Time**” is 8:00 p.m. (New York City time) on September 16, 2020. As used herein, “**free writing prospectus**” has the meaning set forth in Rule 405 under the Securities Act, and “**Time of Sale Prospectus**” means the Preliminary Prospectus, as amended or supplemented immediately prior to the Applicable Time, together with the free writing prospectuses, if any, identified in Schedule B hereto and the pricing information set forth on Schedule B hereto. As used herein, “**Road Show**” means a “road show” (as defined in Rule 433 under the Securities Act) relating to the offering of the Offered Shares contemplated hereby that is a “written communication” (as defined in Rule 405 under the Securities Act). As used herein, “**Section 5(d) Written Communication**” means each written communication (within the meaning of Rule 405 under the Securities Act) that is made in reliance on Section 5(d) of the Securities Act by the Company or any person authorized to act on behalf of the Company to one or more potential investors that are qualified institutional buyers (“**QIBs**”) and/or institutions that are accredited investors (“**IAIs**”), as such terms are respectively defined in Rule 144A and Rule 501(a) under the Securities Act, to determine whether such investors might have an interest in the offering of the Offered Shares; “**Section 5(d) Oral Communication**” means each oral communication, if any, made in reliance on Section 5(d) of the Securities Act by the Company or any person authorized to act on behalf of the Company made to one or more QIBs and/or one or more IAIs to determine whether such investors might have an interest in the offering of the Offered Shares; “**Marketing Materials**” means any materials or information provided to investors by, or with the approval of, the Company in connection with the marketing of the offering of the Offered Shares, including any roadshow or investor presentations made to investors by the Company (whether in person or electronically); and “**Permitted Section 5(d) Communication**” means the Section 5(d) Written Communication(s) and Marketing Materials listed on Schedule C attached hereto.

All references in this Agreement to the Registration Statement, the Preliminary Prospectus, any preliminary prospectus, the Base Prospectus and the Prospectus shall include the documents incorporated or deemed to be incorporated by reference therein. All references in this Agreement to financial statements and schedules and other information which are “contained,” “included” or “stated” in, or “part of” the Registration Statement, the Rule 462(b) Registration Statement, the Preliminary Prospectus, any preliminary prospectus, the Base Prospectus, the Time of Sale Prospectus or the Prospectus, and all other references of like import, shall be deemed to mean and include all such financial statements and schedules and other information which is or is deemed to be incorporated by reference in the Registration Statement, the Rule 462(b) Registration Statement, the Preliminary Prospectus, any preliminary prospectus, the Base Prospectus, the Time of Sale Prospectus or the Prospectus, as the case may be. All references in this Agreement to amendments or supplements to the Registration Statement, the Preliminary Prospectus, any preliminary prospectus, the Base Prospectus, the Time of Sale Prospectus or the Prospectus shall be deemed to mean and include the filing of any document under the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder (collectively, the “**Exchange Act**”) that is or is deemed to be incorporated by reference in the Registration Statement, the Preliminary Prospectus, any preliminary prospectus, the Base Prospectus, or the Prospectus, as the case may be. All references in this Agreement to (i) the Registration Statement, the Preliminary Prospectus, any preliminary prospectus, the Base Prospectus or the Prospectus, any amendments or supplements to any of the foregoing, or any free writing prospectus, shall include any copy thereof filed with the Commission pursuant to its Electronic

Data Gathering, Analysis and Retrieval System (“EDGAR”) and (ii) the Prospectus shall be deemed to include any “electronic Prospectus” provided for use in connection with the offering of the Offered Shares as contemplated by Section 3(n) of this Agreement.

The Company hereby confirms its agreements with the Underwriters as follows:

Section 1. Representations and Warranties.

The Company hereby represents, warrants and covenants to each Underwriter, as of the date of this Agreement, as of the First Closing Date (as hereinafter defined) and as of each Option Closing Date (as hereinafter defined), if any, as follows:

(a) **Compliance with Registration Requirements.** The Registration Statement has become effective under the Securities Act. The Company has complied, to the Commission’s satisfaction, with all requests of the Commission for additional or supplemental information, if any. No stop order suspending the effectiveness of the Registration Statement is in effect and no proceedings for such purpose have been instituted or are pending or, to the best knowledge of the Company, are contemplated or threatened by the Commission. At the time the Company’s Annual Report on Form 10-K for the year ended December 31, 2019 (the “**Annual Report**”) was filed with the Commission, or, if later, at the time the Registration Statement was originally filed with the Commission and as of the date hereof, the Company met or meets the then-applicable requirements for use of Form S-3 under the Securities Act. The Company meets the requirements for use of Form S-3 under the Securities Act specified in FINRA Conduct Rule 5110(B)(7)(C) (i). The documents incorporated or deemed to be incorporated by reference in the Registration Statement, the Time of Sale Prospectus and the Prospectus, at the time they were or hereafter are filed with the Commission, or became effective under the Exchange Act, as the case may be, complied and will comply in all material respects with the requirements of the Exchange Act.

(b) **Disclosure.** Each preliminary prospectus and the Prospectus when filed complied in all material respects with the Securities Act and, if filed by electronic transmission pursuant to EDGAR, was identical (except as may be permitted by Regulation S-T under the Securities Act) to the copy thereof delivered to the Underwriters for use in connection with the offer and sale of the Offered Shares. Each of the Registration Statement and any post-effective amendment thereto, at the time it became or becomes effective and at all subsequent times, complied and will comply in all material respects with the Securities 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 to make the statements therein not misleading. As of the Applicable Time, the Time of Sale Prospectus did not, and at the time of each sale of the Offered Shares and at the First Closing Date (as defined in Section 2(b)), the Time of Sale Prospectus, as then amended or supplemented by the Company, if applicable, 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. The Prospectus as of its date and (as then amended or supplemented) at all subsequent times, did 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. The representations and warranties set forth in the three immediately preceding sentences do not apply to statements in or omissions from the Registration Statement or any post-effective amendment thereto, or the Prospectus or the Time of Sale Prospectus, or any amendments or supplements thereto, made in reliance upon and in conformity with written information relating to any Underwriter furnished to the Company in writing by the Representatives expressly for use therein, it being understood and agreed that the only such information consists of the information described in Section 9(b) below. There are no contracts or other documents required to be described in the Time of Sale Prospectus or the Prospectus or to be filed as an exhibit to the Registration Statement which have not been described or filed as required.

(c) **Free Writing Prospectuses; Road Show.** As of the determination date referenced in Rule 164(h) under the Securities Act, the Company was not, is not or will not be (as applicable) an “ineligible issuer” in connection with the offering of the Offered Shares pursuant to Rules 164, 405 and 433 under the Securities Act. Each free writing prospectus that the Company is required to file pursuant to Rule 433(d) under the Securities Act has been, or will be, filed with the Commission in accordance with the requirements of the Securities Act. Each free writing prospectus that the Company has filed, or is required to file, pursuant to Rule 433(d) under the Securities Act or that was prepared by or on behalf of or used or referred to by the Company complies or will comply in all material respects with the requirements of Rule 433 under the Securities Act, including timely filing with the Commission or retention where required and legending, and each such free writing prospectus, as of its issue date and at all subsequent times through the completion of the public offer and sale of the Offered Shares did not, does not and will not include any information that conflicted, conflicts or will conflict with the information contained in the Registration Statement, the Prospectus or any preliminary prospectus and not superseded or modified. Except for the free writing prospectuses, if any, identified on Schedule B hereto, and electronic road shows, if any, furnished to you before first use, the Company has not prepared, used or referred to, and will not, without your prior written consent, prepare, use or refer to, any free writing prospectus. Each Road Show, when considered together with the Time of Sale Prospectus, does 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.

(d) **Emerging Growth Company and Testing-the-Waters.** From the time of the Company’s initial public offering of its Shares through the date hereof, the Company has been and is an “emerging growth company,” as defined in Section 2(a) of the Securities Act (an “Emerging Growth Company”). The Company (i) has not alone engaged in communications with potential investors in reliance on Section 5(d) of the Securities Act other than Permitted Section 5(d) Communications with the consent of the Representatives with entities that are QIBs or IAIs and (ii) has not authorized anyone other than the Representatives to engage in such communications; the Company reconfirms that the Representatives have been authorized to act on its behalf in undertaking Marketing Materials, Section 5(d) Oral Communications and Section 5(d) Written Communications; as of the Applicable Time, each Permitted Section 5(d) Communication, when considered together with the Time of Sale Prospectus, did not, as of the Applicable Time, 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; and each Permitted Section 5(d) Communication, if any, does not, as of the date hereof, conflict with the information contained in the Registration Statement, the Preliminary Prospectus and the Prospectus

(e) **Distribution of Offering Material by the Company.** 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 Offered Shares, the Company has not distributed and will not distribute any offering material in connection with the offering and sale of the Offered Shares other than the Registration Statement, the Time of Sale Prospectus, the Prospectus or any free writing prospectus reviewed and consented to by the Representatives, and the free writing prospectuses, if any, identified on Schedule B hereto and any Permitted Section 5(d) Communications.

(f) **Financial Information.** The consolidated financial statements of the Company included or incorporated by reference in the Registration Statement, the Time of Sale Prospectus and the Prospectus, together with the related notes and schedules, present fairly, in all material respects, the consolidated financial position of the Company and its subsidiaries as of the dates indicated and the consolidated results of operations, cash flows and changes in shareholders’ equity of the Company for the periods specified and have been prepared in compliance in all material respects with the requirements of the Securities Act and Exchange Act and in conformity with generally accepted accounting principles in

the United States (“GAAP”) applied on a consistent basis during the periods involved; the other financial and statistical data with respect to the Company and its subsidiaries contained or incorporated by reference in the Registration Statement, the Time of Sale Prospectus and the Prospectus are accurately and fairly presented in all material respects and prepared on a basis consistent with the financial statements and books and records of the Company; 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 Prospectus and the Prospectus that are not included or incorporated by reference as required. The financial data set forth or incorporated by reference in each of the Registration Statement, the Time of Sale Prospectus and the Prospectus under the caption “Selected Financial Data” fairly present in all material respects the information set forth therein on a basis consistent with that of the audited financial statements contained in the Registration Statement, the Time of Sale Prospectus and the Prospectus. The interactive data in eXtensible Business Reporting Language included or incorporated by reference in the Registration Statement and the Prospectus fairly presents the information called for in all material respects and has been prepared in accordance with the Commission’s rules and guidelines applicable thereto.

(g) **Conformity with EDGAR Filing.** The Preliminary Prospectus and Final Prospectus delivered to the Underwriters for use in connection with the sale of the Offered Shares pursuant to this Agreement will be identical to the versions of the Preliminary Prospectus and the Prospectus created to be transmitted to the Commission for filing via EDGAR, except to the extent permitted by Regulation S-T.

(h) **Organization.** The Company has been duly incorporated and is validly existing as a public company limited by shares under the laws of Ireland and has corporate power and authority to own, lease and operate its properties and to conduct its business as described in the Registration Statement, the Time of Sale Prospectus and the Prospectus and to enter into and perform its obligations under this Agreement; and the Company is duly qualified as a foreign corporation to transact business and is in good standing in each other jurisdiction in which such qualification is required (or such equivalent concept, as applicable under the laws of such jurisdiction), whether by reason of the ownership or leasing of property or the conduct of business, except where the failure to so qualify or to be in good standing or have such power or authority would not, individually or in the aggregate, have a material adverse effect or would reasonably be expected to have a material adverse effect on or affecting the assets, business, operations, earnings, properties, condition (financial or otherwise), prospects, shareholders’ equity or results of operations of the Company and its subsidiaries taken as a whole, or prevent or materially interfere with consummation of the transactions contemplated hereby (a “Material Adverse Effect”).

(i) **Subsidiaries.** Each of the Company’s “subsidiaries” (for purposes of this Agreement, as defined in Rule 405 under the Securities Act) has been duly organized and is validly existing as a corporation, partnership or limited company, as applicable, in good standing under the laws of the jurisdiction of its incorporation or organization (or such equivalent concept, as applicable under the laws of such jurisdiction), has corporate or similar power and authority to own, lease and operate its properties and to conduct its business as described in the Registration Statement, the Time of Sale Prospectus and the Prospectus and is duly qualified to transact business and is in good standing in each jurisdiction in which such qualification is required (or such equivalent concept, as applicable under the laws of such jurisdiction), whether by reason of the ownership or leasing of property or the conduct of business, except where the failure to so qualify or to be in good standing (or such equivalent concept) or have such power or authority would not, individually or in the aggregate, have a Material Adverse Effect. All of the issued and outstanding share capital or capital stock, as the case may be, of each of the Company’s subsidiaries has been duly authorized and validly issued, is fully paid and are not subject to calls for any additional payments (nonassessable) and is owned by the Company, directly or through any of its subsidiaries, free and clear of any security interest, mortgage, pledge, lien, encumbrance, claim or equity. None of the outstanding share capital or capital stock, as the case may be, of any of the Company’s subsidiaries was issued in violation of the preemptive or similar rights of any securityholder of such subsidiary. Except for

the subsidiaries of the Company disclosed in the Registration Statement, the Time of Sale Prospectus and the Prospectus, the Company does not own or control, directly or indirectly, any corporation, association or other entity.

(j) **No Violation or Default; Conflicts.** Neither the Company nor any of its subsidiaries is (A) in violation of its memorandum and articles of association, constitution, charter, bylaws or similar organizational document, (B) in default in the performance or observance of any obligation, agreement, covenant or condition contained in any contract, indenture, mortgage, deed of trust, loan or credit agreement, note, lease or other agreement or instrument to which the Company or any of its subsidiaries is a party or by which it or any of them may be bound or to which any of the properties or assets of the Company or any of its subsidiaries is subject (collectively, “**Agreements and Instruments**”), except for such defaults that would not, singly or in the aggregate, reasonably be expected to result in a Material Adverse Effect, or (C) in violation of any law, statute, rule, regulation, judgment, order, writ or decree of any arbitrator, court, governmental body, regulatory body, administrative agency or other authority, body or agency having jurisdiction over the Company or any of its subsidiaries or any of their respective properties, assets or operations (each, a “**Governmental Authority**”), except for such violations that would not, singly or in the aggregate, reasonably be expected to result in a Material Adverse Effect. The execution, delivery and performance of this Agreement and the consummation of the transactions contemplated herein and in the Registration Statement, the Time of Sale Prospectus and the Prospectus (including the issuance and sale of the Offered Shares and the use of the proceeds from the sale of the Offered Shares as described therein under the caption “Use of Proceeds”) and compliance by the Company with its obligations hereunder have been duly authorized by all necessary corporate action and do not and will not, whether with or without the giving of notice or passage of time or both, conflict with or constitute a breach of, or default or Repayment Event (as defined below) under, or result in the creation or imposition of any lien, charge or encumbrance upon any properties or assets of the Company or any of its subsidiaries pursuant to, the Agreements and Instruments (except for such conflicts, breaches, defaults or Repayment Events or liens, charges or encumbrances that would not, singly or in the aggregate, result in a Material Adverse Effect), nor will such action result in any violation of (i) the provisions of the memorandum and articles of association, charter, bylaws or similar organizational document of the Company or any of its subsidiaries or (ii) any law, statute, rule, regulation, judgment, order, writ or decree of any Governmental Authority; except in the case of clause (ii) as would not, singly or in the aggregate, reasonably be expected to result in a Material Adverse Effect and as would not materially and adversely affect the consummation of the transactions contemplated in this Agreement. As used herein, a “**Repayment Event**” means any event or condition which gives the holder of any note, debenture or other evidence of indebtedness (or any person acting on such holder’s behalf) the right to require the repurchase, redemption or repayment of all or a portion of such indebtedness by the Company or any of its subsidiaries.

(k) **No Material Adverse Change.** Subsequent to the respective dates as of which information is given in the Registration Statement, the Time of Sale Prospectus, the Prospectus and the free writing prospectuses, if any (including any document deemed incorporated by reference therein), there has not been (i) any Material Adverse Effect or the occurrence of any development that the Company reasonably expects will result in a Material Adverse Effect, (ii) any transaction 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 share capital or outstanding long-term indebtedness of the Company or any of its subsidiaries or (v) any dividend or distribution of any kind declared, paid or made on the share capital of the Company or any of its subsidiaries, other than in each case above in the ordinary course of business or as otherwise disclosed in the Registration Statement or Prospectus (including any document deemed incorporated by reference therein).

(l) **Capitalization.** The authorized, issued and outstanding share capital of the Company has been duly authorized and validly issued, is fully paid and not subject to calls for any additional payments (nonassessable), and, except as disclosed in the Registration Statement, the Time of Sale Prospectus and the Prospectus, is not subject to any preemptive rights, rights of first refusal or similar rights. None of the outstanding share capital of the Company was issued in violation of the preemptive or other similar rights of any securityholder of the Company. The Company has an authorized, issued and outstanding share capital as set forth in the Registration Statement and the Prospectus as of the dates referred to therein (other than subsequent issuances, if any, pursuant to this Agreement, pursuant to reservations, agreements or employee benefit or equity incentive plans referred to in the Registration Statement, the Time of Sale Prospectus or the Prospectus or pursuant to the exercise of any warrants, options or other convertible securities referred to in the Registration Statement, the Time of Sale Prospectus and the Prospectus) and such authorized share capital conforms to the description thereof set forth in the Registration Statement, the Time of Sale Prospectus and the Prospectus. The description of the securities of the Company in the Registration Statement, the Time of Sale Prospectus and the Prospectus is complete and accurate in all material respects. Except as disclosed in or contemplated by the Registration Statement, the Time of Sale Prospectus or the Prospectus, as of the date referred to therein, the Company does not have outstanding any options to purchase, or any rights or warrants to subscribe for, or any securities or obligations convertible into, or exchangeable for, or any contracts or commitments to issue or sell, any of its share capital or other securities.

