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

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**FORM 8-K**

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

Date of Report (Date of earliest event reported): **June 8, 2020**

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**REPLIMUNE GROUP, INC.**

(Exact name of registrant as specified in its charter)

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

**001-38596**  
(Commission  
File Number)

**82-2082553**  
(IRS Employer  
Identification Number)

**500 Unicorn Park  
Woburn, MA 01801**  
(Address of principal executive offices, including Zip Code)

Registrant's telephone number, including area code: **(781) 222-9600**

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
Common Stock, par value \$0.001 per share	REPL	The Nasdaq Stock Market LLC (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.  x

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## Item 8.01 Other Events.

On June 8, 2020, Replimune Group, Inc. (the “Company”) entered into an underwriting agreement (the “Underwriting Agreement”) with J.P. Morgan Securities LLC and SVB Leerink LLC, as representatives of the several underwriters named therein (the “Underwriters”), relating to the issuance and sale of 2,826,088 shares of the Company’s common stock (the “Shares”) and, in lieu of common stock to certain investors, pre-funded warrants to purchase 1,521,738 shares of the Company’s common stock (the “Pre-Funded Warrants”) to the Underwriters (the “Offering”). The Shares will be sold to the purchasers at the public offering price of \$23.00 per share, and the Pre-Funded Warrants will be sold to the purchasers at a public offering price of \$22.9999 per Pre-Funded Warrant, which equals the per share public offering price for the Shares less the \$0.0001 exercise price for each such Pre-Funded Warrant. Pursuant to the Underwriting Agreement, the Company also granted the Underwriters a 30-day option to purchase up to 652,173 additional shares of its common stock. The Underwriting Agreement contains customary representations and warranties, conditions to closing, market standoff provisions, termination provisions and indemnification obligations, including for liabilities under the Securities Act of 1933, as amended. The representations, warranties and covenants contained in the Underwriting Agreement were made only for purposes of such agreement and as of specific dates, and were solely for the benefit of the parties to the Underwriting Agreement.

The Pre-Funded Warrants are exercisable at any time after the date of issuance. A holder of Pre-Funded Warrants may not exercise the warrant if the holder, together with its affiliates, would beneficially own more than 9.99% of the number of shares of the Company’s common stock outstanding immediately after giving effect to such exercise. A holder of Pre-Funded Warrants may increase or decrease this percentage not in excess of 19.99% by providing at least 61 days’ prior notice to the Company.

The Company estimates that net proceeds from the Offering will be approximately \$93.7 million, after deducting underwriting discounts and commissions and estimated Offering expenses payable by the Company, and assuming no exercise of the Underwriters’ 30-day option to purchase additional shares of the Company’s common stock. The Company expects the Offering to close on June 11, 2020, subject to customary closing conditions. The Offering is being made pursuant to the shelf registration statement on Form S-3 (File No. 333-233147) previously filed by the Company with the Securities and Exchange Commission (the “SEC”) on August 8, 2019, and declared effective by the SEC on August 15, 2019, and a related prospectus supplement.

The Underwriting Agreement is filed as Exhibit 1.1 to this Current Report on Form 8-K and the foregoing description of the terms of the Underwriting Agreement is qualified in its entirety by reference to such exhibit. The form of Pre-Funded Warrant is filed as Exhibit 4.1 to this Current Report on Form 8-K and the foregoing description of the terms of the Pre-Funded Warrants is qualified in its entirety by reference to such exhibit. A copy of the opinion of Morgan, Lewis & Bockius LLP relating to the legality of the issuance and sale of the Shares and Pre-Funded Warrants in the Offering is filed with this Current Report on Form 8-K as Exhibit 5.1.

On June 8, 2020, the Company issued two press releases announcing that it had commenced the Offering and that it had priced and upsized the Offering, respectively. Copies of these press releases are attached as Exhibits 99.1 and 99.2 hereto, respectively.

Neither the disclosures on this Current Report on Form 8-K nor the exhibits hereto shall constitute an offer to sell or the solicitation of an offer to buy the securities described herein and therein, nor shall there be any sale of such securities in any state or jurisdiction in which such an offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state or jurisdiction.

## Item 9.01 Financial Statements and Exhibits.

<b>Exhibit No.</b>	<b>Description</b>
<a href="#">1.1</a>	<a href="#">Underwriting Agreement dated June 8, 2020</a>
<a href="#">4.1</a>	<a href="#">Form of Pre-Funded Warrant</a>
<a href="#">5.1</a>	<a href="#">Opinion of Morgan, Lewis &amp; Bockius LLP</a>
<a href="#">23.1</a>	<a href="#">Consent of Morgan, Lewis &amp; Bockius LLP (included in Exhibit 5.1)</a>
<a href="#">99.1</a>	<a href="#">Press Release dated June 8, 2020 announcing the commencement of the Offering</a>
<a href="#">99.2</a>	<a href="#">Press Release dated June 8, 2020 announcing the pricing and upsize of the Offering</a>

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## **Forward-Looking Statements**