(m) **Enforceability.** The Company has full legal right, power and authority to enter into this Agreement and perform the transactions contemplated hereby. This Agreement has been duly authorized, executed and delivered by the Company.

(n) **Authorization of the Offered Shares.** The Offered Shares to be subscribed for by the Underwriters from the Company have been duly authorized for issuance and sale to the Underwriters pursuant to this Agreement and, when issued and delivered by the Company pursuant to this Agreement against payment of the consideration set forth herein, will be validly issued and fully paid and are not subject to calls for any additional payments (nonassessable); and, except as disclosed in the Registration Statement, the Time of Sale Prospectus and the Prospectus, the issuance of the Offered Shares is not subject to the preemptive or other similar rights of any securityholder of the Company that have not been validly waived. The Offered Shares, when issued, will conform to the description thereof set forth in or incorporated into the Registration Statement, the Time of Sale Prospectus and the Prospectus.

(o) **Registration Rights.** There are no persons with registration rights or other similar rights to have any securities registered for sale pursuant to the Registration Statement or otherwise registered for sale or sold by the Company under the Securities Act pursuant to this Agreement, other than those rights that have been disclosed in the Registration Statement, the Time of Sale Prospectus and the Prospectus and have been waived.

(p) **No Consents Required.** No consent, approval, authorization, order, registration or qualification of or with any Governmental Authority is required for the execution, delivery and performance by the Company of this Agreement, the issuance and sale by the Company of the Offered Shares, except for such consents, approvals, authorizations, orders and registrations or qualifications as may be required under applicable state securities laws or by the laws and rules of the Financial Industry Regulatory Authority (“FINRA”) or Nasdaq in connection with the sale of the Offered Shares.

(q) **No Preferential Rights.** Except as set forth in the Registration Statement, the Time of Sale Prospectus and the Prospectus, (i) no person, as such term is defined in Rule 1-02 of Regulation S-X promulgated under the Securities Act (each, a “Person”), has the right, contractual or otherwise, to cause the Company to issue or sell to such Person any of its share capital or other securities, (ii) no Person has

any preemptive rights, resale rights, rights of first refusal, rights of co-sale, or any other rights (whether pursuant to a “poison pill” provision or otherwise) to purchase any of the Company’s share capital or other securities, (iii) no Person has the right to act as an underwriter or as a financial advisor to the Company in connection with the offer and sale of the Shares, and (iv) no Person has the right, contractual or otherwise, to require the Company to register under the Securities Act any Shares or other securities of the Company, or to include any such Shares or other securities in the Registration Statement or the offering contemplated hereby, whether as a result of the filing or effectiveness of the Registration Statement or the sale of the Offered Shares as contemplated hereby or otherwise.

(r) **Independent Public Accounting Firm.** Ernst & Young LLP, whose report on the consolidated financial statements of the Company is filed with the Commission as part of the Annual Report filed with the Commission and incorporated by reference into the Registration Statement and the Prospectus, are and, during the periods covered by their report, were an independent registered public accounting firm within the meaning of the Securities Act and the Public Company Accounting Oversight Board (United States). To the Company’s knowledge, Ernst & Young LLP is not in violation of the auditor independence requirements of the Sarbanes-Oxley Act of 2002 (the “**Sarbanes-Oxley Act**”) with respect to the Company.

(s) **Absence of Labor Dispute.** No labor dispute with the employees of the Company or any of its subsidiaries exists or, to the knowledge of the Company, is imminent, and the Company is not aware of any existing or imminent labor disturbance by the employees of any of its or any subsidiary’s principal suppliers, manufacturers, collaborators, customers or contractors, which, in any case, would reasonably be expected to result in a Material Adverse Effect.

(t) **Absence of Proceedings.** Except as disclosed in the Registration Statement, the Time of Sale Prospectus and the Prospectus, there is no action, suit, proceeding, inquiry or investigation before or brought by any Governmental Authority now pending or, to the knowledge of the Company, threatened, against or affecting the Company or any of its subsidiaries, which would reasonably be expected to result in a Material Adverse Effect, or which would reasonably be expected to materially and adversely affect their respective properties or assets or the consummation of the transactions contemplated in this Agreement or the performance by the Company of its obligations hereunder; and the aggregate of all pending legal or governmental proceedings to which the Company or any of its subsidiaries is a party or of which any of their respective properties or assets is the subject which are not described in the Registration Statement, the Time of Sale Prospectus and the Prospectus, including ordinary routine litigation incidental to the business, would not reasonably be expected to result in a Material Adverse Effect.

(u) **Accuracy of Exhibits.** There are no contracts or documents which are required to be described in the Registration Statement, the Time of Sale Prospectus or the Prospectus or to be filed as exhibits to the Registration Statement which have not been so described and filed as required.

(v) **Possession of Licenses and Permits.** The Company and each of its subsidiaries possess such permits, licenses, approvals, consents and other authorizations (collectively, “**Governmental Licenses**”) issued by the appropriate Governmental Authority necessary to conduct the business now operated by them, except where the failure so to possess would not, singly or in the aggregate, result in a Material Adverse Effect. The Company and each of its subsidiaries are in compliance with the terms and conditions of all Governmental Licenses, except where the failure so to comply would not, singly or in the aggregate, result in a Material Adverse Effect. All of the Governmental Licenses are valid and in full force and effect, except when the invalidity of such Governmental Licenses or the failure of such Governmental Licenses to be in full force and effect would not, singly or in the aggregate, reasonably be expected to result in a Material Adverse Effect. Neither the Company nor any of its subsidiaries has received any notice of proceedings relating to the revocation or modification of any Governmental Licenses which,

singly or in the aggregate, if the subject of an unfavorable decision, ruling or finding, would result in a Material Adverse Effect.

(w) ***Title to Property.*** The Company and each of its subsidiaries have good and marketable title to all real property owned by them and good title to all other properties owned by them, in each case, free and clear of all mortgages, pledges, liens, security interests, claims, restrictions or encumbrances of any kind except such as (A) are described in the Registration Statement, the Time of Sale Prospectus and the Prospectus or (B) do not, singly or in the aggregate, materially affect the value of such property and do not interfere with the use made and proposed to be made of such property by the Company or any of its subsidiaries; and all of the leases and subleases relating to the business of the Company and each of its subsidiaries, and under which the Company or any of its subsidiaries holds properties described in the Registration Statement, the Time of Sale Prospectus or the Prospectus, are in full force and effect, and neither the Company nor any of its subsidiaries has any notice of any claim of any sort that has been asserted by anyone adverse to the rights of the Company or any of its subsidiaries under any of the leases or subleases mentioned above, or affecting or questioning the rights of the Company or such subsidiary to the continued possession of the leased or subleased premises under any such lease or sublease, except to the extent that any claim or adverse effect on the Company's rights thereto would not reasonably be expected to result in a Material Adverse Effect.

(x) ***Possession of Intellectual Property.*** To the Company's knowledge, the Company and each of its subsidiaries owns or possesses, has licenses to, or can acquire or license on reasonable terms, adequate patents, patent rights, licenses, inventions, copyrights, know how (including trade secrets and other unpatented and/or unpatentable proprietary or confidential information, systems or procedures), trademarks, service marks, trade names or other intellectual property (collectively, "**Intellectual Property**") necessary to carry on the business now operated by them and as currently proposed to be conducted as disclosed in the Registration Statement, the Time of Sale Prospectus and the Prospectus, and neither the Company nor any of its subsidiaries has received any notice or is otherwise aware of any infringement of or conflict with asserted rights of others with respect to any Intellectual Property or of any facts or circumstances which would render invalid any issued patents within the Intellectual Property disclosed in the Registration Statement, the Time of Sale Prospectus and the Prospectus as owned by or exclusively licensed to the Company or any of its subsidiaries (the "**Company Intellectual Property**"), and which infringement or conflict (if the subject of any unfavorable decision, ruling or finding) or invalidity, singly or in the aggregate, would result in a Material Adverse Effect. To the Company's knowledge: (i) except as disclosed in the Registration Statement, the Time of Sale Prospectus and the Prospectus, there are no third parties who have any ownership or license rights to any Company Intellectual Property, except for customary reversionary rights of third-party licensors with respect to the Intellectual Property that is disclosed in the Registration Statement, the Time of Sale Prospectus and the Prospectus as exclusively licensed to the Company or any of its subsidiaries; and (ii) there is no infringement by third parties of any Company Intellectual Property. There is no pending or, to the Company's knowledge, threatened action, suit, proceeding or claim by others: (A) challenging the Company's rights in or to any Company Intellectual Property; (B) challenging the validity, enforceability or scope of any Company Intellectual Property; or (C) asserting that the Company or any of its subsidiaries infringes, misappropriates or otherwise violates, or would, upon the commercialization of any product or service described in the Registration Statement, the Time of Sale Prospectus and the Prospectus as under development, infringe, misappropriate or otherwise violate, any Intellectual Property rights of others. The Company and each of its subsidiaries have complied in all material respects with the terms of each agreement pursuant to which Intellectual Property has been licensed to the Company or any of its subsidiaries, and, to the Company's knowledge, all such agreements are in full force and effect. To the Company's knowledge, there are no material defects in any of the patents or patent applications included in the Company Intellectual Property.

(y) **Environmental Laws.** Except as described in the Registration Statement, the Time of Sale Prospectus and the Prospectus, or would not, singly or in the aggregate, reasonably be expected to result in a Material Adverse Effect, (A) neither the Company nor any of its subsidiaries is in violation of any federal, state, local or foreign statute, law, rule, regulation, ordinance, code, policy or rule of common law or any judicial or administrative interpretation thereof, including any judicial or administrative order, consent, decree or judgment, relating to pollution or protection of human health, the environment (including, without limitation, ambient air, surface water, groundwater, land surface or subsurface strata) or wildlife, including, without limitation, laws and regulations relating to the release or threatened release of chemicals, pollutants, contaminants, wastes, toxic substances, hazardous substances, petroleum or petroleum products, asbestos-containing materials or mold (collectively, “**Hazardous Materials**”) or to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of Hazardous Materials (collectively, “**Environmental Laws**”), (B) the Company and each of its subsidiaries have all permits, authorizations and approvals required for their operations under any applicable Environmental Laws and are each in compliance with their requirements, (C) there are no pending or, to the knowledge of the Company, threatened administrative, regulatory or judicial actions, suits, demands, demand letters, claims, liens, notices of noncompliance or violation, investigations or proceedings relating to any Environmental Law against the Company or any of its subsidiaries and (D) to the knowledge of the Company, there are no events or circumstances existing as of the date hereof that would reasonably be expected to form the basis of an order for clean-up or remediation, or an action, suit or proceeding by any private party or Governmental Authority, against or affecting the Company or any of its subsidiaries relating to Hazardous Materials or any Environmental Laws.

(z) **No Material Defaults.** Neither the Company nor any of its subsidiaries has defaulted on any installment on indebtedness for borrowed money or on any rental on one or more long-term leases, which defaults, individually or in the aggregate, would reasonably be expected to have a Material Adverse Effect. The Company has not filed a report pursuant to Section 13(a) or 15(d) of the Exchange Act since the filing of the Annual Report, indicating that it (i) has failed to pay any dividend or sinking fund installment on preferred stock or (ii) has defaulted on any installment on indebtedness for borrowed money or on any rental on one or more long-term leases, which defaults, individually or in the aggregate, would reasonably be expected to have a Material Adverse Effect.

(aa) **Certain Market Activities.** Neither the Company nor any of its subsidiaries has taken, directly or indirectly, any action designed to or that might cause or result in stabilization or manipulation of the price of the Shares or of any “reference security” (as defined in Rule 100 of Regulation M under the Exchange Act (“**Regulation M**”)) with respect to the Shares, whether to facilitate the sale or resale of the Offered Shares or otherwise, and has taken no action which would directly or indirectly violate Regulation M.

(bb) **Broker/Dealer Relationships.** Neither the Company nor any of its subsidiaries (i) is required to register as a “broker” or “dealer” in accordance with the provisions of the Exchange Act or (ii) directly or indirectly through one or more intermediaries, controls or is a “person associated with a member” or “associated person of a member” (within the meaning set forth in the FINRA Manual).

(cc) **No Reliance.** The Company has not relied upon the Representatives or legal counsel for the Representatives for any legal, tax or accounting advice in connection with the offering and sale of the Offered Shares.

(dd) **Accounting Controls.** The Company and each of its subsidiaries maintain systems of internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in accordance with management’s general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain asset

accountability; (iii) access to assets is permitted only in accordance with management's general or specific authorization; and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. Except as set forth in the Registration Statement, Time of Sale Prospectus or Prospectus, (A) the Company's internal control over financial reporting is effective and the Company is not aware of any material weaknesses in its internal control over financial reporting and (B) since the date of the latest audited financial statements of the Company included in the Prospectus, there has been no change in the Company's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting. The Company has established disclosure controls and procedures (as defined in Exchange Act Rules 13a-15 and 15d-15) for the Company and designed such disclosure controls and procedures to ensure that material information relating to the Company and each of its subsidiaries is made known to the certifying officers by others within those entities, particularly during the period in which the Company's Annual Report on Form 10-K is being prepared. The Company's certifying officers have evaluated the effectiveness of the Company's disclosure controls and procedures as of a date within 90 days prior to the filing date of the Annual Report such date, the "**Evaluation Date**"). The Company presented in its Form 10-K for the fiscal year most recently ended the conclusions of the certifying officers about the effectiveness of the disclosure controls and procedures based on their evaluations as of the Evaluation Date and, except as disclosed therein, the disclosure controls and procedures were effective as of December 31, 2019. Since the Evaluation Date, there have been no significant changes in the Company's internal controls (as such term is defined in Item 307(b) of Regulation S-K under the Securities Act) or, to the Company's knowledge, in other factors that could significantly affect the Company's internal controls.

(ee) **Sarbanes-Oxley.** There is and has been no failure on the part of the Company or any of the Company's directors or officers, in their capacities as such, to comply in all material respects with any applicable provisions of the Sarbanes-Oxley Act and the rules and regulations promulgated thereunder. Each of the principal executive officer and the principal financial officer of the Company (or each former principal executive officer of the Company and each former principal financial officer of the Company as applicable) has made all certifications required by Sections 302 and 906 of the Sarbanes-Oxley Act with respect to all reports, schedules, forms, statements and other documents required to be filed by it or furnished by it to the Commission. For purposes of the preceding sentence, "principal executive officer" and "principal financial officer" shall have the meanings given to such terms in the Sarbanes-Oxley Act.

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

(gg) **Payment of Taxes.** All United States federal and material non-U.S. income tax returns of the Company and each of its subsidiaries required by law to be filed have been filed and all material taxes whether or not shown on such returns, which are due and payable, have been paid, except assessments against which appeals have been or will be promptly taken and as to which adequate reserves have been provided. Except as described in the Registration Statement, the Time of Sale Prospectus and the Prospectus, no tax return filed by the Company is currently subject to an audit or other administrative or judicial proceeding, and no such audit or other proceeding is, to the Company's knowledge, threatened or pending. The Company and each of its subsidiaries have filed all other tax returns that are required to have

been filed by them pursuant to applicable foreign, state, local or other law except insofar as the failure to file such returns would not result in a Material Adverse Effect, and has paid all taxes due pursuant to such returns or pursuant to any assessment received by the Company and each of its subsidiaries, except for such taxes, if any, as are being contested in good faith and as to which adequate reserves have been established by the Company and except where the failure to pay such taxes would not reasonably be expected to result in a Material Adverse Effect. The charges, accruals and reserves on the books of the Company in respect of any income and corporation tax liability for any years not finally determined are adequate to meet any assessments or re-assessments for additional income tax for any years not finally determined, except to the extent of any inadequacy that would not result in a Material Adverse Effect.

(hh) Transfer Taxes. There are no transfer taxes or other similar fees or charges under Irish or federal law or the laws of any state, or any political subdivision thereof, required to be paid by the Company or the Underwriters in connection with the execution and delivery of this Agreement and the consummation of the transactions contemplated herein (including the issue and sale of the Offered Shares).

(ii) No Transaction or Other Taxes. Except as described in the Registration Statement, the Time of Sale Prospectus and the Prospectus, no transaction, stamp, capital or other issuance, registration, transaction, transfer or withholding taxes or duties are payable in Ireland by or on behalf of the Underwriters to any Irish taxing authority in connection with (A) the issuance and allotment of the Offered Shares by the Company to or for the account of the Underwriters, (B) the subscription by the Underwriters from the Company and the initial sale by the Underwriters of the Offered Shares to purchasers thereof, (C) the holding or transfer of the Offered Shares or (D) the execution and delivery of this Agreement or any other documents to be furnished hereunder.

(jj) Validity of Choice of Law. The choice of the law of the State of New York as the governing law of this Agreement is a valid choice of law under the laws of Ireland and, except as disclosed in the Registration Statement, the Time of Sale Prospectus and the Prospectus, will be honored by courts in Ireland. The Company has the power to submit, and pursuant to Section 21 of this Agreement, has legally, validly, effectively and irrevocably submitted, to the personal jurisdiction of each United States federal court and New York state court located in the Borough of Manhattan, in The City of New York, New York, United States, and the Company has legally, validly, effectively and irrevocably designated, appointed and authorized an agent for service of process in any action arising out of or relating to this Agreement or the Securities in any New York federal or state court.

(kk) Brokers. Neither the Company nor any of the subsidiaries has incurred any liability for any finder's fees, brokerage commissions or similar payments in connection with the transactions herein contemplated, except as may otherwise exist with respect to or pursuant to this Agreement.

(ll) Lending Relationship. Except as disclosed in the Registration Statement, the Time of Sale Prospectus and the Prospectus, the Company (A) does not have any material lending or other relationship with any bank or lending affiliate of any Underwriter and (B) does not intend to use any of the proceeds from the issue of the Offered Shares to repay any outstanding debt owed to any affiliate of any Underwriter.

(mm) Insurance. Except as described in the Registration Statement, the Time of Sale Prospectus and the Prospectus, the Company and each of its subsidiaries carry or are entitled to the benefits of insurance, with financially sound and reputable insurers, in such amounts and covering such risks as is generally maintained by companies of established repute engaged in the same or similar business, and all such insurance is in full force and effect. The Company has no reason to believe that it or any of its subsidiaries will not be able (A) to renew its existing insurance coverage as and when such policies expire or (B) to obtain comparable coverage from similar institutions as may be necessary or

appropriate to conduct its business as now conducted and at a cost that would not result in a Material Adverse Effect. Neither the Company nor any of its subsidiaries has been denied any insurance coverage which it has sought or for which it has applied.

(nn) Investment Company Act. Neither the Company nor any of its subsidiaries is, or will be, either after receipt of payment for the Offered Shares or after the application of the proceeds therefrom as described under “Use of Proceeds” in the Registration Statement, the Time of Sale Prospectus or the Prospectus, required to register as an “investment company” or an entity “controlled” by an “investment company,” as such terms are defined in the Investment Company Act of 1940, as amended (the “**Investment Company Act**”).

(oo) Regulatory Matters. Except as described in the Registration Statement, the Time of Sale Prospectus and the Prospectus, and except as would not, individually or in the aggregate, result in a Material Adverse Effect: (i) neither the Company nor any of its subsidiaries has received any written notice of adverse filing, warning letter, untitled letter or other correspondence or notice from the U.S. Food and Drug Administration or other relevant regulatory authorities, or any other court or arbitrator or federal, state, local or foreign governmental or regulatory authority, alleging or asserting material noncompliance with the Federal Food, Drug and Cosmetic Act (21 U.S.C. § 301 et seq.) (the “**FFDCA**”), or similar state, federal or foreign law or regulation; (ii) the Company and each of its subsidiaries, and to the Company's knowledge, their respective directors, officers, employees or agents, are and since January 1, 2012 have been in compliance with applicable health care laws, including without limitation, the FFDCA and the federal Anti-Kickback Statute (42 U.S.C. § 1320a-7b(b)), the Civil Monetary Penalties Law (42 U.S.C. § 1320a-7a), the U.S. Civil False Claims Act (31 U.S.C. §3729 et seq.), 18 U.S.C. §§286 and 287, and the health care fraud criminal provisions under the U.S. Health Insurance Portability and Accountability Act of 1996 (“**HIPAA**”) (42 U.S.C. Section 1320d et seq.), the exclusion laws (42 U.S.C. §1320a-7), HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act (42 U.S.C. §17921 et seq.), the U.S. Controlled Substances Act (21 U.S.C. Section 801 et seq.), each as amended, and the regulations promulgated thereunder; and all other comparable local, state, federal, national, supranational and foreign laws, and the regulations promulgated thereunder, (collectively, “**Health Care Laws**”); (iii) neither the Company nor any of its subsidiaries has received written notice of any ongoing claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from any Governmental Authority or third party alleging that any product operation or activity is in violation of any Health Care Laws or has any knowledge that any such Governmental Authority or third party is considering any such claim, litigation, arbitration, action, suit, investigation or proceeding; (iv) neither the Company nor any of its subsidiaries has received written notice that any Governmental Authority has taken, is taking or intends to take action to limit, suspend, modify or revoke any applicable Permit or has any knowledge that any such Governmental Authority is considering such action; (v) the Company and each of its subsidiaries have filed, obtained, maintained or submitted all reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by any Health Care Laws and that all such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were complete, correct and not misleading on the date filed (or were corrected or supplemented by a subsequent submission); (vi) neither the Company nor any of its subsidiaries has, either voluntarily or involuntarily, initiated, conducted, or issued or caused to be initiated, conducted or issued, any recall, market withdrawal or replacement, safety alert, post-sale warning, “dear healthcare provider” letter, or other notice or action relating to the alleged lack of safety or efficacy of any product or any alleged product defect or violation and, to the Company’s knowledge, no third party has initiated or conducted any such notice or action; and (vii) neither the Company nor any of its subsidiaries or any of their respective directors, officers, employees or agents is or has been debarred, suspended or excluded, or has been convicted of any crime or engaged in any conduct that would result in a debarment, suspension or exclusion from any federal or state government health care program.

(pp) Clinical Matters. The preclinical and clinical studies and tests described in the Registration Statement, the Time of Sale Prospectus and the Prospectus conducted by or, to the knowledge of the Company, on behalf of the Company, have been and, if still pending, are being conducted in all material respects in accordance with experimental protocols, procedures and controls pursuant to all Health Care Laws and applicable Governmental Licenses; the descriptions of the results of such preclinical and clinical studies and tests contained in the Registration Statement, the Time of Sale Prospectus and the Prospectus are accurate and complete in all material respects and fairly present the data derived from such preclinical and clinical studies and tests; except to the extent disclosed in the Registration Statement, the Time of Sale Prospectus and the Prospectus, the Company is not aware of any preclinical or clinical studies or tests, the results of which the Company believes reasonably call into question the preclinical or clinical study or test results described or referred to in the Registration Statement, the Time of Sale Prospectus and the Prospectus when viewed in the context in which such results are described; and neither the Company nor any of its subsidiaries has received any written notices or correspondence from any Governmental Authority requiring the termination, suspension or material modification of any preclinical or clinical study or test conducted by or on behalf of the Company.

(qq) No Rated Securities. Neither the Company nor any of its subsidiaries has any debt securities or preferred shares that are rated by any "nationally recognized statistical rating organization" (as defined in Section 3(a)(62) of the Exchange Act).

(rr) Dividend Restrictions. Except as otherwise provided in the Term Loan Agreement, dated as of May 19, 2020, by and among the Company, its subsidiaries and other subsidiary guarantors from time to time party thereto, Avenue Venture Opportunities Fund, L.P., as administrative agent and collateral agent, and the lenders from time to time party thereto, and except as imposed by applicable law, no subsidiary of the Company is prohibited or restricted directly or indirectly, from paying dividends to the Company, or from making any other distribution with respect to such subsidiary's equity securities or from repaying to the Company or any other subsidiary of the Company any amounts that may from time to time become due under any loans or advances to such subsidiary from the Company or from transferring any property or assets to the Company or to any other subsidiary.

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

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

(uu) Anti-Corruption and Anti-Bribery Laws. Neither the Company nor any of its subsidiaries nor, to the knowledge of the Company, any director, officer, employee, agent, affiliate or other person acting on behalf of the Company or any of its subsidiaries has, in the course of its actions for, or on behalf of, the Company or any of its subsidiaries (i) used any corporate funds for any unlawful contribution, gift, entertainment or other unlawful expenses relating to political activity; (ii) made or taken any 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 public international organization, or any political party, party official, or candidate for political office; (iii) violated or is in violation of any provision of the U.S. Foreign Corrupt Practices Act of 1977, as amended (the “**FCPA**”), the UK Bribery Act 2010, or any other applicable anti-bribery or anti-corruption law; or (iv) made, offered, authorized, requested, or taken an act in furtherance of any unlawful bribe, rebate, payoff, influence payment, kickback or other unlawful payment or benefit. The Company and its subsidiaries and, to the knowledge of the Company, the Company’s affiliates have conducted their respective businesses in compliance with the FCPA and have instituted and maintain policies and procedures designed to ensure, and which are reasonably expected to continue to ensure, continued compliance therewith.

(vv) **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 of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all applicable jurisdictions, the rules and regulations thereunder and any related or similar applicable rules, regulations or guidelines, issued, administered or enforced by any governmental agency (collectively, the “**Money Laundering Laws**”) and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any of its subsidiaries with respect to the Money Laundering Laws is pending or, to the best knowledge of the Company, threatened.

(ww) **Sanctions.** Neither the Company nor any of its subsidiaries, nor, to the knowledge of the Company, after due inquiry, any director, officer, employee, agent, affiliate or other person acting on behalf of the Company or any of its subsidiaries is currently the subject or the target of any U.S. sanctions administered by the Office of Foreign Assets Control of the U.S. Department of the Treasury (“**OFAC**”) or the U.S. Department of State, the United Nations Security Council, the European Union, Her Majesty’s Treasury of the United Kingdom, 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 the target of Sanctions, including, without limitation, Crimea, Cuba, Iran, North Korea, and Syria; and the Company will not directly or indirectly use the proceeds of this offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, or any joint venture partner or other person or entity, for the purpose of financing the activities of or business with any person, or in any country or territory, that at the time of such financing, is the subject or the target of Sanctions or in any other manner that will result in a violation by any person (including any person participating in the transaction whether as underwriter, advisor, investor or otherwise) of applicable 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.

(xx) **Compliance with Laws.** The Company and each of its subsidiaries are in compliance with all applicable laws, regulations and statutes (including all environmental laws and regulations) in the jurisdictions in which it carries on business; the Company has not received a notice of non-compliance, nor knows of, nor has reasonable grounds to know of, any facts that could give rise to a notice of non-compliance with any such laws, regulations and statutes, and is not aware of any pending change or contemplated change to any applicable law or regulation or governmental position; except, in each case, where such non-compliance, potential non-compliance or potential change in an applicable law, regulation or governmental position, would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(yy) **ERISA Compliance.** The Company and its subsidiaries and any “employee benefit plan” (as defined under the Employee Retirement Income Security Act of 1974, as amended, and the regulations

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

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

(aaa) **Cybersecurity.** The Company and its subsidiaries’ information technology assets and equipment, computers, systems, networks, hardware, software, websites, applications, and databases (collectively, “**IT Systems**”) are adequate for, and operate and perform in all material respects as required in connection with the operation of the business of the Company and its subsidiaries as currently conducted, free and clear of all material bugs, errors, defects, Trojan horses, time bombs, malware and other corruptants. The Company and its subsidiaries have implemented and maintained commercially reasonable physical, technical and administrative controls, policies, procedures, and safeguards to maintain and protect their material confidential information and the integrity, continuous operation, redundancy and security of all IT Systems and data, including “Personal Data,” used in connection with their businesses. “**Personal Data**” means (i) a natural person’s name, street address, telephone number, e-mail address, photograph, social security number or tax identification number, driver’s license number, passport number, credit card number, bank information, or customer or account number; (ii) any information which would qualify as “personally identifying information” under the Federal Trade Commission Act, as amended; (iii) “personal data” as defined by the European Union General Data Protection Regulation (“**GDPR**”) (EU 2016/679); (iv) any information which would qualify as “protected health information” under the Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Health Act (collectively, “**HIPAA**”); and (v) any other piece of information that allows the identification of such natural person, or his or her family, or permits the collection or analysis of any data related to an identified person’s health or sexual orientation. There have been no breaches, violations, outages or unauthorized uses of or accesses to same, except for those that have been remedied without material cost or liability or the duty to notify any other person, nor any incidents under internal review or investigations relating to the same. The Company and its subsidiaries are presently in material compliance with all applicable laws or statutes and all judgments, orders, rules and regulations of any court or arbitrator or governmental or regulatory authority, internal policies and contractual obligations relating to the privacy and security of IT Systems and Personal Data and to the protection of such IT Systems and Personal Data from unauthorized use, access, misappropriation or modification.

(bbb) Compliance with Data Privacy Laws. The Company and its subsidiaries are, and at all prior times were, in material compliance with all applicable state and federal data privacy and security laws and regulations, including without limitation HIPAA, and the Company and its subsidiaries have taken commercially reasonable actions to prepare to comply with, and since May 25, 2018, have been and currently are in compliance with, the GDPR (collectively, the “**Privacy Laws**”). To ensure compliance with the Privacy Laws, the Company and its subsidiaries have in place, comply with, and take appropriate steps reasonably designed to ensure compliance in all material respects with their policies and procedures relating to data privacy and security and the collection, storage, use, disclosure, handling, and analysis of Personal Data (the “**Policies**”). The Company and its subsidiaries have at all times made all disclosures to users or customers required by applicable laws and regulatory rules or requirements, and none of such disclosures made or contained in any Policy have, to the knowledge of the Company, been inaccurate or in violation of any applicable laws and regulatory rules or requirements in any material respect. The Company further certifies that neither it nor any subsidiary: (i) has received notice of any actual or potential liability under or relating to, or actual or potential violation of, any of the Privacy Laws, and has no knowledge of any event or condition that would reasonably be expected to result in any such notice; (ii) is currently conducting or paying for, in whole or in part, any investigation, remediation, or other corrective action pursuant to any Privacy Law; or (iii) is a party to any order, decree, or agreement that imposes any obligation or liability under any Privacy Law.

(ccc) Statistical and Market-Related Data. All statistical, demographic and market-related data included in the Registration Statement, the Time of Sale Prospectus or the Prospectus are based on or derived from sources that the Company believes to be reliable and accurate or represent the Company’s good faith estimates that are made on the basis of data derived from such sources.

(ddd) Stock Exchange Listing. The Shares are registered pursuant to Section 12(b) or 12(g) of the Exchange Act and are listed on the Nasdaq Global Select Market (“**NASDAQ**”), and the Company has taken no action designed to, or likely to have the effect of, terminating the registration of the Shares under the Exchange Act or delisting the Shares from Nasdaq, nor has the Company received any notification that the Commission or Nasdaq is contemplating terminating such registration or listing. To the Company’s knowledge, it is in compliance with all applicable listing requirements of Nasdaq.

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

(fff) FINRA Matters. All of the information provided to the Underwriters or to counsel for the Underwriters by the Company and, to the knowledge of the Company, its counsel, its officers and directors and the holders of any securities (debt or equity) or options to acquire any securities of the Company in connection with the offering of the Offered Shares and any letters, filings or other supplemental information provided to FINRA pursuant to FINRA Conduct Rules 5110 or 5121 is true, complete and correct.

(ggg) Parties to Lock-Up Agreements. The Company has furnished to the Underwriters a letter agreement in the form attached hereto as Exhibit A (the “**Lock-up Agreement**”) from each of the persons listed on Exhibit B hereto. Exhibit B lists under an appropriate caption the directors and officers of the Company. If any additional persons shall become directors or officers of the Company prior to the end of the Company Lock-up Period (as defined below), the Company shall cause each such person, prior to or contemporaneously with their appointment or election as a director or officer of the Company, to execute and deliver to the Representatives a Lock-up Agreement.

Any certificate signed by any officer of the Company or any of its subsidiaries and delivered to any Underwriter or to counsel for the Underwriters in connection with the offering, or the purchase and sale, of the Offered Shares shall be deemed a representation and warranty by the Company to each Underwriter as to the matters covered thereby.

The Company has a reasonable basis for making each of the representations set forth in this Section 1. The Company acknowledges that the Underwriters and, for purposes of the opinions to be delivered pursuant to Section 6 hereof, counsel to the Company and counsel to the Underwriters, will rely upon the accuracy and truthfulness of the foregoing representations and hereby consents to such reliance.

Section 2. Purchase, Sale and Delivery of the Offered Shares.

(a) **The Firm Shares.** Upon the terms herein set forth, the Company agrees to issue and sell to the several Underwriters an aggregate of 11,111,111 Firm Shares. On the basis of the representations, warranties and agreements herein contained, and upon the terms but subject to the conditions herein set forth, the Underwriters agree, severally and not jointly, to purchase from the Company the respective number of Firm Shares set forth opposite their names on Schedule A. The purchase price per Firm Share to be paid by the several Underwriters to the Company shall be \$2.115 per share.

(b) **The First Closing Date.** Delivery of the book-entry positions for the Firm Shares to be purchased by the Underwriters and payment therefor shall be made at the offices of Cooley LLP (or such other place as may be agreed to by the Company and the Representatives) at 9:00 a.m. New York City time, on September 21, 2020, or such other time and date not later than 1:30 p.m. New York City time, on October 5, 2020 as the Representatives shall designate by notice to the Company (the time and date of such closing are called the “**First Closing Date**”). The Company hereby acknowledges that circumstances under which the Representatives may provide notice to postpone the First Closing Date as originally scheduled include, but are not limited to, any determination by the Company or the Representatives to recirculate to the public copies of an amended or supplemented Prospectus or a delay as contemplated by the provisions of Section 11.