This Current Report on Form 8-K contains forward looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, and that involve risks and uncertainties, including statements regarding the expected net proceeds and the closing date of the Offering and other statements identified by words such as “could”, “expects”, “intends”, “may”, “plans”, “potential”, “should”, “will”, “would”, or similar expressions and the negatives of those terms. Forward-looking statements are not promises or guarantees of future performance, and are subject to a variety of risks and uncertainties, many of which are beyond our control, and which could cause actual results to differ materially from those contemplated in such forward-looking statements, including, but not limited to, the risks as may be detailed from time to time in our Annual Reports on Form 10-K and Quarterly Reports on Form 10-Q and other reports we file with the SEC, and in the preliminary prospectus supplement, the final prospectus supplement, and the accompanying prospectus related to the Offering. Our actual results could differ materially from the results described in or implied by such forward-looking statements. Forward-looking statements speak only as of the date hereof, and, except as required by law, we undertake no obligation to update or revise these forward-looking statements.

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**SIGNATURES**

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

**REPLIMUNE GROUP, INC.**

Date: June 10, 2020

By: /s/ Jean Franchi  
Jean Franchi  
Chief Financial Officer

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## REPLIMUNE GROUP, INC.

2,826,088 Shares of Common Stock

Pre-Funded Warrants to Purchase 1,521,738 Shares of Common Stock

## Underwriting Agreement

June 8, 2020

J.P. Morgan Securities LLC  
SVB Leerink LLC

As Representatives of the  
several Underwriters listed  
in Schedule 1 hereto

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

c/o SVB Leerink LLC  
One Federal Street, 37th Floor  
Boston, Massachusetts 02110

Ladies and Gentlemen:

Replimune Group, Inc., a Delaware corporation (the "Company"), proposes to issue and sell to the several underwriters listed in Schedule 1 hereto (the "Underwriters"), for whom you are acting as representatives (the "Representatives"), an aggregate of 2,826,088 shares (the "Underwritten Shares") of common stock, par value \$0.001 per share, of the Company (the "Common Stock"), pre-funded warrants to purchase an aggregate of 1,521,738 shares of Common Stock in a form to be mutually agreed by the Company and the Representatives (the "Warrants") and, at the option of the Underwriters, up to an additional 652,173 shares of Common Stock (the "Option Shares"). The Underwritten Shares and the Warrants are herein referred to as the "Underwritten Securities". The Underwritten Shares and the Option Shares are herein referred to as the "Shares". The shares of Common Stock issuable upon exercise of the Warrants are herein referred to as the "Warrant Shares". The Shares and Warrants are herein referred to as the "Securities". The shares of Common Stock to be outstanding after giving effect to the sale of the Shares and the exercise of the Warrants are referred to herein as the "Stock".

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

1. Registration Statement. The Company has prepared and filed with the Securities and Exchange Commission (the “Commission”) under the Securities Act of 1933, as amended, and the rules and regulations of the Commission thereunder (collectively, the “Securities Act”), a registration statement (File No. 333-233147), including a prospectus, relating to the Shares, the Warrants and the Warrant Shares. Such registration statement, as amended at the time it became effective, including the information, if any, deemed pursuant to Rule 430A, 430B or 430C under the Securities Act to be part of the registration statement at the time of its effectiveness (“Rule 430 Information”), is referred to herein as the “Registration Statement”; and as used herein, the term “Preliminary Prospectus” means each prospectus included in such registration statement (and any amendments thereto) before effectiveness, any prospectus filed with the Commission pursuant to Rule 424(b) under the Securities Act and the prospectus included in the Registration Statement at the time of its effectiveness that omits Rule 430 Information, and the term “Prospectus” means the prospectus in the form first used (or made available upon request of purchasers pursuant to Rule 173 under the Securities Act) in connection with confirmation of sales of the Securities. If the Company has filed an abbreviated registration statement pursuant to Rule 462(b) under the Securities Act (the “Rule 462 Registration Statement”), then any reference herein to the term “Registration Statement” shall be deemed to include such Rule 462 Registration Statement. Any reference in this underwriting agreement (this “Agreement”) to the Registration Statement, any Preliminary Prospectus or the Prospectus shall be deemed to refer to and include the documents incorporated by reference therein pursuant to Item 12 of Form S-3 under the Securities Act, as of the effective date of the Registration Statement or the date of such Preliminary Prospectus or the Prospectus, as the case may be, and any reference to “amend”, “amendment” or “supplement” with respect to the Registration Statement, any Preliminary Prospectus or the Prospectus shall be deemed to refer to and include any documents filed after such date under the Securities Exchange Act of 1934, as amended, and the rules and regulations of the Commission thereunder (collectively, the “Exchange Act”) that are deemed to be incorporated by reference therein. Capitalized terms used but not defined herein shall have the meanings given to such terms in the Registration Statement and the Prospectus.

At or prior to the Applicable Time (as defined below), the Company had prepared the following information (collectively with the pricing information set forth on Annex A, the “Pricing Disclosure Package”): a Preliminary Prospectus dated June 8, 2020 and each “free-writing prospectus” (as defined pursuant to Rule 405 under the Securities Act) listed on Annex A hereto.