(c) **The Optional Shares; Option Closing Date.** In addition, on the basis of the representations, warranties and agreements herein contained, and upon the terms but subject to the conditions herein set forth, the Company hereby grants an option to the several Underwriters to purchase, severally and not jointly, up to an aggregate of 1,666,666 Optional Shares from the Company at the purchase price per share to be paid by the Underwriters for the Firm Shares, less an amount per share equal to any dividend or distribution declared by the Company and payable on the Firm Shares but not payable on Optional Shares. The option granted hereunder may be exercised at any time and from time to time in whole or in part upon notice by the Representatives to the Company, which notice may be given at any time within 30 days from the date of this Agreement. Such notice shall set forth (i) the aggregate number of Optional Shares as to which the Underwriters are exercising the option and (ii) the time, date and place for the electronic settlement for the Optional Shares (which time and date may be simultaneous with, but not earlier than, the First Closing Date; and in the event that such time and date are simultaneous with the First Closing Date, the term “**First Closing Date**” shall refer to the time and date of delivery of the book-entry positions for the Firm Shares and such Optional Shares). Any such time and date of delivery, if subsequent to the First Closing Date, is called an “**Option Closing Date**,” and shall be determined by the Representatives and shall not be earlier than two or later than five full business days after delivery of such notice of exercise. If any Optional Shares are to be purchased, each Underwriter agrees, severally and not jointly, to purchase the number of Optional Shares (subject to such adjustments to eliminate fractional shares as the Representatives may determine) that bears the same proportion to the total number of Optional Shares to be purchased as the number of Firm Shares set forth on Schedule A opposite the name

of such Underwriter bears to the total number of Firm Shares. The Representatives may cancel the option at any time prior to its expiration by giving written notice of such cancellation to the Company.

(d) Public Offering of the Offered Shares. The Representatives hereby advise the Company that the Underwriters intend to offer for sale to the public, initially on the terms set forth in the Registration Statement, the Time of Sale Prospectus and the Prospectus, their respective portions of the Offered Shares as soon after this Agreement has been executed as the Representatives, in their sole judgment, have determined is advisable and practicable.

(e) Payment for the Offered Shares. (i) Payment for the Offered Shares shall be made at the First Closing Date (and, if applicable, at each Option Closing Date) by wire transfer of immediately available funds to the order of the Company.

(ii) It is understood that the Representatives have been authorized, for their own account and the accounts of the several Underwriters, to accept delivery of and receipt for, and make payment of the purchase price for, the Firm Shares and any Optional Shares the Underwriters have agreed to purchase. Each of Jefferies and Stifel, individually and not as the Representatives of the Underwriters, may (but shall not be obligated to) make payment for any Offered Shares to be purchased by any Underwriter whose funds shall not have been received by the Representatives by the First Closing Date or the applicable Option Closing Date, as the case may be, for the account of such Underwriter, but any such payment shall not relieve such Underwriter from any of its obligations under this Agreement.

(f) Delivery of the Offered Shares. The Company shall deliver, or cause to be delivered to the Representatives for the accounts of the several Underwriters the book-entry positions for the Firm Shares at the First Closing Date, against the irrevocable release of a wire transfer of immediately available funds for the amount of the purchase price therefor. The Company shall also deliver, or cause to be delivered to the Representatives for the accounts of the several Underwriters, the book-entry positions for the Optional Shares the Underwriters have agreed to purchase at the First Closing Date or the applicable Option Closing Date, as the case may be, against the release of a wire transfer of immediately available funds for the amount of the purchase price therefor. Delivery of the Firm Shares at the First Closing Date and the Option Shares, if any, at the applicable Option Closing Date, shall be made through the facilities of The Depository Trust Company. Time shall be of the essence, and delivery at the time and place specified in this Agreement is a further condition to the obligations of the Underwriters. For the purpose of effecting the delivery of the Firm Shares and the Option Shares (if any), as the case may be, pursuant to this Section 2 in book-entry form, the Company agrees to issue, or cause to be issued, to Cede & Co., such Shares being issued to the Underwriters and to instruct Cede & Co. to deliver the book-entry interest in such Shares to broker accounts as directed by the Representatives on behalf of the Underwriters.

Section 3. Additional Covenants

The Company further covenants and agrees with each Underwriter as follows:

(a) Delivery of Registration Statement, Time of Sale Prospectus and Prospectus. The Company shall furnish to you in New York City, without charge, as soon as practicable after the date of this Agreement and continuing during the period when a prospectus relating to the Offered Shares is required by the Securities Act to be delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule) in connection with sales of the Offered Shares, as many copies of the Time of Sale Prospectus, the Prospectus and any supplements and amendments thereto or to the Registration Statement as you may reasonably request.

(b) **Representatives' Review of Proposed Amendments and Supplements.** During the period when a prospectus relating to the Offered Shares is required by the Securities Act to be delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule), the Company (i) will furnish to the Representatives for review, a reasonable period of time prior to the proposed time of filing of any proposed amendment or supplement to the Registration Statement, a copy of each such amendment or supplement (other than amendments or supplements through incorporation of any report filed under the Exchange Act) and (ii) will not amend or supplement the Registration Statement (excluding any amendment or supplement through incorporation of any report filed under the Exchange Act), without the Representatives' prior written consent, which consent may not be unreasonably withheld or delayed. Prior to amending or supplementing any preliminary prospectus, the Time of Sale Prospectus or the Prospectus (excluding any amendment or supplement through incorporation of any report filed under the Exchange Act), the Company shall furnish to the Representatives for review, a reasonable amount of time prior to the time of filing or use of the proposed amendment or supplement, a copy of each such proposed amendment or supplement. The Company shall not file or use any such proposed amendment or supplement (other than amendments or supplements through incorporation of any report filed under the Exchange Act) without the Representatives' prior written consent, which consent may not be unreasonably withheld or delayed. The Company shall file with the Commission within the applicable period specified in Rule 424(b) under the Securities Act any prospectus required to be filed pursuant to such Rule.

(c) **Free Writing Prospectuses.** 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; provided that the Representatives will be deemed to have consented to the Issuer Free Writing Prospectuses listed on Schedule B hereto and any "road show that is a written communication" within the meaning of Rule 433(d)(8)(i) that has been reviewed and approved by the Representatives. 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 Securities Act to be delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule) in connection with sales of the Offered Shares (but in any event if at any time through and including the First Closing Date) 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 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 prevailing at such time, 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.

(d) **Filing of Underwriter Free Writing Prospectuses.** 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 Securities 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.

(e) ***Amendments and Supplements to Time of Sale Prospectus.*** If the Time of Sale Prospectus is being used to solicit offers to buy the Offered Shares at a time when the Prospectus is not yet available to prospective purchasers, and any event shall occur or condition exist as a result of which it is necessary to amend or supplement the Time of Sale Prospectus so that the Time of Sale Prospectus does 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 when delivered to a prospective purchaser, not misleading, or if any event shall occur or condition exist as a result of which the Time of Sale Prospectus conflicts with the information contained in the Registration Statement, or if, in the opinion of counsel for the Underwriters, it is necessary to amend or supplement the Time of Sale Prospectus to comply with applicable law, the Company shall (subject to Section 3(b) and Section 3(c) hereof) promptly prepare, file with the Commission and furnish, at its own expense, to the Underwriters and to any dealer upon request, either amendments or supplements to the Time of Sale Prospectus so that the statements in the Time of Sale 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 when delivered to a prospective purchaser, not misleading or so that the Time of Sale Prospectus, as amended or supplemented, will no longer conflict with the information contained in the Registration Statement, or so that the Time of Sale Prospectus, as amended or supplemented, will comply with applicable law.

(f) ***Certain Notifications and Required Actions.*** After the date of this Agreement and during the period when a prospectus relating to the Offered Shares is required by the Securities Act to be delivered to a prospective purchaser (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule), the Company shall promptly advise the Representatives in writing of: (i) the receipt of any comments of, or requests for additional or supplemental information from, the Commission; (ii) the time and date of any filing of any post-effective amendment to the Registration Statement or any amendment or supplement to any preliminary prospectus, the Time of Sale Prospectus, any free writing prospectus or the Prospectus; (iii) the time and date that any post-effective amendment to the Registration Statement becomes effective; and (iv) the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or any post-effective amendment thereto or any amendment or supplement to any preliminary prospectus, the Time of Sale Prospectus or the Prospectus or of any order preventing or suspending the use of any preliminary prospectus, the Time of Sale Prospectus, any free writing prospectus or the Prospectus, or of any proceedings to remove, suspend or terminate from listing or quotation the Shares from any securities exchange upon which they are listed for trading or included or designated for quotation, or of the threatening or initiation of any proceedings for any of such purposes. If the Commission shall enter any such stop order at any time, the Company will use its best efforts to obtain the lifting of such order at the earliest possible moment. Additionally, the Company agrees that it shall comply with all applicable provisions of Rule 424(b), Rule 433 and Rule 430B under the Securities Act and will use its reasonable efforts to confirm that any filings made by the Company under Rule 424(b) or Rule 433 were received in a timely manner by the Commission.

(g) ***Amendments and Supplements to the Prospectus and Other Securities Act Matters.*** If any event shall occur or condition exist as a result of which it is necessary to amend or supplement the Prospectus so that the Prospectus does 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 when the Prospectus is delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule) to a purchaser, not misleading, or if in the opinion of the Representatives or counsel for the Underwriters it is otherwise necessary to amend or supplement the Prospectus to comply with applicable law, the Company agrees (subject to Section 3(b) and Section 3(c)) hereof to promptly prepare,

file with the Commission and furnish, at its own expense, to the Underwriters and to any dealer upon request, amendments or supplements to the Prospectus so that the statements in the 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 when the Prospectus is delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule) to a purchaser, not misleading or so that the Prospectus, as amended or supplemented, will comply with applicable law. Neither the Representatives' consent to, nor delivery of, any such amendment or supplement shall constitute a waiver of any of the Company's obligations under Section 3(b) or Section 3(c).

(h) **Blue Sky Compliance.** The Company shall cooperate with the Representatives and counsel for the Underwriters to qualify or register the Offered Shares for sale under (or obtain exemptions from the application of) the state securities or blue sky laws or Canadian provincial securities laws (or other foreign laws) of those jurisdictions designated by the Representatives, shall comply with such laws and shall continue such qualifications, registrations and exemptions in effect so long as required for the distribution of the Offered Shares. The Company shall not be required to qualify as a foreign corporation or to take any action that would subject it to general service of process in any such jurisdiction where it is not presently qualified or where it would be subject to taxation as a foreign corporation. The Company will advise the Representatives promptly of the suspension of the qualification or registration of (or any such exemption relating to) the Offered Shares for offering, sale or trading in any jurisdiction or any initiation or threat of any proceeding for any such purpose, and in the event of the issuance of any order suspending such qualification, registration or exemption, the Company shall use its reasonable best efforts to obtain the withdrawal thereof at the earliest possible moment.

(i) **Use of Proceeds.** The Company shall apply the net proceeds from the sale of the Offered Shares sold by it in the manner described under the caption "Use of Proceeds" in the Registration Statement, the Time of Sale Prospectus and the Prospectus.

(j) **Transfer Agent.** The Company shall engage and maintain, at its expense, a registrar and transfer agent for the Shares.

(k) **Earnings Statement.** The Company will make generally available to its security holders and to the Representatives as soon as practicable an earnings statement (which need not be audited) covering a period of at least 12 months beginning with the first fiscal quarter of the Company commencing after the date of this Agreement that will satisfy the provisions of Section 11(a) of the Securities Act and the rules and regulations of the Commission thereunder.

(l) **Continued Compliance with Securities Laws.** The Company will comply with the Securities Act and the Exchange Act so as to permit the completion of the distribution of the Offered Shares as contemplated by this Agreement, the Registration Statement, the Time of Sale Prospectus and the Prospectus. Without limiting the generality of the foregoing, the Company will, during the period when a prospectus relating to the Offered Shares is required by the Securities Act to be delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule), file on a timely basis with the Commission and Nasdaq all reports and documents required to be filed under the Exchange Act.

(m) **Listing.** The Company will use its best efforts to list, subject to notice of issuance, the Offered Shares on Nasdaq.

(n) **Company to Provide Copy of the Prospectus in Form That May be Downloaded from the Internet.** 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 by the Underwriters in connection with the offering and sale of the Offered Shares. As used herein, the term “**electronic Prospectus**” means a form of Prospectus, 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 and the other Underwriters to offerees and purchasers of the Offered Shares; (ii) it shall disclose the same information as the paper Prospectus, 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 Prospectus 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). 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 Prospectus.

(o) **Agreement Not to Offer or Sell Additional Shares.** During the period commencing on and including the date hereof and continuing through and including the 90th day following the date of the Prospectus (such period, as extended as described below, being referred to herein as the “**Lock-up Period**”), the Company will not, without the prior written consent of the Representatives (which consent may be withheld in their sole discretion), directly or indirectly: (i) sell, offer to sell, contract to sell or lend any Shares or Related Securities (as defined below); (ii) effect any short sale, or establish or increase any “put equivalent position” (as defined in Rule 16a-1(h) under the Exchange Act) or liquidate or decrease any “call equivalent position” (as defined in Rule 16a-1(b) under the Exchange Act) of any Shares or Related Securities; (iii) pledge, hypothecate or grant any security interest in any Shares or Related Securities; (iv) in any other way transfer or dispose of any Shares or Related Securities; (v) enter into any swap, hedge or similar arrangement or agreement that transfers, in whole or in part, the economic risk of ownership of any Shares or Related Securities, regardless of whether any such transaction is to be settled in securities, in cash or otherwise; (vi) announce the offering of any Shares or Related Securities; (vii) submit or file any registration statement under the Securities Act in respect of any Shares or Related Securities (other than as contemplated by this Agreement with respect to the Offered Shares); (viii) effect a reverse stock split, recapitalization, share consolidation, reclassification or similar transaction affecting the outstanding Shares; or (ix) publicly announce the intention to do any of the foregoing; *provided, however*, that the Company may (A) effect the transactions contemplated hereby (B) issue any Shares upon the exercise of an option or warrant or the conversion of a security outstanding on the date hereof and referred to in the Registration Statement, the Time of Sale Prospectus and the Prospectus; (C) issue any Shares or options to purchase or subscribe for Shares pursuant to existing employee benefit or equity incentive plans of the Company referred to in the Registration Statement, the Time of Sale Prospectus and the Prospectus; (D) issue any Shares issued pursuant to any non-employee director share plan or dividend reinvestment plan referred to in the Registration Statement, the Time of Sale Prospectus and the Prospectus; (E) file a registration of securities to be offered under any employee benefit or equity incentive plans of the Company described in the Registration Statement, the Time of Sale Prospectus and the Prospectus; (F) enter into an agreement providing for the issuance by the Company of Shares or any security convertible into or exercisable for Shares in connection with the acquisition by the Company or any of its Subsidiaries of the securities, business, property or other assets of another person or entity or pursuant to an employee benefit or equity incentive plan assumed by the Company in connection with such acquisition, and the issuance of any such securities pursuant to any such agreement; or (G) enter into an agreement providing for the issuance of Shares or any security convertible into or exercisable for Shares in connection with joint ventures, commercial relationships or other strategic transactions, and the issuance of any such

securities pursuant to any such agreement; provided that, in the case of clauses (F) and (G), the aggregate number of ordinary shares that the Company may sell or issue or agree to sell or issue shall not exceed 5.0% of the total number of Shares issued and outstanding as of immediately prior to the completion of the transactions contemplated by this Agreement; and provided further that, in the case of clauses (B) through (F), holders of such Shares or options agree in writing with the Underwriters not to sell, offer, dispose of or otherwise transfer any such Shares or options during such Lock-up Period without the prior written consent of the Representatives (which consent may be withheld in its sole discretion). For purposes of the foregoing, “**Related Securities**” shall mean any options or warrants or other rights to acquire Shares or any securities exchangeable or exercisable for or convertible into Shares, or to acquire other securities or rights ultimately exchangeable or exercisable for, or convertible into, Shares.

(p) **Future Reports to the Representatives.** During the period of five years hereafter, the Company will furnish to the Representatives, c/o Jefferies, at 520 Madison Avenue, New York, New York 10022, Attention: Global Head of Syndicate; and c/o Stifel, at 787 7th Avenue, 11th Floor, New York, New York 10019, Attention: Equity Capital Markets: (i) as soon as practicable after the end of each fiscal year, copies of the Annual Report of the Company containing the balance sheet of the Company as of the close of such fiscal year and statements of income, shareholders’ equity and cash flows for the year then ended and the opinion thereon of the Company’s independent public or certified public accountants; (ii) as soon as practicable after the filing thereof, copies of each proxy statement, Annual Report on Form 10-K, Quarterly Report on Form 10-Q, Current Report on Form 8-K or other report filed by the Company with the Commission, FINRA or any securities exchange; and (iii) as soon as available, copies of any report or communication of the Company furnished or made available generally to holders of its share capital; *provided, however*, that the requirements of this Section 3(p) shall be satisfied to the extent that such reports, statement, communications, financial statements or other documents are available on EDGAR.

(q) **Investment Limitation.** The Company shall not invest or otherwise use the proceeds received by the Company from its sale of the Offered Shares in such a manner as would require the Company or any of its subsidiaries to register as an investment company under the Investment Company Act.

(r) **No Stabilization or Manipulation; Compliance with Regulation M.** The Company will not take, and will ensure that no affiliate of the Company will take, directly or indirectly, without giving effect to activities by the Underwriters any action designed to or that might cause or result in stabilization or manipulation of the price of the Shares or any reference security with respect to the Shares, whether to facilitate the sale or resale of the Offered Shares or otherwise, and the Company will, and shall cause each of its affiliates to, comply with all applicable provisions of Regulation M.

(s) **Enforce Lock-Up Agreements.** During the Lock-up Period, the Company will enforce all agreements between the Company and any of its securityholders that restrict or prohibit, expressly or in operation, the offer, sale or transfer of Shares or Related Securities or any of the other actions restricted or prohibited under the terms of the form of Lock-up Agreement. In addition, the Company will direct the transfer agent to place stop transfer restrictions upon any such securities of the Company that are bound by such “lock-up” agreements for the duration of the periods contemplated in such agreements, including, without limitation, “lock-up” agreements entered into by the Company’s officers and directors pursuant to Section 6(j) hereof.

(t) **Company to Provide Interim Financial Statements.** Prior to the First Closing Date and each applicable Option Closing Date, the Company will furnish the Underwriters, as soon as they have been prepared by or are available to the Company, a copy of any unaudited interim financial statements of the Company for any period subsequent to the period covered by the most recent financial statements appearing in the Registration Statement and the Prospectus.

(u) **Amendments and Supplements to Permitted Section 5(d) Communications.** If at any time following the distribution of any Permitted Section 5(d) Communication, there occurred or occurs an event or development as a result of which such Permitted Section 5(d) Communication 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 existing at that subsequent time, not misleading, the Company will promptly notify the Representatives and will promptly amend or supplement, at its own expense, such Permitted Section 5(d) Communication to eliminate or correct such untrue statement or omission.

(v) **Emerging Growth Company Status.** The Company will promptly notify the Representatives if the Company ceases to be an Emerging Growth Company at any time prior to the later of (i) the time when a prospectus relating to the Offered Shares is not required by the Securities Act to be delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule) and (ii) the expiration of the Lock-Up Period (as defined herein).

Section 4. Payment of Expenses. The Company agrees to pay all costs, fees and expenses incurred in connection with the performance of its obligations hereunder and in connection with the transactions contemplated hereby, including without limitation (i) all expenses incident to the issuance and delivery of the Offered Shares (including all printing and engraving costs), (ii) all fees and expenses of the registrar and transfer agent of the Shares, (iii) all necessary issue, transfer and other stamp taxes in connection with the issuance and sale of the Offered Shares to the Underwriters, (iv) all fees and expenses of the Company's counsel, independent public or certified public accountants and other advisors, (v) all costs and expenses incurred in connection with the preparation, printing, filing, shipping and distribution of the Registration Statement (including financial statements, exhibits, schedules, consents and certificates of experts), the Time of Sale Prospectus, the Prospectus, each free writing prospectus prepared by or on behalf of, used by, or referred to by the Company, and each preliminary prospectus, each Permitted Section 5(d) Communication, and all amendments and supplements thereto, and this Agreement, (vi) all filing fees, attorneys' fees and expenses incurred by the Company or the Underwriters in connection with qualifying or registering (or obtaining exemptions from the qualification or registration of) all or any part of the Offered Shares for offer and sale under the state securities or blue sky laws or the provincial securities laws of Canada, and, if requested by the Representatives, preparing and printing a "Blue Sky Survey" or memorandum and a "Canadian wrapper", and any supplements thereto, advising the Underwriters of such qualifications, registrations and exemptions, in an amount not to exceed \$7,500, (vii) the costs, fees and expenses incurred by the Underwriters in connection with determining their compliance with the rules and regulations of FINRA related to the Underwriters' participation in the offering and distribution of the Offered Shares, including any related filing fees and the legal fees of, and disbursements by, counsel to the Underwriters, in an amount not to exceed \$15,000 in the aggregate, (viii) the costs and expenses of the Company relating to investor presentations on any "road show", any Permitted Section 5(d) Communication or any Section 5(d) Oral Communication undertaken in connection with the offering of the Offered Shares, including, without limitation, expenses associated with the preparation or dissemination of any electronic road show, expenses associated with the production of road show slides and graphics, fees and expenses of any consultants engaged in connection with the road show presentations with the prior approval of the Company, travel and lodging expenses of the Representatives, the employees and officers of the Company and any such consultants, and 50% of the cost of any aircraft chartered in connection with the road show, the remaining 50% of the cost of such aircraft paid by the Underwriters, (ix) the fees and expenses associated with listing the Offered Shares on Nasdaq, and (x) all other fees, costs and expenses of the nature referred to in Item 14 of Part II of the Registration Statement. Any such amount payable to the Underwriters may be deducted from the purchase price for the Offered Shares. Except as provided in this Section 4 or in Section 7, Section 9 or Section 10 hereof, the Underwriters shall pay their own expenses, including the fees and disbursements of their counsel.

Section 5. Covenant of the Underwriters. Each Underwriter severally and not jointly covenants with the Company not to take any action that would result in the Company being required to file with the Commission pursuant to Rule 433(d) under the Securities Act a free writing prospectus prepared by or on behalf of such Underwriter that otherwise would not, but for such actions, be required to be filed by the Company under Rule 433(d).

Section 6. Conditions of the Obligations of the Underwriters. The respective obligations of the several Underwriters hereunder to purchase and pay for the Offered Shares as provided herein on the First Closing Date and, with respect to the Optional Shares, each Option Closing Date, shall be subject to the accuracy of the representations and warranties on the part of the Company set forth in Section 1 hereof as of the date hereof and as of the First Closing Date as though then made and, with respect to the Optional Shares, as of each Option Closing Date as though then made, to the timely performance by the Company of its covenants and other obligations hereunder, and to each of the following additional conditions:

(a) **Comfort Letter.** On the date hereof, the Representatives shall have received from Ernst & Young LLP, independent registered public accountants for the Company, a letter dated the date hereof addressed to the Underwriters, in form and substance satisfactory to the Representatives, containing statements and information of the type ordinarily included in accountant's "comfort letters" to underwriters, delivered according to Statement of Auditing Standards No. 72 (or any successor bulletin), with respect to the audited and unaudited financial statements and certain financial information contained in the Registration Statement, the Time of Sale Prospectus, and each free writing prospectus, if any.

(b) **Compliance with Registration Requirements; No Stop Order; No Objection from FINRA.** For the period from and after the date of this Agreement and through and including the First Closing Date and, with respect to any Optional Shares purchased after the First Closing Date, each Option Closing Date:

(i) The Company shall have filed the Prospectus with the Commission (including the information required by Rule 430A under the Securities Act) in the manner and within the time period required by Rule 424(b) under the Securities Act; or the Company shall have filed a post-effective amendment to the Registration Statement containing the information required by such Rule 430A, and such post-effective amendment shall have become effective.

(ii) No stop order suspending the effectiveness of the Registration Statement or any post-effective amendment to the Registration Statement shall be in effect, and no proceedings for such purpose shall have been instituted or threatened by the Commission.

(iii) If a filing has been made with FINRA, FINRA shall have raised no objection to the fairness and reasonableness of the underwriting terms and arrangements.

(c) **No Material Adverse Effect or Ratings Agency Change.** For the period from and after the date of this Agreement and through and including the First Closing Date and, with respect to any Optional Shares purchased after the First Closing Date, each Option Closing Date:

(i) in the judgment of the Representatives there shall not have occurred any Material Adverse Effect; and

(ii) 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 securities of the Company or any

of its subsidiaries by any “nationally recognized statistical rating organization” as that term is used in Rule 15c3-1(c)(2)(vi)(F) under the Exchange Act.

(d) **Opinion of U.S. Counsel for the Company.** On each of the First Closing Date and each Option Closing Date, the Representatives shall have received the opinion and negative assurance letter of Reed Smith LLP, counsel for the Company, in form and substance satisfactory to the Representatives, dated as of such date.

(e) **Opinion of Irish Counsel for the Company.** On each of the First Closing Date and each Option Closing Date, the Representatives shall have received the opinion of Arthur Cox, local counsel for the Company, in form and substance satisfactory to the Representatives, dated as of such date.

(f) **Opinion of Intellectual Property Counsel for the Company.** On each of the First Closing Date and each Option Closing Date, the Representatives shall have received the opinion of Reed Smith LLP, counsel for the Company with respect to certain intellectual property matters, in form and substance satisfactory to the Representatives, dated as of such date.

(g) **Opinion of Counsel for the Underwriters.** On each of the First Closing Date and each Option Closing Date the Representatives shall have received the opinion and negative assurance letter of Cooley LLP, counsel for the Underwriters in connection with the offer and sale of the Offered Shares, in form and substance satisfactory to the Representatives, dated as of such date.

(h) **Officers' Certificate.** On each of the First Closing Date and each Option Closing Date, the Representatives shall have received a certificate executed by the Chief Executive Officer or President of the Company and the Chief Financial Officer of the Company, dated as of such date, to the effect set forth in Section 6(b)(ii) and further to the effect that:

(i) for the period from and including the date of this Agreement through and including such date, there has not occurred any Material Adverse Effect;

(ii) the representations, warranties and covenants of the Company set forth in Section 1 of this Agreement are true and correct with the same force and effect as though expressly made on and as of such date;

(iii) the Company has complied with all the agreements hereunder and satisfied all the conditions on its part to be performed or satisfied hereunder at or prior to such date; and

(iv) no stop order suspending the effectiveness of the Registration Statement or any post-effective amendments to the Registration Statement is in effect, and no proceedings for such purpose have been instituted or threatened by the Commission.

(i) **Bring-down Comfort Letter.** On each of the First Closing Date and each Option Closing Date the Representatives shall have received from Ernst & Young LLP, independent registered public accountants for the Company, a letter dated such date, in form and substance satisfactory to the Representatives, which letter shall: (i) reaffirm the statements made in the letter furnished by them pursuant to Section 6(a), except that the specified date referred to therein for the carrying out of procedures shall be no more than three business days prior to the First Closing Date or the applicable Option Closing Date, as the case may be; and (ii) cover certain financial information contained in the Prospectus.

(j) **Lock-Up Agreements.** On or prior to the date hereof, the Company shall have furnished to the Representatives an agreement in the form of Exhibit A hereto from each of the persons listed on

Exhibit B hereto, and each such agreement shall be in full force and effect on each of the First Closing Date and each Option Closing Date.

(k) **Rule 462(b) Registration Statement.** In the event that a Rule 462(b) Registration Statement is filed in connection with the offering contemplated by this Agreement, such Rule 462(b) Registration Statement shall have been filed with the Commission on the date of this Agreement and shall have become effective automatically upon such filing.

(l) **Nasdaq.** The Company shall have submitted a listing of additional shares notification form to Nasdaq with respect to the Offered Shares and shall have received no objection thereto from Nasdaq.

(m) **CFO Certificate.** On the date of this Agreement and on the First Closing Date or the applicable Option Closing Date, as the case may be, the Company shall have furnished to the Representatives a certificate, dated the respective dates of delivery thereof and addressed to the Underwriters, of its chief financial officer with respect to certain financial data contained in the Time of Sale Prospectus and the Prospectus, providing “management comfort” with respect to such information, in form and substance reasonably satisfactory to the Representatives.

(n) **Additional Documents.** On or before each of the First Closing Date and each Option Closing Date, the Representatives and counsel for the Underwriters shall have received such information, documents and opinions as they may reasonably request for the purposes of enabling them to pass upon the issuance and sale of the Offered Shares as contemplated herein, or in order to evidence the accuracy of any of the representations and warranties, or the satisfaction of any of the conditions or agreements, herein contained; and all proceedings taken by the Company in connection with the issuance and sale of the Offered Shares as contemplated herein and in connection with the other transactions contemplated by this Agreement shall be satisfactory in form and substance to the Representatives and counsel for the Underwriters.

If any condition specified in this Section 6 is not satisfied when and as required to be satisfied, this Agreement may be terminated by the Representatives by notice from the Representatives to the Company at any time on or prior to the First Closing Date and, with respect to the Optional Shares, at any time on or prior to the applicable Option Closing Date, which termination shall be without liability on the part of any party to any other party, except that Section 4, Section 7, Section 9 and Section 10 shall at all times be effective and shall survive such termination.

Section 7. Reimbursement of Underwriters’ Expenses. If this Agreement is terminated by the Representatives pursuant to Section 6, Section 11 or Section 12, or if the sale to the Underwriters of the Offered Shares on the First Closing Date is not consummated because of any refusal, inability or failure on the part of the Company to perform any agreement herein or to comply with any provision hereof, the Company agrees to reimburse the Representatives and the other Underwriters (or such Underwriters as have terminated this Agreement with respect to themselves), severally, upon demand for all out-of-pocket expenses that shall have been reasonably incurred by the Representatives and the Underwriters in connection with the proposed purchase and the offering and sale of the Offered Shares, including, but not limited to, fees and disbursements of counsel, printing expenses, travel expenses, postage, facsimile and telephone charges; provided, however, that if this Agreement is terminated pursuant to Section 11, the Company shall only be required to reimburse such expenses, fees and disbursements of or attributable to, the Underwriters that have not failed to purchase the Offered Shares that they have agreed to purchase hereunder.

Section 8. Effectiveness of this Agreement. This Agreement shall become effective upon the execution and delivery hereof by the parties hereto.

Section 9. Indemnification.

(a) **Indemnification of the Underwriters.** The Company agrees to indemnify and hold harmless each Underwriter, its affiliates, directors, officers, employees and agents, and each person, if any, who controls any Underwriter within the meaning of the Securities Act or the Exchange Act against any loss, claim, damage, liability or expense, as incurred, to which such Underwriter or such affiliate, director, officer, employee, agent or controlling person may become subject, under the Securities Act, the Exchange Act, other federal or state statutory law or regulation, or the laws or regulations of foreign jurisdictions where Offered Shares have been offered or sold or at common law or otherwise (including in settlement of any litigation, if such settlement is effected with the written consent of the Company), insofar as such loss, claim, damage, liability or expense (or actions in respect thereof as contemplated below) arises out of or is based upon (i) any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement, or any amendment thereto, or the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading; or (ii) any untrue statement or alleged untrue statement of a material fact included in any preliminary prospectus, the Time of Sale Prospectus, any free writing prospectus that the Company has used, referred to or filed, or is required to file, pursuant to Rule 433(d) of the Securities Act, any Marketing Material, any Section 5(d) Written Communication or the Prospectus (or any amendment or supplement to the foregoing), or the omission or alleged omission to state therein a material fact necessary in order to make the statements, in the light of the circumstances under which they were made, not misleading; or (iii) any act or failure to act or any alleged act or failure to act by any Underwriter in connection with, or relating in any manner to, the Shares or the offering contemplated hereby, and which is included as part of or referred to in any loss, claim, damage, liability or action arising out of or based upon any matter covered by clause (i) or (ii) above; and to reimburse each Underwriter and each such affiliate, director, officer, employee, agent and controlling person for any and all reasonable and documented expenses (including the reasonable and documented fees and disbursements of counsel chosen by the Underwriter) as such expenses are incurred by such Underwriter or such affiliate, director, officer, employee, agent or controlling person in connection with investigating, defending, settling, compromising or paying any such loss, claim, damage, liability, expense or action; *provided, however*, that the foregoing indemnity agreement shall not apply to any loss, claim, damage, liability or expense to the extent, but only to the extent, arising out of or based upon any untrue statement or alleged untrue statement or omission or alleged omission made in reliance upon and in conformity with information relating to any Underwriter furnished to the Company by the Representatives in writing expressly for use in the Registration Statement, any preliminary prospectus, the Time of Sale Prospectus, any such free writing prospectus, any Marketing Material, any Section 5(d) Written Communication or the Prospectus (or any amendment or supplement thereto), it being understood and agreed that the only such information consists of the information described in Section 9(b) below. The indemnity agreement set forth in this Section 9(a) shall be in addition to any liabilities that the Company may otherwise have.