“Applicable Time” means 6:30 P.M., New York City time, on June 8, 2020.

2. Purchase of the Securities.

(a) The Company agrees to issue and sell the Underwritten Securities to the several Underwriters as provided in this Agreement, and each Underwriter, on the basis of the representations, warranties and agreements set forth herein and subject to the conditions set forth herein, agrees, severally and not jointly, to purchase at a price per share of Common Stock of \$21.62 (the “Share Purchase Price”) from the Company the respective number of Underwritten Shares set forth opposite such Underwriter’s name in Schedule 1 hereto, and to purchase from the Company Warrants in respect of the respective number of Warrant Shares set forth opposite such Underwriter’s name in Schedule 1 hereto at a price of \$21.62 per Warrant Share (the “Warrant Purchase Price”).

In addition, the Company agrees to issue and sell the Option Shares to the several Underwriters as provided in this Agreement, and the Underwriters, on the basis of the representations, warranties and agreements set forth herein and subject to the conditions set forth herein, shall have the option to purchase, severally and not jointly, from the Company the Option Shares at the Share Purchase Price less an amount per share equal to any dividends or distributions declared by the Company and payable on the Underwritten Shares but not payable on the Option Shares.

If any Option Shares are to be purchased, the number of Option Shares to be purchased by each Underwriter shall be the number of Option Shares which bears the same ratio to the aggregate number of Option Shares being purchased as the number of Underwritten Shares set forth opposite the name of such Underwriter in Schedule 1 hereto (or such number increased as set forth in Section 10 hereof) bears to the aggregate number of Underwritten Shares being purchased from the Company by the several Underwriters, subject, however, to such adjustments to eliminate any fractional Shares as the Representatives in their sole discretion shall make.

The Underwriters may exercise the option to purchase Option Shares at any time in whole, or from time to time in part, on or before the thirtieth day following the date of the Prospectus, by written notice from the Representatives to the Company. Such notice shall set forth the aggregate number of Option Shares as to which the option is being exercised and the date and time when the Option Shares are to be delivered and paid for, which may be the same date and time as the Closing Date (as hereinafter defined) but shall not be earlier than the Closing Date nor later than the tenth full business day (as hereinafter defined) after the date of such notice (unless such time and date are postponed in accordance with the provisions of Section 10 hereof). Any such notice shall be given at least two business days prior to the date and time of delivery specified therein.

(b) The Company understands that the Underwriters intend to make a public offering of the Securities, and initially to offer the Securities on the terms set forth in the Pricing Disclosure Package. The Company acknowledges and agrees that the Underwriters may offer and sell Securities to or through any affiliate of an Underwriter.

(c) Payment for the Securities shall be made by wire transfer in immediately available funds to the account specified by the Company to the Representatives in the case of the Underwritten Securities, at the offices of Cravath, Swaine & Moore LLP, 825 Eighth Avenue, New York, New York 10019 at 10:00 A.M. New York City time on June 11, 2020, or at such other time or place on the same or such other date, not later than the fifth business day thereafter, as the Representatives and the Company may agree upon in writing or, in the case of the Option Shares, on the date and at the time and place specified by the Representatives in the written notice of the Underwriters' election to purchase such Option Shares. The time and date of such payment for the Underwritten Securities is referred to herein as the "Closing Date", and the time and date for such payment for the Option Shares, if other than the Closing Date, is herein referred to as the "Additional Closing Date".

Payment for the Securities to be purchased on the Closing Date or the Additional Closing Date, as the case may be, shall be made against delivery to the Representatives for the respective accounts of the several Underwriters of the Securities to be purchased on such date or the Additional Closing Date, as the case may be, with any transfer taxes payable in connection with the sale of such Securities duly paid by the Company. Delivery of the Shares shall be made through the facilities of The Depository Trust Company (“DTC”) unless the Representatives shall otherwise instruct. The Warrants shall be delivered to the Representatives in definitive form, registered in such names and in such denominations as the Representatives shall request in writing not later than the Closing Date. The Warrants will be made available for inspection by the Representatives on the business day prior to the Closing Date.

Notwithstanding the foregoing, the Company and the Representatives shall instruct purchasers of the Warrants in the public offering to make payment for the Warrants on the Closing Date to the Company by wire transfer in immediately available funds to the account specified by the Company at a purchase price of \$22.9999 per Warrant Share, in lieu of payment by the Underwriters for such Warrants, and the Company shall deliver such Warrants to such purchasers on the Closing Date in definitive form against such payment, in lieu of the Company’s obligation to deliver such Warrants to the Underwriters; provided that, upon receipt by the Company of payment for the Warrants, the Company shall promptly (but in no event later than the Closing Date) pay \$1.38 per Warrant Share to the Underwriters by wire transfer in immediately available funds to the account specified by the Representatives.

In the event that the purchasers of the Warrants in the public offering fail to make payment to the Company for all or part of the Warrants on the Closing Date, the Representatives may elect, by written notice to the Company, to receive shares of Common Stock in lieu of all or a portion of such Warrants to be delivered to the Underwriters under this Agreement.

(d) The Company acknowledges and agrees that the Representatives and the other Underwriters are acting solely in the capacity of an arm’s length contractual counterparty to the Company with respect to the offering of Securities contemplated hereby (including in connection with determining the terms of the offering) and not as a financial advisor or a fiduciary to, or an agent of, the Company or any other person. Additionally, neither the Representatives nor any other Underwriter is advising the Company or any other person as to any legal, tax, investment, accounting or regulatory matters in any jurisdiction. The Company shall consult with its own advisors concerning such matters and shall be responsible for making its own independent investigation and appraisal of the transactions contemplated hereby, and neither the Representatives nor the other Underwriters shall have any responsibility or liability to the Company with respect thereto. Any review by the Representatives and the other Underwriters of the Company, the transactions contemplated hereby or other matters relating to such transactions will be performed solely for the benefit of the Underwriters and shall not be on behalf of the Company.



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

(a) *Preliminary Prospectus.* No order preventing or suspending the use of any Preliminary Prospectus has been issued by the Commission, and each Preliminary Prospectus included in the Pricing Disclosure Package, at the time of filing thereof, complied in all material respects with the applicable requirements of the Securities Act, and no Preliminary Prospectus included in the Pricing Disclosure Package, at the time of filing thereof, contained any untrue statement of a material fact or omitted to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided that the Company makes no representation or warranty with respect to any statements or omissions made in reliance upon and in conformity with information relating to any Underwriter furnished to the Company in writing by such Underwriter through the Representatives expressly for use in any Preliminary Prospectus, it being understood and agreed that the only such information furnished by any Underwriter consists of the information described as such in Section 7(b) hereof.

(b) *Pricing Disclosure Package.* The Pricing Disclosure Package as of the Applicable Time did not, and as of the Closing Date and as of the Additional Closing Date, as the case may be, will not, contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided that the Company makes no representation or warranty with respect to any statements or omissions made in reliance upon and in conformity with information relating to any Underwriter furnished to the Company in writing by such Underwriter through the Representatives expressly for use in such Pricing Disclosure Package, it being understood and agreed that the only such information furnished by any Underwriter consists of the information described as such in Section 7(b) hereof. No statement of material fact included in the Prospectus has been omitted from the Pricing Disclosure Package and no statement of material fact included in the Pricing Disclosure Package that is required to be included in the Prospectus has been omitted therefrom.

(c) *Issuer Free Writing Prospectus.* Other than the Registration Statement, the Preliminary Prospectus and the Prospectus, the Company (including its agents and representatives, other than the Underwriters in their capacity as such) has not prepared, made, used, authorized, approved or referred to and will not prepare, make, use, authorize, approve or refer to any “written communication” (as defined in Rule 405 under the Securities Act) that constitutes an offer to sell or solicitation of an offer to buy the Securities (each such communication by the Company or its agents and representatives (other than a communication referred to in clause (i) below), an “Issuer Free Writing Prospectus”) other than (i) any document not constituting a prospectus pursuant to Section 2(a)(10)(a) of the Securities Act or Rule 134 under the Securities Act or (ii) the documents listed on Annex A hereto, each electronic road show and any other written communications approved in writing in advance by the Representatives. Each such Issuer Free Writing Prospectus complies in all material respects with the Securities Act, has been or will be (within the time period specified in Rule 433) filed in accordance with the Securities Act (to the extent required thereby) and does not conflict with the information contained in the Registration Statement or the Pricing Disclosure Package, and, when taken together with the Preliminary Prospectus accompanying, or delivered prior to delivery of, such Issuer Free Writing Prospectus, did not, and as of the Closing Date and as of the Additional Closing Date, as the case may be, will not, contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided that the Company makes no representation or warranty with respect to any statements or omissions made in each such Issuer Free Writing Prospectus or Preliminary Prospectus in reliance upon and in conformity with information relating to any Underwriter furnished to the Company in writing by such Underwriter through the Representatives expressly for use in such Issuer Free Writing Prospectus or Preliminary Prospectus, it being understood and agreed that the only such information furnished by any Underwriter consists of the information described as such in Section 7(b) hereof.

(d) *Emerging Growth Company.* From the time of initial filing of the Registration Statement with the Commission (or, if earlier, the first date on which the Company engaged directly or through any person authorized to act on its behalf in any Testing-the-Waters Communication) 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”). “Testing-the-Waters Communication” means any oral or written communication with potential investors undertaken in reliance on either Section 5(d) of, or Rule 163B under, the Securities Act.

(e) *Testing-the-Waters Materials.* The Company (i) has not alone engaged in any Testing-the-Waters Communications and (ii) has not authorized anyone to engage in Testing-the-Waters Communications.