(b) **Indemnification of the Company, its Directors and Officers.** Each Underwriter agrees, severally and not jointly, to indemnify and hold harmless the Company, each of its directors, each of its officers who signed the Registration Statement and each person, if any, who controls the Company within the meaning of the Securities Act or the Exchange Act, against any loss, claim, damage, liability or expense, as incurred, to which the Company, or any such director, officer or controlling person may become subject, under the Securities Act, the Exchange Act, or other federal or state statutory law or regulation, or at common law or otherwise (including in settlement of any litigation, if such settlement is effected with the written consent of such Underwriter), insofar as such loss, claim, damage, liability or expense (or actions in respect thereof as contemplated below) arises out of or is based upon (i) any untrue

statement or alleged untrue statement of a material fact contained in the Registration Statement, or any amendment thereto, or any omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading or (ii) any untrue statement or alleged untrue statement of a material fact included in any preliminary prospectus, the Time of Sale 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 Securities Act, any Section 5(d) Written Communication or the Prospectus (or any such amendment or supplement) or the omission or alleged omission to state therein a material fact necessary in order to make the statements, in the light of the circumstances under which they were made, not misleading, in each case to the extent, but only to the extent, that such untrue statement or alleged untrue statement or omission or alleged omission was made in the Registration Statement, such preliminary prospectus, the Time of Sale Prospectus, such free writing prospectus, such Section 5(d) Written Communication or the Prospectus (or any such amendment or supplement), in reliance upon and in conformity with information relating to such Underwriter furnished to the Company by the Representatives in writing expressly for use therein; and to reimburse the Company, or any such director, officer or controlling person for any and all reasonable and documented expenses (including the reasonable and documented fees and disbursements of counsel chosen by the Company) as such expenses are incurred by the Company, or any such director, officer or controlling person in connection with investigating, defending, settling, compromising or paying any such loss, claim, damage, liability, expense or action. The Company hereby acknowledges that the only information that the Representatives have furnished to the Company expressly for use in the Registration Statement, any preliminary prospectus, the Time of Sale Prospectus, any free writing prospectus that the Company has filed, or is required to file, pursuant to Rule 433(d) of the Securities Act, any Section 5(d) Written Communication or the Prospectus (or any amendment or supplement to the foregoing) are the statements set forth in the first sentence of the third paragraph under the caption "Underwriting," the first sentence of the first paragraph under the section entitled "Commission and Expenses," the first sentence of the first paragraph under the section entitled "Stabilization," the first sentence of the first paragraph under the section entitled "Electronic Distribution" and the first paragraph and the first sentence of the second paragraph under the section entitled "Other Activities and Relationships," each under the caption "Underwriting" in the Preliminary Prospectus and the Prospectus. The indemnity agreement set forth in this Section 9(b) shall be in addition to any liabilities that each Underwriter may otherwise have.

(c) **Notifications and Other Indemnification Procedures.** Promptly after receipt by an indemnified party under this Section 9 of notice of the commencement of any action, such indemnified party will, if a claim in respect thereof is to be made against an indemnifying party under this Section 9, notify the indemnifying party in writing of the commencement thereof, but the omission to so notify the indemnifying party will not relieve the indemnifying party from any liability which it may have to any indemnified party to the extent the indemnifying party is not materially prejudiced as a proximate result of such failure and shall not in any event relieve the indemnifying party from any liability that it may have otherwise than on account of this indemnity agreement. In case any such action is brought against any indemnified party and such indemnified party seeks or intends to seek indemnity from an indemnifying party, the indemnifying party will be entitled to participate in, and, to the extent that it shall elect, jointly with all other indemnifying parties similarly notified, by written notice delivered to the indemnified party promptly after receiving the aforesaid notice from such indemnified party, to assume the defense thereof with one firm of counsel reasonably satisfactory to such indemnified party; *provided, however,* that if the defendants in any such action include both the indemnified party and the indemnifying party and the indemnified party shall have reasonably concluded that a conflict may arise between the positions of the indemnifying party and the indemnified party in conducting the defense of any such action or that there may be legal defenses available to it and/or other indemnified parties which are different from or additional to those available to the indemnifying party, the indemnified party or parties shall have the right to select one firm of separate counsel to assume such legal defenses and to otherwise participate in the defense of such action on behalf of such indemnified party or parties. Upon receipt of notice from the

indemnifying party to such indemnified party of such indemnifying party's election to so assume the defense of such action and approval by the indemnified party of counsel, the indemnifying party will not be liable to such indemnified party under this Section 9 for any legal or other expenses subsequently incurred by such indemnified party in connection with the defense thereof unless (i) the indemnified party shall have employed separate counsel in accordance with the proviso to the preceding sentence (it being understood, however, that the indemnifying party shall not be liable for the fees and expenses of more than one separate counsel (together with local counsel), representing the indemnified parties who are parties to such action), which counsel (together with any local counsel) for the indemnified parties shall be selected by the Representatives (in the case of counsel for the indemnified parties referred to in Section 9(a) above) or by the Company (in the case of counsel for the indemnified parties referred to in Section 9(b) above)) or (ii) the indemnifying party shall not have employed counsel reasonably satisfactory to the indemnified party to represent the indemnified party within a reasonable time after notice of commencement of the action or (iii) the indemnifying party has authorized in writing the employment of counsel for the indemnified party at the expense of the indemnifying party, in each of which cases the fees and expenses of counsel shall be at the expense of the indemnifying party and shall be paid as they are incurred.

(d) Settlements. The indemnifying party under this Section 9 shall not be liable for any settlement of any proceeding effected without its written consent, but if settled with such consent or if there be a final judgment for the plaintiff, the indemnifying party agrees to indemnify the indemnified party against any loss, claim, damage, liability or expense by reason of such settlement or judgment. Notwithstanding the foregoing sentence, if at any time an indemnified party shall have requested an indemnifying party to reimburse the indemnified party for the reasonable and documented fees and expenses of counsel as contemplated by Section 9(c) hereof, the indemnifying party shall be liable for any settlement of any proceeding effected without its written consent if (i) such settlement is entered into more than 30 days after receipt by such indemnifying party of the aforesaid request and (ii) such indemnifying party shall not have reimbursed the indemnified party in accordance with such request prior to the date of such settlement. No indemnifying party shall, without the prior written consent of the indemnified party, effect any settlement, compromise or consent to the entry of judgment in any pending or threatened action, suit or proceeding in respect of which any indemnified party is or could have been a party and indemnity was or could have been sought hereunder by such indemnified party, unless such settlement, compromise or consent includes an unconditional release of such indemnified party from all liability on claims that are the subject matter of such action, suit or proceeding and does not include an admission of fault or culpability or a failure to act by or on behalf of such indemnified party.

Section 10. Contribution. If the indemnification provided for in Section 9 is for any reason held to be unavailable to or otherwise insufficient to hold harmless an indemnified party in respect of any losses, claims, damages, liabilities or expenses referred to therein, then each indemnifying party shall contribute to the aggregate amount paid or payable by such indemnified party, as incurred, as a result of any losses, claims, damages, liabilities or expenses referred to therein (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 Offered Shares pursuant to this Agreement or (ii) if the allocation provided by clause (i) above is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) above but also the relative fault of the Company, on the one hand, and the Underwriters, on the other hand, in connection with the statements or omissions which resulted in such losses, claims, damages, liabilities or expenses, 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 hand, in connection with the offering of the Offered Shares pursuant to this Agreement shall be deemed to be in the same respective proportions as the total proceeds from the offering of the Offered Shares pursuant to this Agreement (before deducting expenses) received by the Company, and the total underwriting discounts and commissions received by the Underwriters, in each case as set forth on the front cover page of the Prospectus, bear to the aggregate initial public offering

price of the Offered Shares as set forth on such cover. The relative fault of the Company, on the one hand, and the Underwriters, on the other hand, shall be determined by reference to, among other things, whether any such untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact relates to information supplied by the Company, on the one hand, or the Underwriters, on the other hand, 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, claims, damages, liabilities and expenses referred to above shall be deemed to include, subject to the limitations set forth in Section 9(c), any reasonable and documented legal or other fees or expenses reasonably incurred by such party in connection with investigating or defending any action or claim. The provisions set forth in Section 9(c) with respect to notice of commencement of any action shall apply if a claim for contribution is to be made under this Section 10; *provided, however*, that no additional notice shall be required with respect to any action for which notice has been given under Section 9(c) for purposes of indemnification.

The Company and the Underwriters agree that it would not be just and equitable if contribution pursuant to this Section 10 were determined by pro rata allocation (even if the Underwriters were treated as one entity for such purpose) or by any other method of allocation which does not take account of the equitable considerations referred to in this Section 10.

Notwithstanding the provisions of this Section 10, no Underwriter shall be required to contribute any amount in excess of the underwriting discounts and commissions received by such Underwriter in connection with the Offered Shares underwritten by it and distributed to the public. No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. The Underwriters' obligations to contribute pursuant to this Section 10 are several, and not joint, in proportion to their respective underwriting commitments as set forth opposite their respective names on Schedule A. For purposes of this Section 10, each affiliate, director, officer, employee and agent of an Underwriter and each person, if any, who controls an Underwriter within the meaning of the Securities Act or the Exchange Act shall have the same rights to contribution as such Underwriter, and each director of the Company, each officer of the Company who signed the Registration Statement, and each person, if any, who controls the Company within the meaning of the Securities Act and the Exchange Act shall have the same rights to contribution as the Company.

Section 11. Default of One or More of the Several Underwriters. If, on the First Closing Date or any Option Closing Date any one or more of the several Underwriters shall fail or refuse to purchase Offered Shares that it or they have agreed to purchase hereunder on such date, and the aggregate number of Offered Shares which such defaulting Underwriter or Underwriters agreed but failed or refused to purchase does not exceed 10% of the aggregate number of the Offered Shares to be purchased on such date, the Representatives may make arrangements satisfactory to the Company for the purchase of such Offered Shares by other persons, including any of the Underwriters, but if no such arrangements are made by such date, the other Underwriters shall be obligated, severally and not jointly, in the proportions that the number of Firm Shares set forth opposite their respective names on Schedule A bears to the aggregate number of Firm Shares set forth opposite the names of all such non-defaulting Underwriters, or in such other proportions as may be specified by the Representatives with the consent of the non-defaulting Underwriters, to purchase the Offered Shares which such defaulting Underwriter or Underwriters agreed but failed or refused to purchase on such date. If, on the First Closing Date or any Option Closing Date any one or more of the Underwriters shall fail or refuse to purchase Offered Shares and the aggregate number of Offered Shares with respect to which such default occurs exceeds 10% of the aggregate number of Offered Shares to be purchased on such date, and arrangements satisfactory to the Representatives and the Company for the purchase of such Offered Shares are not made within 48 hours after such default, this

Agreement shall terminate without liability of any party to any other party except that the provisions of Section 4, Section 7, Section 9 and Section 10 shall at all times be effective and shall survive such termination. In any such case either the Representatives or the Company shall have the right to postpone the First Closing Date or the applicable Option Closing Date, as the case may be, but in no event for longer than seven days in order that the required changes, if any, to the Registration Statement and the Prospectus or any other documents or arrangements may be effected.

As used in this Agreement, the term “**Underwriter**” shall be deemed to include any person substituted for a defaulting Underwriter under this Section 11. Any action taken under this Section 11 shall not relieve any defaulting Underwriter from liability in respect of any default of such Underwriter under this Agreement.

Section 12. Termination of this Agreement. Prior to the purchase of the Firm Shares by the Underwriters on the First Closing Date, this Agreement may be terminated by the Representatives by notice given to the Company if at any time: (i) trading or quotation in any of the Company’s securities shall have been suspended or limited by the Commission or by the Nasdaq, or trading in securities generally on either Nasdaq or the New York Stock Exchange shall have been suspended or limited, or minimum or maximum prices shall have been generally established on any of such stock exchanges; (ii) a general banking moratorium shall have been declared by any of federal, New York or Irish authorities; (iii) there shall have occurred any outbreak or escalation of national or international hostilities or any crisis or calamity, or any change in the United States or international financial markets, or any substantial change or development involving a prospective substantial change in United States’ or international political, financial or economic conditions, as in the judgment of the Representatives is material and adverse and makes it impracticable to market the Offered Shares in the manner and on the terms described in the Time of Sale Prospectus or the Prospectus or to enforce contracts for the sale of securities; (iv) in the judgment of the Representatives there shall have occurred any Material Adverse Effect; or (v) the Company shall have sustained a loss by strike, fire, flood, earthquake, accident or other calamity of such character as in the judgment of the Representatives may interfere materially with the conduct of the business and operations of the Company regardless of whether or not such loss shall have been insured. Any termination pursuant to this Section 12 shall be without liability on the part of (a) the Company to any Underwriter, except that the Company shall be obligated to reimburse the expenses of the Representatives and the Underwriters pursuant to Section 4 or Section 7 hereof or (b) any Underwriter to the Company; *provided, however*, that the provisions of Section 9 and Section 10 shall at all times be effective and shall survive such termination.

Section 13. No Advisory or Fiduciary Relationship. The Company acknowledges and agrees that (a) the purchase and sale of the Offered Shares pursuant to this Agreement, including the determination of the public offering price of the Offered Shares and any related discounts and commissions, is an arm’s-length commercial transaction between the Company, on the one hand, and the several Underwriters, on the other hand, (b) in connection with the offering contemplated hereby and the process leading to such transaction, each Underwriter is and has been acting solely as a principal and is not the agent or fiduciary of the Company, or its shareholders, creditors, employees or any other party, (c) no Underwriter has assumed or will assume an advisory or fiduciary responsibility in favor of the Company with respect to the offering contemplated hereby or the process leading thereto (irrespective of whether such Underwriter has advised or is currently advising the Company on other matters) and no Underwriter has any obligation to the Company with respect to the offering contemplated hereby except the obligations expressly set forth in this Agreement, (d) the Underwriters and their respective affiliates may be engaged in a broad range of transactions that involve interests that differ from those of the Company, and (e) the Underwriters have not provided any legal, accounting, regulatory or tax advice with respect to the offering contemplated hereby and the Company has consulted its own legal, accounting, regulatory and tax advisors to the extent it deemed appropriate.

Section 14. Representations and Indemnities to Survive Delivery. The respective indemnities, agreements, representations, warranties and other statements of the Company, of its officers and of the several Underwriters set forth in or made pursuant to this Agreement will remain in full force and effect, regardless of any investigation made by or on behalf of any Underwriter or the Company or any of its or their partners, officers or directors or any controlling person, as the case may be, and, anything herein to the contrary notwithstanding, will survive delivery of and payment for the Offered Shares sold hereunder and any termination of this Agreement.

Section 15. Notices. All communications hereunder shall be in writing and shall be mailed, hand delivered or telecopied and confirmed to the parties hereto as follows:

If to the Representatives: Jefferies LLC
520 Madison Avenue
New York, New York 10022
Facsimile: (646) 619-4437
Attention: General Counsel

Stifel, Nicolaus & Company, Incorporated
787 7th Avenue, 11th Floor
New York, New York 10019
Attention: General Counsel

with a copy to: Cooley LLP
55 Hudson Yards
New York, New York 10001
Attention: Brent Siler and Alison Haggerty

If to the Company: Strongbridge Biopharma plc
900 Northbrook Drive, Suite 200
Trevose, Pennsylvania 19053
Attention: Chief Legal Officer

with a copy to: Reed Smith LLP
599 Lexington Avenue
New York, New York 10022
Attention: Aron Izower

Any party hereto may change the address for receipt of communications by giving written notice to the others.

Section 16. Successors. This Agreement will inure to the benefit of and be binding upon the parties hereto, including any substitute Underwriters pursuant to Section 11 hereof, and to the benefit of the affiliates, directors, officers, employees, agents and controlling persons referred to in Section 9 and Section 10, and in each case their respective successors, and no other person will have any right or obligation hereunder. The term “successors” shall not include any purchaser of the Offered Shares as such from any of the Underwriters merely by reason of such purchase.

Section 17. Partial Unenforceability. The invalidity or unenforceability of any section, paragraph or provision of this Agreement shall not affect the validity or enforceability of any other

section, paragraph or provision hereof. If any section, paragraph or provision of this Agreement is for any reason determined to be invalid or unenforceable, there shall be deemed to be made such minor changes (and only such minor changes) as are necessary to make it valid and enforceable.

Section 18. Recognition of the U.S. Special Resolution Regimes.

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

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

For purposes of this Agreement, (A) “**BHC Act Affiliate**” has the meaning assigned to the term “affiliate” in, and shall be interpreted in accordance with, 12 U.S.C. § 1841(k); (B) “**Covered Entity**” means any of the following: (i) a “covered entity” as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 252.82(b); (ii) a “covered bank” as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 47.3(b); or (iii) a “covered FSI” as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 382.2(b); (C) “**Default Right**” has the meaning assigned to that term in, and shall be interpreted in accordance with, 12 C.F.R. §§ 252.81, 47.2 or 382.1, as applicable; and (D) “**U.S. Special Resolution Regime**” means each of (i) the Federal Deposit Insurance Act and the regulations promulgated thereunder and (ii) Title II of the Dodd-Frank Wall Street Reform and Consumer Protection Act and the regulations promulgated thereunder.

Section 19. Governing Law Provisions. This Agreement shall be governed by and construed in accordance with the internal laws of the State of New York applicable to agreements made and to be performed in such state. Any legal suit, action or proceeding arising out of or based upon this Agreement or the transactions contemplated hereby (“**Related Proceedings**”) may be instituted in the federal courts of the United States of America located in the Borough of Manhattan in the City of New York or the courts of the State of New York in each case located in the Borough of Manhattan in the City of New York (collectively, the “**Specified Courts**”), and each party irrevocably submits to the exclusive jurisdiction (except for proceedings instituted in regard to the enforcement of a judgment of any such court (a “**Related Judgment**”), as to which such jurisdiction is non-exclusive) of such courts in any such suit, action or proceeding. Service of any process, summons, notice or document by mail to such party’s address set forth above shall be effective service of process for any suit, action or other proceeding brought in any such court. The parties irrevocably and unconditionally waive any objection to the laying of venue of any suit, action or other proceeding in the Specified Courts and irrevocably and unconditionally waive and agree not to plead or claim in any such court that any such suit, action or other proceeding brought in any such court has been brought in an inconvenient forum. The Company has irrevocably appointed an agent to receive service of process or other legal summons for purposes of any such suit, action or proceeding that may be instituted in any state or federal court in the Borough of Manhattan in the City of New York.