(f) *Registration Statement and Prospectus.* The Registration Statement has been declared effective by the Commission. No order suspending the effectiveness of the Registration Statement has been issued by the Commission, and no proceeding for that purpose or pursuant to Section 8A of the Securities Act against the Company or related to the offering of the Securities has been initiated or, to the best knowledge of the Company, threatened by the Commission; as of the applicable effective date of the Registration Statement and any post-effective amendment thereto, the Registration Statement and any such post-effective amendment 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 in order to make the statements therein not misleading; and as of the date of the Prospectus and any amendment or supplement thereto and as of the Closing Date and as of the Additional Closing Date, as the case may be, the Prospectus will not contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided that the Company makes no representation or warranty with respect to any statements or omissions made in reliance upon and in conformity with information relating to any Underwriter furnished to the Company in writing by such Underwriter through the Representatives expressly for use in the Registration Statement and the Prospectus and any amendment or supplement thereto, it being understood and agreed that the only such information furnished by any Underwriter consists of the information described as such in Section 7(b) hereof.

(g) *Incorporated Documents.* The documents incorporated by reference in the Registration Statement, the Pricing Disclosure Package and the Prospectus, when they were filed with the Commission conformed in all material respects to the requirements of the Exchange Act, and none of such documents contained any untrue statement of a material fact or omitted to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading; and any further documents so filed and incorporated by reference in the Registration Statement, the Pricing Disclosure Package or the Prospectus, when such documents are filed with the Commission, will conform in all material respects to the requirements of the Exchange Act and will not contain 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.

(h) *Financial Statements.* The financial statements (including the related notes thereto) of the Company and its consolidated subsidiaries included or incorporated by reference in the Registration Statement, the Pricing Disclosure Package and the Prospectus comply in all material respects with the applicable requirements of the Securities Act and the Exchange Act, as applicable, and present fairly in all material respects the financial position of the Company and its consolidated subsidiaries as of the dates indicated and the results of their operations and the changes in their cash flows for the periods specified; such financial statements have been prepared in conformity with generally accepted accounting principles (“GAAP”) in the United States applied on a consistent basis throughout the periods covered thereby, except unaudited financial statements, which are subject to normal year-end adjustments and do not contain certain footnotes as permitted by the applicable rules of the Commission, and any supporting schedules included or incorporated by reference in the Registration Statement present fairly in all material respects the information required to be stated therein; and the other financial information included or incorporated by reference in the Registration Statement, the Pricing Disclosure Package and the Prospectus has been derived from the accounting records of the Company and its consolidated subsidiaries and presents fairly in all material respects the information shown thereby.

(i) *No Material Adverse Change.* Since the date of the most recent financial statements of the Company included or incorporated by reference in the Registration Statement, the Pricing Disclosure Package and the Prospectus, (i) there has not been any material change in the capital stock (other than the issuance of shares of Common Stock (x) upon exercise of stock options and warrants described as outstanding in, and the grant of options and awards under existing equity incentive plans described in, the Registration Statement, the Pricing Disclosure Package and the Prospectus and (y) in accordance with the terms of that certain Sales Agreement, dated August 8, 2019, by and between the Company and SVB Leerink LLC), short-term debt or long-term debt of the Company or any of its subsidiaries, or any dividend or distribution of any kind declared, set aside for payment, paid or made by the Company on any class of capital stock, or any material adverse change, or any development that would reasonably be expected to result in a prospective material adverse change, in or affecting the business, properties, management, financial position, stockholders' equity, results of operations or prospects of the Company and its subsidiaries taken as a whole; (ii) neither the Company nor any of its subsidiaries has entered into any transaction or agreement (whether or not in the ordinary course of business) that is material to the Company and its subsidiaries taken as a whole or incurred any liability or obligation, direct or contingent, that is material to the Company and its subsidiaries taken as a whole; and (iii) neither the Company nor any of its subsidiaries has sustained any loss or interference with its business that is material to the Company and its subsidiaries taken as a whole and that is either from fire, explosion, flood or other calamity, whether or not covered by insurance, or from any labor disturbance or dispute or any action, order or decree of any court or arbitrator or governmental or regulatory authority, except in each case as otherwise disclosed in the Registration Statement, the Pricing Disclosure Package and the Prospectus.

(j) *Organization and Good Standing.* The Company and each of its subsidiaries have been duly organized and are validly existing and in good standing under the laws of their respective jurisdictions of organization, are duly qualified to do business and are in good standing in each jurisdiction in which their respective ownership or lease of property or the conduct of their respective businesses requires such qualification, and have all power and authority necessary to own or hold their respective properties and to conduct the businesses in which they are engaged, except where the failure to be so qualified or in good standing or have such power or authority would not, individually or in the aggregate, reasonably be expected to have a material adverse effect on the business, properties, management, financial position, stockholders' equity, results of operations or prospects of the Company and its subsidiaries taken as a whole or on the performance by the Company of its obligations under this Agreement (a "Material Adverse Effect"). The Company does not own or control, directly or indirectly, any corporation, association or other entity other than the subsidiaries listed in Exhibit 21 to the Company's most recent Annual Report on Form 10-K filed with the Commission.

(k) *Capitalization.* The Company has an authorized capitalization as set forth in the Registration Statement, the Pricing Disclosure Package and the Prospectus under the heading “Capitalization”; all the outstanding shares of capital stock of the Company have been duly and validly authorized and issued and are fully paid and non-assessable and are not subject to any pre-emptive or similar rights that have not been duly waived or satisfied; except as described in or expressly contemplated by the Registration Statement, the Pricing Disclosure Package and the Prospectus, there are no outstanding rights (including, without limitation, pre-emptive rights that have not been duly waived or satisfied), warrants or options to acquire, or instruments convertible into or exchangeable for, any shares of capital stock or other equity interests in the Company or any of its subsidiaries, or any contract, commitment, agreement, understanding or arrangement of any kind relating to the issuance of any capital stock of the Company or any such subsidiary, any such convertible or exchangeable securities or any such rights, warrants or options; the capital stock of the Company conforms in all material respects to the description thereof contained in the Registration Statement, the Pricing Disclosure Package and the Prospectus; and all the outstanding shares of capital stock or other equity interests of each subsidiary owned, directly or indirectly, by the Company have been duly and validly authorized and issued, are fully paid and non-assessable and are owned directly or indirectly by the Company, free and clear of any lien, charge, encumbrance, security interest, restriction on voting or transfer or any other claim of any third party.

(l) *Stock Options.* With respect to the stock options (the “Stock Options”) granted pursuant to the stock-based compensation plans of the Company (the “Company Stock Plans”), (i) each Stock Option intended to qualify as an “incentive stock option” under Section 422 of the Internal Revenue Code of 1986, as amended (the “Code”), so qualifies, (ii) except, in each case, for any such matters as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect, each grant of a Stock Option was duly authorized no later than the date on which the grant of such Stock Option was by its terms to be effective by all necessary corporate action, including, as applicable, approval by the board of directors of the Company (or a duly constituted and authorized committee thereof) and any required stockholder approval by the necessary number of votes or written consents, and the award agreement governing such grant (if any) was duly executed and delivered by each party thereto, (iii) each such grant was made in accordance with the terms of the Company Stock Plans and all other applicable laws and regulatory rules or requirements, and (iv) each such grant was properly accounted for in accordance with GAAP in the financial statements (including the related notes) of the Company and disclosed in the Company’s filings with the Commission in accordance with the Exchange Act and all other applicable laws. The Company has not knowingly granted, and there is no and has been no policy or practice of the Company of granting, Stock Options prior to, or otherwise coordinating the grant of Stock Options with, the release or other public announcement of material information regarding the Company or its subsidiaries or their results of operations or prospects. The descriptions of Company Stock Plans and the options or other rights granted thereunder set forth in the Registration Statement, the Pricing Disclosure Package and the Prospectus accurately and fairly present the information required to be shown with respect to such Company Stock Plans and the options or other rights granted thereunder.

(m) *Due Authorization.* The Company has full right, power and authority to execute and deliver this Agreement and to perform its obligations hereunder; and all action required to be taken for the due and proper authorization, execution and delivery by it of this Agreement and the consummation by it of the transactions contemplated hereby has been duly and validly taken.

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

(o) *The Securities.* (i) The Shares to be issued and sold by the Company hereunder have been duly authorized by the Company and, when issued and delivered and paid for as provided herein, will be duly and validly issued, will be fully paid and nonassessable and will conform in all material respects to the descriptions thereof in the Registration Statement, the Pricing Disclosure Package and the Prospectus; (ii) the Warrants have been duly authorized by the Company and, when executed and delivered by the Company in accordance with this Agreement, will constitute valid and legally binding agreements of the Company enforceable against the Company in accordance with their terms, except as enforceability may be limited by applicable bankruptcy, insolvency or similar laws affecting creditors' rights generally or by equitable principles relating to enforceability; (iii) the Warrant Shares to be issued by the Company upon exercise of the Warrants, as provided therein, have been duly and validly authorized and, when issued and delivered upon exercise as provided under the Warrant, will be duly and validly issued, fully paid and non-assessable and will conform in all material respects to the descriptions thereof in the Registration Statement, the Pricing Disclosure Package and the Prospectus; and (iv) the issuance of the Securities and the Warrant Shares is not subject to any preemptive, rights of first refusal or similar rights that have not been duly waived or satisfied. When issued and delivered by the Company against payment therefor pursuant to this Agreement, the Underwriters will acquire good, marketable and valid title to their respective Shares, free and clear of all pledges, liens, security interests, charges, claims or encumbrances. The issuance and sale of the Securities as contemplated hereby will not cause any holder of any share capital, securities convertible into or exchangeable or exercisable for share capital or options, warrants or other rights to purchase share capital or any other securities of the Company to have any right to acquire any preferred shares of the Company. There are no restrictions upon the voting or transfer of the Stock under the Company's amended and restated certificate of incorporation or amended and restated bylaws or any agreement or other instrument to which the Company is a party or otherwise filed as an exhibit to the Registration Statement.