With respect to any Related Proceeding, each party irrevocably waives, to the fullest extent permitted by applicable law, all immunity (whether on the basis of sovereignty or otherwise) from jurisdiction, service of process, attachment (both before and after judgment) and execution to which it

might otherwise be entitled in the Specified Courts, and with respect to any Related Judgment, each party waives any such immunity in the Specified Courts or any other court of competent jurisdiction, and will not raise or claim or cause to be pleaded any such immunity at or in respect of any such Related Proceeding or Related Judgment, including, without limitation, any immunity pursuant to the United States Foreign Sovereign Immunities Act of 1976, as amended.

Section 20. General Provisions. This Agreement constitutes the entire agreement of the parties to this Agreement and supersedes all prior written or oral and all contemporaneous oral agreements, understandings and negotiations with respect to the subject matter hereof. This Agreement may be executed in two or more counterparts, each one of which shall be an original, with the same effect as if the signatures thereto and hereto were upon the same instrument. This Agreement may not be amended or modified unless in writing by all of the parties hereto, and no condition herein (express or implied) may be waived unless waived in writing by each party whom the condition is meant to benefit. The section headings herein are for the convenience of the parties only and shall not affect the construction or interpretation of this Agreement.

Each of the parties hereto acknowledges that it is a sophisticated business person who was adequately represented by counsel during negotiations regarding the provisions hereof, including, without limitation, the indemnification provisions of Section 9 and the contribution provisions of Section 10, and is fully informed regarding said provisions. Each of the parties hereto further acknowledges that the provisions of Section 9 and Section 10 hereof fairly allocate the risks in light of the ability of the parties to investigate the Company, its affairs and its business in order to assure that adequate disclosure has been made in the Registration Statement, any preliminary prospectus, the Time of Sale Prospectus, each free writing prospectus and the Prospectus (and any amendments and supplements to the foregoing), as contemplated by the Securities Act and the Exchange Act.

If the foregoing is in accordance with your understanding of our agreement, kindly sign and return to the Company the enclosed copies hereof, whereupon this instrument, along with all counterparts hereof, shall become a binding agreement in accordance with its terms.

Very truly yours,

STRONGBRIDGE BIOPHARMA PLC

By: /s/ Robert Lutz
Name: Robert Lutz
Title: Chief Financial Officer

[Signature Page to Underwriting Agreement]

The foregoing Underwriting Agreement is hereby confirmed and accepted by the Representatives in New York, New York as of the date first above written.

JEFFERIES LLC
STIFEL, NICOLAUS & COMPANY, INCORPORATED
Acting individually and as Representatives
of the several Underwriters named in
the attached Schedule A.

JEFFERIES LLC

By: /s/ Matthew Kim
Name: Matthew Kim
Title: Managing Director

STIFEL, NICOLAUS & COMPANY, INCORPORATED

By: /s/ Nicholas Oust
Name: Nicholas Oust
Title: Managing Director

[Signature Page to Underwriting Agreement]

Schedule A

Underwriters	Number of Firm Shares to be Purchased
Jefferies LLC	5,000,000
Stifel, Nicolaus & Company, Incorporated	3,888,889
JMP Securities LLC	1,111,111
Oppenheimer & Co. Inc.	1,111,111
Total	<u>11,111,111</u>

Free Writing Prospectuses Included in the Time of Sale Prospectus

None.

Pricing Information Included in the Time of Sale Prospectus

Price per share to the public	\$ 2.25
Underwriters' discount	\$0.135
Number of Firm Shares being sold by the Company	11,111,111
Number of Optional Shares potentially issuable pursuant to the Underwriters' option to purchase additional Shares	1,666,666

Permitted Section 5(d) Communications

Investor presentation, dated September 9, 2020.

Form of Lock-up Agreement

, 2020

Jefferies LLC
Stifel, Nicolaus & Company, Incorporated
As Representatives of the Several Underwriters

c/o Jefferies LLC
520 Madison Avenue
New York, New York 10022

and

c/o Stifel, Nicolaus & Company, Incorporated
787 7th Avenue, 11th Floor
New York, New York 10019

RE: Strongbridge Biopharma plc (the “**Company**”)

Ladies & Gentlemen:

The undersigned is an owner of ordinary shares, par value \$0.01 per share, of the Company (“**Shares**”) or of securities convertible into or exchangeable or exercisable for Shares. The Company proposes to conduct a public offering of Shares (the “**Offering**”) for which Jefferies LLC (“**Jefferies**”) and Stifel, Nicolaus & Company, Incorporated (“**Stifel**”) will act as the representatives of the underwriters. The undersigned recognizes that the Offering will benefit each of the Company and the undersigned. The undersigned acknowledges that the underwriters are relying on the representations and agreements of the undersigned contained in this letter agreement in conducting the Offering and, at a subsequent date, in entering into an underwriting agreement (the “**Underwriting Agreement**”) and other underwriting arrangements with the Company with respect to the Offering.

Annex A sets forth definitions for capitalized terms used in this letter agreement that are not defined in the body of this agreement. Those definitions are a part of this agreement.

In consideration of the foregoing, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the undersigned hereby agrees that, during the Lock-up Period, the undersigned will not (and will cause any Family Member not to), without the prior written consent of Jefferies and Stifel, which may withhold their consent in their sole discretion:

- Sell or Offer to Sell any Shares or Related Securities currently or hereafter owned either of record or beneficially (as defined in Rule 13d-3 under the Exchange Act) by the undersigned or such Family Member,
- enter into any Swap,

- make any demand for, or exercise any right with respect to, the registration under the Securities Act of the offer and sale of any Shares or Related Securities, or cause to be filed a registration statement, prospectus or prospectus supplement (or an amendment or supplement thereto) with respect to any such registration, or
- publicly announce any intention to do any of the foregoing.

The foregoing will not apply to the registration of the offer and sale of the Shares, and the sale of the Shares to the underwriters, in each case as contemplated by the Underwriting Agreement. In addition, the foregoing restrictions shall not apply to the transfer of Shares or Related Securities (i) by gift, (ii) by will (or other testamentary document) or intestate succession to a Family Member, (iii) to a trust whose beneficiaries consist exclusively of one or more of the undersigned and/or a Family Member, (iv) as a distribution to limited partners, members or shareholders of the undersigned, or (v) to the undersigned's affiliates or to any investment fund or other entity controlled or managed by the undersigned; *provided, however*, that in any such case, it shall be a condition to such transfer that:

- each transferee executes and delivers to Jefferies and Stifel an agreement in form and substance satisfactory to Jefferies and Stifel stating that such transferee is receiving and holding such Shares and/or Related Securities subject to the provisions of this letter agreement and agrees not to Sell or Offer to Sell such Shares and/or Related Securities, engage in any Swap or engage in any other activities restricted under this letter agreement for the balance of the Lock-Up Period except in accordance with this letter agreement (as if such transferee had been an original signatory hereto), and
- prior to the expiration of the Lock-up Period, no public disclosure or filing under the Exchange Act by any party to the transfer (donor, donee, transferor or transferee) shall be required, or made voluntarily, reporting a reduction in beneficial ownership of Shares in connection with such transfer.

Furthermore, the undersigned may:

(i) exercise any Related Securities, whether for cash or by “cashless” exercise, or exchange or convert any Related Securities, in each case, outstanding as of the date of the final prospectus for this Offering and as described therein; provided that (A) any exercise or settlement does not involve a sale of Shares or Related Securities to any person or entity other than the Company, whether to cover the applicable exercise price, withholding tax obligation or otherwise, (B) any Shares received upon such exercise, settlement, exchange or conversion shall be subject to all of the restrictions set forth in this lock-up agreement and (C) no filing or report by any party under the Exchange Act, or other public announcement, shall be required or shall be voluntarily made in connection with such exercise, settlement, exchange or conversion; or

(ii) transfer Shares and/or Related Securities pursuant to a bona fide third-party tender offer, merger, consolidation or other similar transaction made to all holders of the Company's share capital involving a change of control of the Company that has been approved by the board of directors of the Company; provided that (A) all Shares and Related Securities held by the undersigned that are not transferred pursuant to such tender offer, merger, consolidation or other similar transaction shall remain subject to all of the restrictions set forth in this lock-up agreement, (B) in the event that such tender offer, merger, consolidation or other such transaction is not completed, the Shares and Related Securities held by the undersigned shall remain subject to all of the restrictions set forth in this lock-up agreement and (C) for purposes of this paragraph, “change of control” shall mean the consummation of any bona fide third party tender offer for any and all of the Company's share capital or any merger, consolidation or other similar transaction the result of which is that any “person” (as defined in Section 13(d)(3) of the Exchange Act), or group of persons, other than the Company, becomes the beneficial owner (as defined in Rules 13d-3 and 13d-5 of the Exchange Act) of 90% of the total voting power of the voting securities of the Company; or

(iii) transfer Shares and/or Related Securities by operation of law, such as pursuant to a qualified domestic order or in connection with a divorce settlement.

Nothing in the foregoing shall prevent the establishment of any contract, instruction or plan (a "Plan") that satisfies all of the requirements of Rule 10b5-1(c)(1)(i)(B) under the Exchange Act; provided that (1) it shall be a condition to the establishment of any such Plan that no sales of the undersigned's Shares and/or Related Securities shall be made pursuant to such a Plan prior to the expiration of the Lock-Up Period and (2) no filing or report by any party under the Exchange Act, or other public announcement, shall be required or shall be voluntarily made in connection with such action during the Lock-Up Period.

The undersigned also agrees and consents to the entry of stop transfer instructions with the Company's transfer agent and registrar against the transfer of any Shares or Related Securities held by the transfer agent and registrar on behalf of undersigned and the undersigned's Family Members, if any, except in compliance with the foregoing restrictions.

With respect to the Offering only, the undersigned waives any registration rights relating to registration under the Securities Act of the offer and sale of any Shares and/or any Related Securities owned either of record or beneficially by the undersigned, including any rights to receive notice of the Offering.

The undersigned confirms that the undersigned has not, and has no knowledge that any Family Member has, directly or indirectly, taken any action designed to or that 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 of the Shares. The undersigned will not, and will cause any Family Member not to take, directly or indirectly, any such action.

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 letter agreement. This letter agreement is irrevocable and will be binding on the undersigned and the successors, heirs, personal representatives and assigns of the undersigned.

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

Signature

Printed Name of Person Signing

*(Indicate capacity of person signing if
signing as custodian or trustee, or on behalf
of an entity)*

**Certain Defined Terms
Used in Lock-up Agreement**

For purposes of the letter agreement to which this Annex A is attached and of which it is made a part:

- “**Call Equivalent Position**” shall have the meaning set forth in Rule 16a-1(b) under the Exchange Act.
- “**Exchange Act**” shall mean the Securities Exchange Act of 1934, as amended.
- “**Family Member**” shall mean the spouse of the undersigned, an immediate family member of the undersigned or an immediate family member of the undersigned's spouse, in each case living in the undersigned's household or whose principal residence is the undersigned's household (regardless of whether such spouse or family member may at the time be living elsewhere due to educational activities, health care treatment, military service, temporary internship or employment or otherwise). “**Immediate family member**” as used above shall have the meaning set forth in Rule 16a-1(e) under the Exchange Act.
- “**Lock-up Period**” shall mean the period beginning on the date hereof and continuing through the close of trading on the date that is 90 days after the date of the Prospectus (as defined in the Underwriting Agreement).
- “**Put Equivalent Position**” shall have the meaning set forth in Rule 16a-1(h) under the Exchange Act.
- “**Related Securities**” shall mean any options or warrants or other rights to acquire Shares or any securities exchangeable or exercisable for or convertible into Shares, or to acquire other securities or rights ultimately exchangeable or exercisable for or convertible into Shares.
- “**Securities Act**” shall mean the Securities Act of 1933, as amended.
- “**Sell or Offer to Sell**” shall mean to:
 - sell, offer to sell, contract to sell or lend,
 - effect any short sale or establish or increase a Put Equivalent Position or liquidate or decrease any Call Equivalent Position
 - pledge, hypothecate or grant any security interest in, or
 - in any other way transfer or dispose of,in each case whether effected directly or indirectly.
- “**Swap**” shall mean any swap, hedge or similar arrangement or agreement that transfers, in whole or in part, the economic risk of ownership of Shares or Related Securities, regardless of whether any such transaction is to be settled in securities, in cash or otherwise.

Capitalized terms not defined in this Annex A shall have the meanings given to them in the body of this lock-up agreement.

Directors and Officers
Signing Lock-up Agreement

Directors:

John H. Johnson

David N. Gill

Garheng Kong, M.D., Ph.D.

Jeffrey W. Sherman, M.D., FACP

Mårten Steen, M.D., Ph.D.

Hilde H. Steineger, Ph.D.

Officers:

Frederic Cohen, M.D.

Robert Lutz

Richard S. Kollender

Stephen Long

Scott Wilhoit

Our Reference: ST326/025/AB/abh

18 September 2020

Board of Directors
Strongbridge Biopharma Public Limited Company
Suite 206, Fitzwilliam Hall
Fitzwilliam Place
Dublin 2
Ireland

Re: Strongbridge Biopharma Public Limited Company

Dear Sirs,

1. Basis of Opinion

- 1.1 We are acting as Irish counsel to Strongbridge Biopharma Public Limited Company, a public company limited by shares, incorporated under the laws of Ireland, company number 562659, with its registered office at Suite 206, Fitzwilliam Hall, Fitzwilliam Place, Dublin 2, Ireland (the “**Company**”) in connection with:
- (a) the registration statement (the “**Registration Statement**”) on Form S-3 (as amended) (Registration No. 333-223575), filed with the United States Securities and Exchange Commission (the “**SEC**”) under the Securities Act of 1933, as amended (the “**Securities Act**”) with respect to the offering and issuance and sale by the Company, from time to time, of up to \$91,174,535 of ordinary shares of US\$0.01 each (“**Ordinary Shares**”), preferred shares of US\$0.01 each, debt securities of the Company, warrants to purchase Ordinary Shares, preferred shares and/or debt securities, rights to purchase Ordinary Shares, preferred shares, and/or debt securities and/or units consisting of Ordinary Shares, preferred shares, one or more debt securities, warrants or rights in one or more series, in any combination, pursuant to the terms of a base prospectus dated 27 March 2018 contained in the Registration Statement (the “**Base Prospectus**”);
 - (b) the prospectus supplement, dated 16 September 2020 related to the Transaction (as defined below) (together with the Base Prospectus, the “**Prospectus**”);
 - (c) the Underwriting Agreement, dated 16 September 2020 (the “**Underwriting Agreement**”), by and among the Company and Jefferies LLC and Stifel, Nicolaus & Company, Inc. as representatives of the several underwriters named in Schedule A thereto (the “**Underwriters**”); and
 - (d) the issuance and sale by the Company, and the purchase by the Underwriters, severally, of an aggregate of 11,111,111 Ordinary Shares, and up to an additional 1,666,666
-

Ordinary Shares to be issued and sold by the Company pursuant to a 30-day option granted pursuant to section 2(c) of the Underwriting Agreement,

(the “**Transaction**”). The Registration Statement, the Prospectus and the Underwriting Agreement are referred to herein as the “**Transaction Documents**”.

- 1.2 This Opinion is confined to and given in all respects on the basis of the laws of Ireland (meaning Ireland exclusive of Northern Ireland) in force as at the date hereof as currently applied by the courts of Ireland. We have made no investigation of and we express no opinion as to the laws of any other jurisdiction or the effect thereof.
- 1.3 This Opinion is also strictly confined to the matters expressly stated herein at paragraph 2 below and is not to be read as extending by implication or otherwise to any other matter.
- 1.4 We have examined:
 - (a) the documents listed in the schedule (the “**Schedule**”) to this Opinion (the “**Documents**”);
 - (b) the searches listed at paragraph 1.6 below (the “**Searches**”); and
 - (c) such other documents and records as we have deemed necessary to enable us to render the opinions set forth below.
- 1.5 In giving this Opinion, we have examined and relied on copies of the Documents sent to us by e-mail in pdf or other electronic format.
- 1.6 For the purpose of giving this Opinion, we have caused to be made the following legal searches against the Company on 18 September 2020:
 - (a) on the file of the Company maintained by the Registrar of Companies in Dublin for mortgages, debentures or similar charges or notices thereof and for the appointment of any receiver, examiner or liquidator;
 - (b) in the Judgments Office of the High Court for unsatisfied judgments, orders, decrees and the like for the five years immediately preceding the date of the search; and
 - (c) in the Central Office of the High Court in Dublin for any proceedings and petitions filed in the last two years.
- 1.7 As regards certain U.S. laws, legal opinions are being provided by Reed Smith LLP.
- 1.8 No opinion is expressed as to the taxation consequences of the Transaction, the Transaction Documents or the transactions contemplated thereby.
- 1.9 No opinion or qualification in this Opinion limits any other assumption or qualification herein. Headings to paragraphs or subparagraphs of this Opinion are for convenience only and do not affect the construction or interpretation hereof.

2. **Opinion**

Subject to the assumptions and qualifications set out in this Opinion and to any matters not disclosed to us, we are of the opinion that:

- 2.1 The Company is a public company limited by shares and is duly incorporated and validly existing under the laws of Ireland.
 - 2.2 The issuance of the Ordinary Shares, in accordance with the terms of the Transaction Documents, will, on:
-

- (a) the allotment and issuance of the Ordinary Shares (by the entry of the name of the registered owner thereof in the register of members of the Company confirming that such Ordinary Shares have been issued credited as fully paid) in accordance with all necessary corporate action of the Company; and
- (b) the subscription and payment therefor, by the relevant subscribers in accordance with the constitution of the Company (the “**Constitution**”) and in the manner provided for in the Transaction Documents,

be validly issued, fully paid and non-assessable (which term, when used herein, means that the holders of such Ordinary Shares are not liable, solely by virtue of holding such Ordinary Shares, for additional assessments or calls on such Ordinary Shares by the Company or its creditors).

3. **Assumptions**

For the purpose of giving this Opinion, we assume the following without any responsibility on our part if any assumption proves to have been untrue as we have not verified independently any assumption:

Registration Statement and the Ordinary Shares

- 3.1 that no order suspending the effectiveness of the Registration Statement has been issued by the SEC and no proceeding for that purpose or pursuant to section 8A of the Securities Act against the Company or in connection with the Transaction is pending or threatened by the SEC;
 - 3.2 that the filing of the Registration Statement with the SEC was authorised by all necessary actions under all applicable laws other than Irish law;
 - 3.3 that, at the time of issuance of the Ordinary Shares, the authority of the Company and the directors of the Company to issue the Ordinary Shares, as provided for in the Companies Act 2014 (the “**Companies Act**”), the Constitution and the resolutions of the Company passed at its annual general meeting held on 14 May 2020, are in full force and effect;
 - 3.4 that the Company will continue to renew its authority to issue the Ordinary Shares in accordance with the terms and conditions set out in the Constitution and the Companies Act and that, where such authority has not been renewed, the Company will not issue the Ordinary Shares after such authority has expired;
 - 3.5 that the Ordinary Shares issued and sold under the Registration Statement will be issued and sold in compliance with all applicable laws (other than Irish law), including applicable federal and state securities laws, in the manner stated in the Registration Statement and the Prospectus;
 - 3.6 that, at the time of any issuance of any Ordinary Shares, the Company will have sufficient authorised but unissued share capital available for issuance by the board of directors of the Company (the “**Board**”) under the Constitution to issue the required number of Ordinary Shares, and that the Company will not have prior to, or by virtue of, such issuance, exceeded or exceed the maximum number of Ordinary Shares (as the case may be) permitted to be issued pursuant to the Constitution and the Companies Act;
 - 3.7 that the Underwriting Agreement will have been duly authorised, executed and delivered by the parties thereto, as applicable, and constitutes legally valid and binding obligations on the parties thereto, enforceable against each of them in accordance with its terms;
 - 3.8 that any Ordinary Shares issued under the Registration Statement will be in consideration of the receipt by the Company prior to, or simultaneously with, the issuance of such Ordinary Shares of either cash or the release of a liability of the Company for a liquidated sum, at least equal to the nominal value of such Ordinary Shares and any premium required to be paid up on the Ordinary Shares pursuant to their terms of issuance;
-

Authenticity and Bona Fides

- 3.9 the truth, completeness, accuracy and authenticity of all Documents submitted to us as originals or copies of originals (and in the case of copies, conformity to the originals of such copies), the genuineness of all signatories, stamps and seals thereon and where incomplete Documents have been submitted to us that the originals of such Documents are identical to the last draft of the complete Documents submitted to us;
- 3.10 that the copies produced to us of minutes of meetings and/or of resolutions correctly record the proceedings at such meetings and/or the subject matter which they purport to record and that any meetings referred to in such copies were duly convened, duly quorate and held, that those present at any such meetings were entitled to attend and vote at the meeting and acted bona fide throughout and that no further resolutions have been passed or other action taken which would or might alter the effectiveness thereof and that such resolutions have not been amended or rescinded and are in full force and effect;
- 3.11 that there is, at the relevant time of the allotment and issuance of the Ordinary Shares, no matter affecting the authority of the directors to allot and issue the Ordinary Shares, not disclosed by the Constitution or the resolutions produced to us, which would have any adverse implications in relation to the opinions expressed in this Opinion;
- 3.12 that each director of the Company has disclosed any interest which he or she may have in the Transaction in accordance with the provisions of the Companies Act and the Constitution and none of the directors of the Company has any interest in the Transaction except to the extent permitted by the Constitution;
- 3.13 the absence of fraud, coercion, duress or undue influence and lack of bad faith on the part of the Company and its respective officers, employees, agents and advisers and that the Company will issue the Ordinary Shares in good faith, for its legitimate and bona fide business purposes;
- 3.14 that the Constitution effective as of 9 September 2015 is the current constitution of the Company, is up to date and has not been amended or superseded and that there are no other terms governing the Ordinary Shares other than those set out in the Constitution;

Accuracy of Searches and Warranties

- 3.15 the accuracy and completeness of the information disclosed in the Searches and that such information is accurate as of the date of this Opinion and has not since the time of such search or enquiry been altered. In this connection, it should be noted that:
- (a) the matters disclosed in the Searches may not present a complete summary of the actual position on the matters we have caused searches to be conducted for;
 - (b) the position reflected by the Searches may not be fully up-to-date (and this risk may be higher while emergency measures introduced by the Irish Government in light of the COVID-19 pandemic remain in place); and
 - (c) searches at the Registrar of Companies in Dublin do not necessarily reveal whether or not a prior charge has been created or a resolution has been passed or a petition presented or any other action taken for the winding-up of or the appointment of a receiver or an examiner to the Company;
- 3.16 the truth, completeness and accuracy of all representations and statements as to factual matters contained in the Documents;

Commercial Benefit

- 3.17 that the Transaction Documents have been entered into for bona fide commercial purposes, on arm's length terms and for the benefit of each party thereto and are in those parties' respective commercial interests and for their respective corporate benefit;
-

Financial Assistance and Connected Transactions

- 3.18 that the Company is not, by entering into the Transaction Documents or performing its obligations thereunder, providing financial assistance for the purpose of an acquisition (by way of subscription, purchase, exchange or otherwise) made or to be made by any person of any shares in the Company which would be prohibited by section 82 of the Companies Act; and
- 3.19 that none of the transactions contemplated by the Transaction Documents is prohibited by virtue of section 239 of the Companies Act, which prohibits certain transactions between companies and its directors or persons connected with its directors.

4. Qualifications

The opinions set out in this Opinion are subject to the following reservations:

General Matters

- 4.1 A particular course of dealing among the parties or an oral amendment, variation or waiver may result in an Irish court finding that the terms of the Transaction Documents have been amended, varied or waived even if such course of dealing or oral amendment, variation or waiver is not reflected in writing among the parties.
- 4.2 No opinion is expressed on the irrevocability of, or on the enforceability of the delegation of, any power of attorney under the Transaction Documents.
- 4.3 No opinion is expressed on any deed of assignment, transfer, accession or similar document executed after the date of this Opinion in relation to any of the rights and obligations contained in the Transaction Documents.
- 4.4 No opinion is expressed on any deed or agreement envisaged by the Transaction Documents to be entered at a future date or any future action taken by a party under the Transaction Documents.
- 4.5 We express no opinion as to whether the Transaction Documents breach any other agreement or instrument.

Sanctions

- 4.6 If a party to any Transaction Document or to any transfer of, or payment in respect of, the Transaction Documents is controlled by or otherwise connected with a person (or is itself) resident in, incorporated in or constituted under the laws of a country which is the subject of United Nations, European Union or Irish sanctions or sanctions under the Treaty on the Functioning of the European Union, as amended, or is otherwise the target of any such sanctions, then obligations to that party under the relevant Transaction Documents or in respect of the relevant transfer or payment may be unenforceable or void.

5. Disclosure

This Opinion is addressed to you in connection with the issuance of the Ordinary Shares under the Registration Statement and in accordance with the terms of the Transaction Documents. We hereby consent to the inclusion of this Opinion as an exhibit to any post-effective amendment to the Registration Statement filed pursuant to Rule 462(b) of the Securities Act) and any current report on Form 8-K to be filed with the SEC. In giving this consent, we do not thereby admit that we are in a category of person whose consent is required under Section 7 of the Securities Act.

6. No Refresher

This Opinion speaks only as of its date. We are not under any obligation to update this Opinion from time to time or to notify you of any change of law, change in interpretation of law which may occur after the date of this Opinion.

The opinion is governed by and is to be construed in accordance with the laws of Ireland as interpreted by the courts of Ireland at the date hereof.

Yours faithfully,

/s/ ARTHUR COX

ARTHUR COX

SCHEDULE

The Documents

1. A copy of the Registration Statement.
 2. A copy of the Prospectus.
 3. A copy of the Underwriting Agreement.
 4. The results of the Searches.
 5. A copy of the certificate of incorporation of the Company dated 26 May 2015.
 6. A copy of the certificate of a public company entitled to do business of the Company dated 28 May 2015.
 7. A copy of the certificate of incorporation on change of name of the Company dated 4 September 2015.
 8. A copy of the Constitution of the Company as adopted by resolution of the shareholder of the Company on 3 September 2015, effective 9 September 2015.
 9. A copy of the corporate certificate of the secretary of the Company dated 18 September 2020.
 10. A copy of the minutes of a meeting of the Board held on 8 March 2018.
 11. A copy of the minutes of the Company's annual general meeting of shareholders held on 14 May 2020.
 12. A copy of the resolutions adopted by the Board on 6 August 2020.
 13. A copy of the resolutions of the pricing committee of the Board adopted by such committee on 16 September 2020.
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Strongbridge Biopharma plc Announces Proposed Public Offering of Ordinary Shares

Dublin, Ireland and Treviso, Pa., September 16, 2020 – Strongbridge Biopharma plc, (Nasdaq: SBBP), a global commercial-stage biopharmaceutical company focused on the development and commercialization of therapies for rare diseases with significant unmet needs, today announced that it intends to offer and sell ordinary shares in an underwritten public offering. The Company also intends to grant the underwriters a 30-day option to purchase up to an additional 15% of the number of ordinary shares sold in the offering. The offering is subject to market and other conditions and there can be no assurance as to whether or when the offering may be completed, or as to the size or terms of the offering.

Jefferies and Stifel are acting as the joint book-running managers for the offering. JMP Securities and Oppenheimer & Co. are acting as lead managers for the offering. MTS Securities, LLC is serving as a financial advisor to the Company in the offering.

The Company intends to use the net proceeds from this offering to (i) continue development and regulatory activities, facilitate commercial readiness and commercially launch Recorlev primarily in the United States, (ii) support the life cycle management activities of Keveyis and (iii) support other general corporate purposes, which may include working capital, capital expenditures, acquisition of additional technologies or other forms of intellectual property, acquisition of assets or businesses that are complementary to our existing business, and general and administrative expenses.

A shelf registration statement relating to the ordinary shares was previously filed with the Securities and Exchange Commission (the "SEC") and declared effective on March 27, 2018. This offering is being made only by means of a written prospectus supplement and the accompanying prospectus forming a part of the effective registration statement. A preliminary prospectus supplement and accompanying prospectus relating to the offering will be filed with the SEC and will be available on the SEC's website. Copies of the preliminary prospectus supplement (when available) and accompanying prospectus may be obtained from either Jefferies LLC, Attention: Equity Syndicate Prospectus Department, 520 Madison Avenue, 2nd Floor, New York, NY 10022, by telephone at 877-547-6340 or by email at Prospectus_Department@Jefferies.com or Stifel, Nicolaus & Company, Incorporated, Attention: Syndicate, One Montgomery Street, Suite 3700, San Francisco, CA 94104, by telephone at 415-364-2720 or by email at syndprospectus@stifel.com.

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

means of the prospectus supplement and accompanying prospectus forming a part of the effective registration statement.

About Strongbridge Biopharma plc

Strongbridge Biopharma is a global commercial-stage biopharmaceutical company focused on the development and commercialization of therapies for rare diseases with significant unmet needs. Strongbridge's rare endocrine franchise includes RECORLEV® (levoketoconazole), a cortisol synthesis inhibitor currently being studied in Phase 3 clinical studies for the treatment of endogenous Cushing's syndrome, and veldoreotide extended release, a pre-clinical next-generation somatostatin analog being investigated for the treatment of acromegaly and potential additional applications in other conditions amenable to somatostatin receptor activation. Both RECORLEV and veldoreotide have received orphan drug designation from the FDA and the European Medicines Agency. The Company's rare neuromuscular franchise includes KEVEYIS® (dichlorphenamide), the first and only FDA-approved treatment for hyperkalemic, hypokalemic, and related variants of primary periodic paralysis. KEVEYIS has orphan drug exclusivity in the United States.

Forward-Looking Statements

This press release contains forward-looking statements within the meaning of the federal securities laws. These statements include statements related to the expected completion of the offering described herein and the intended use of proceeds. Forward-looking statements involve risks and uncertainties that could cause actual results to differ materially from those expressed in such statements, including risks and uncertainties associated with prevailing market conditions, the impact of general economic, industry or political conditions in the United States or internationally, and Strongbridge's ability to satisfy customary closing conditions associated with the offering. Additional risks and uncertainties relating to the proposed offering, Strongbridge and its business can be found under the heading "Risk Factors" in the preliminary prospectus supplement and accompanying prospectus relating to the offering to be filed with the SEC, as well as Strongbridge's Annual Report on Form 10-K for the year ended December 31, 2019, Strongbridge's Quarterly Report on Form 10-Q for the quarter ended June 30, 2020 and its subsequent filings with the SEC. Strongbridge assumes no duty or obligation to update or revise any forward-looking statements for any reason.

Contacts:

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Strongbridge Biopharma plc Announces Pricing of Public Offering of Ordinary Shares

Dublin, Ireland and Trevese, Pa., September 16, 2020 – Strongbridge Biopharma plc, (Nasdaq: SBBP), a global commercial-stage biopharmaceutical company focused on the development and commercialization of therapies for rare diseases with significant unmet needs, today announced that it has priced its previously announced underwritten public offering. The Company is offering 11,111,111 ordinary shares at a price to the public of \$2.25 per share for total gross proceeds of approximately \$25.0 million, before deducting the underwriting discount and estimated offering expenses payable by the Company. The offering is expected to close on or about September 21, 2020, subject to the satisfaction of customary closing conditions. In addition, the Company granted the underwriters a 30-day option to purchase up to an additional 1,666,666 ordinary shares on the same terms and conditions.

Jefferies and Stifel are acting as the joint book-running managers for the offering. JMP Securities and Oppenheimer & Co. are acting as lead managers for the offering. MTS Securities, LLC is serving as a financial advisor to the Company in the offering.

The Company intends to use the net proceeds from this offering to (i) continue development and regulatory activities, facilitate commercial readiness and commercially launch Recorlev primarily in the United States, (ii) support the life cycle management activities of Keveyis, and (iii) support other general corporate purposes, which may include working capital, capital expenditures, acquisition of additional technologies or other forms of intellectual property, acquisition of assets or businesses that are complementary to our existing business, and general and administrative expenses.

A shelf registration statement relating to the ordinary shares was previously filed with the Securities and Exchange Commission (the "SEC") and declared effective on March 27, 2018. This offering is being made only by means of a written prospectus supplement and the accompanying prospectus forming a part of the effective registration statement. A preliminary prospectus supplement and accompanying prospectus relating to the offering were filed with the SEC on September 16, 2020. A final prospectus supplement and accompanying prospectus relating to the offering will be filed with the SEC and will be available on the SEC's website. Copies of the final prospectus supplement (when available) and accompanying prospectus may be obtained from either Jefferies LLC, Attention: Equity Syndicate Prospectus Department, 520 Madison Avenue, 2nd Floor, New York, NY 10022, by telephone at 877-547-6340 or by email at Prospectus_Department@Jefferies.com or Stifel, Nicolaus & Company, Incorporated, Attention: Syndicate, One Montgomery Street, Suite 3700, San Francisco, CA 94104, by telephone at 415-364-2720 or by email at syndprospectus@stifel.com.

This press release shall not constitute an offer to sell or the solicitation of an offer to buy these securities, nor shall there be any sale of these securities in any state or other jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state or other jurisdiction. Any offer, if at all, will be made only by means of the prospectus supplement and accompanying prospectus forming a part of the effective registration statement.

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“Safe Harbor” Statement Under the Private Securities Litigation Reform Act of 1995

This press release contains forward-looking statements within the meaning of the federal securities laws. These statements include statements related to the expected completion of the offering described herein and the intended use of proceeds. Forward-looking statements involve risks and uncertainties that could cause actual results to differ materially from those expressed in such statements, including risks and uncertainties associated with prevailing market conditions, the impact of general economic, industry or political conditions in the United States or internationally, and Strongbridge's ability to satisfy customary closing conditions associated with the offering. Additional risks and uncertainties relating to the proposed offering, Strongbridge and its business can be found under the heading “Risk Factors” in the preliminary prospectus supplement and accompanying prospectus relating to the offering to be filed with the SEC, as well as Strongbridge's Annual Report on Form 10-K for the year ended December 31, 2019, Strongbridge's Quarterly Report on Form 10-Q for the quarter ended June 30, 2020 and its subsequent filings with the SEC. Strongbridge assumes no duty or obligation to update or revise any forward-looking statements for any reason.

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