(p) *Description of the Underwriting Agreement.* This Agreement conforms in all material respects to the description thereof contained in the Registration Statement, the Pricing Disclosure Package and the Prospectus.

(q) *No Violation or Default.* Neither the Company nor any of its subsidiaries is (i) in violation of its charter or by-laws or similar organizational documents; (ii) in default, and no event has occurred that, with notice or lapse of time or both, would constitute such a default, in the due performance or observance of any term, covenant or condition contained in any indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which the Company or any of its subsidiaries is a party or by which the Company or any of its subsidiaries is bound or to which any property or asset of the Company or any of its subsidiaries is subject; or (iii) in violation of any applicable law or statute or any judgment, order, rule or regulation of any court or arbitrator or governmental or regulatory authority, except, in the case of clauses (ii) and (iii) above, for any such default or violation that would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(r) *No Conflicts.* The execution, delivery and performance by the Company of this Agreement and the Warrants by the Company, the issuance and sale of the Securities and the Warrant Shares by the Company and the consummation of the transactions contemplated by this Agreement and in the Warrants (with or without notice or lapse of time or both) will not (i) conflict with or result in a breach or violation of any of the terms or provisions of, or constitute a default under, result in the termination, modification or acceleration of, or result in the creation or imposition of any lien, charge or encumbrance upon any property, right or asset of the Company or any of its subsidiaries pursuant to, any indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which the Company or any of its subsidiaries is a party or by which the Company or any of its subsidiaries is bound or to which any property, right or asset of the Company or any of its subsidiaries is subject, (ii) result in any violation of the provisions of the charter or by-laws or similar organizational documents of the Company or any of its subsidiaries or (iii) result in the violation of any law or statute or any judgment, order, rule or regulation of any court or arbitrator or governmental or regulatory authority, except, in the case of clauses (i) and (iii) above, for any such conflict, breach, violation, default, lien, charge or encumbrance that would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(s) *No Consents Required.* No consent, approval, authorization, order, license, registration or qualification of or with any court or arbitrator or governmental or regulatory authority is required for the execution, delivery and performance by the Company of this Agreement, the issuance and sale of the Securities and the consummation of the transactions contemplated by this Agreement, except for the registration of the Securities under the Securities Act and such consents, approvals, authorizations, orders and registrations or qualifications as may be required by the Financial Industry Regulatory Authority, Inc. (“FINRA”) and under applicable state securities laws in connection with the purchase and distribution of the Securities by the Underwriters.

(t) *Legal Proceedings.* Except as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, there are no legal, governmental or regulatory investigations, actions, demands, claims, suits, arbitrations, inquiries or proceedings (“Actions”) pending to which the Company or any of its subsidiaries is or may be a party or to which any property of the Company or any of its subsidiaries is or may be the subject that, individually or in the aggregate, if determined adversely to the Company or any of its subsidiaries, would reasonably be expected to have a Material Adverse Effect; to the best knowledge of the Company, no such Actions are threatened or contemplated by any governmental or regulatory authority or threatened by others; and (i) there are no current or pending Actions that are required under the Securities Act to be described in the Registration Statement, the Pricing Disclosure Package or the Prospectus that are not so described in the Registration Statement, the Pricing Disclosure Package and the Prospectus and (ii) there are no statutes, regulations or contracts or other documents that are required under the Securities Act to be filed as exhibits to the Registration Statement or described in the Registration Statement, the Pricing Disclosure Package or the Prospectus that are not so filed as exhibits to the Registration Statement or described in the Registration Statement, the Pricing Disclosure Package and the Prospectus.

(u) *Independent Accountants.* PricewaterhouseCoopers LLP, whose report on the consolidated financial statements of the Company is filed with the Commission as part of the Company’s most recent Annual Report on Form 10-K filed with the Commission and incorporated by reference in the Registration Statement, the Pricing Disclosure Package and the Prospectus, is an independent registered public accounting firm with respect to the Company and its subsidiaries within the applicable rules and regulations adopted by the Commission and the Public Company Accounting Oversight Board (United States) and as required by the Securities Act. PricewaterhouseCoopers LLP has not been engaged by the Company to perform any “prohibited activities” or provided to the Company any “non-audit services” (as defined in Section 10A of the Exchange Act).



(v) *Title to Real and Personal Property.* The Company and its subsidiaries have good and marketable title in fee simple (in the case of real property) to, or have valid rights to lease or otherwise use, all items of real and personal property that are material to the businesses of the Company and its subsidiaries taken as a whole, in each case free and clear of all liens, encumbrances, claims and defects and imperfections of title except those that (i) do not materially interfere with the use made and proposed to be made of such property by the Company and its subsidiaries or (ii) would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect.

(w) *Intellectual Property.* The Company and its subsidiaries own or license rights to use inventions, patent rights, trademarks, service marks, trade names, trade dress, domain names, copyrights, licenses, know-how, trade secrets and other unpatented and/or unpatentable proprietary or confidential information, systems or procedures (including all registrations and applications for registration of, and all goodwill associated with, any of the foregoing, as applicable) (collectively, “Intellectual Property”) described in the Registration Statement, the Pricing Disclosure Package and the Prospectus as being owned by or licensed to the Company and its subsidiaries, and, to the best knowledge of the Company, all other Intellectual Property used in or reasonably necessary for the conduct of their business as currently conducted and as proposed to be conducted in the Registration Statement, Pricing Disclosure Package or the Prospectus, and, to the best knowledge of the Company, such Intellectual Property rights are valid and enforceable. To the best knowledge of the Company, the conduct of the business of the Company and its subsidiaries does not, and the proposed conduct of such business as disclosed in the Registration Statement, Pricing Disclosure Package or the Prospectus will not, infringe, misappropriate or otherwise violate any Intellectual Property rights of any others. Except as described in the Registration Statement, Pricing Disclosure Package or the Prospectus, there is no pending or, to the Company’s best knowledge, threatened action, suit, proceeding or claim by any others (i) that the Company or any of its subsidiaries infringes, misappropriates or otherwise violates the Intellectual Property of others, or (ii) challenging the validity, enforceability, scope or ownership of any Intellectual Property owned by or licensed to the Company or any of its subsidiaries or their rights therein. To the best knowledge of the Company, no third party has infringed, misappropriated or otherwise violated any Intellectual Property owned by or exclusively licensed to the Company or any of its subsidiaries. To the best knowledge of Company, none of the Intellectual Property used by the Company or any of its subsidiaries in the conduct of its business has been obtained or is being used by the Company or any of its subsidiaries in material violation of any contractual obligation binding on the Company or any of its subsidiaries. Except as set forth in the Registration Statement, Pricing Disclosure Package or the Prospectus, the Intellectual Property owned by the Company and its subsidiaries is solely owned by the Company or its subsidiaries free and clear of any liens or encumbrances. Neither the Company nor any of its subsidiaries is subject to any judgment, order, writ, injunction or decree of any court or any federal, state, local, foreign or other governmental department, commission, board, bureau, agency or instrumentality, domestic or foreign, or any arbitrator, nor has it entered into or is a party to any agreement made in settlement of any pending or threatened litigation, which materially restricts or impairs its use of any Intellectual Property. The Company and its subsidiaries have taken commercially reasonable steps, in accordance with normal industry practice for a company of like size and resources, to maintain the confidentiality of all Intellectual Property the value of which to the Company or any of its subsidiaries is contingent upon maintaining the confidentiality thereof, and neither the Company nor any of its subsidiaries is aware of any material disclosure of such Intellectual Property other than to employees, representatives, independent contractors, collaborators, licensors, licensees, agents and advisors of the Company and its subsidiaries, all of whom are bound by written obligations to maintain the confidentiality thereof. All founders, officers and other employees involved in the development of Intellectual Property for the Company and its subsidiaries have signed confidentiality and invention assignment agreements or similar agreements for the transfer, assignment, and/or licensing of Intellectual Property with the Company and its subsidiaries pursuant to which the Company and its subsidiaries either (i) have obtained ownership of and are the exclusive owners of, or (ii) have a valid and unrestricted right to exploit, sufficient for the conduct of their business, such Intellectual Property. No founder, officer or, to the Company’s best knowledge, other employee of the Company is in or has been in material violation of any term of any employment contract, patent disclosure agreement, invention assignment agreement, non-competition agreement, non-solicitation agreement, non-disclosure agreement or any restrictive covenant to or with a former employer where the basis of such violation relates to such founder, officer or employee’s relationship or activities with the Company or its subsidiaries, or otherwise relates to rights in the Intellectual Property owned or purported to be owned by or licensed to the Company or its subsidiaries.

(x) *Patents and Patent Applications.* All patents and patent applications owned by, co-owned by, or exclusively licensed to the Company or under which the Company has rights (“Patents and Patent Applications”) have been duly and properly filed and are being diligently prosecuted and maintained; the parties prosecuting, or that have prosecuted, the Patents and Patent Applications have complied with their duty of candor and disclosure to the applicable patent office in connection with such Patents and Patent Applications; and to the Company’s best knowledge after due inquiry, there is no prior art that has rendered or may render any Patent or Patent Application invalid or unpatentable.

(y) *No Undisclosed Relationships.* No relationship, direct or indirect, exists between or among the Company or any of its subsidiaries, on the one hand, and the directors, officers, stockholders, customers, suppliers or other affiliates of the Company or any of its subsidiaries, on the other, that is required by the Securities Act to be described in each of the Registration Statement and the Prospectus and that is not so described in such documents and in the Pricing Disclosure Package.

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

(aa) *Taxes.* Except as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, the Company and its subsidiaries have paid all federal, state, local and foreign taxes and filed all tax returns required to be paid or filed through the date hereof except for taxes being contested in good faith and for which reserves in accordance with GAAP in the United States have been taken; and except as otherwise disclosed in each of the Registration Statement, the Pricing Disclosure Package and the Prospectus, there is no tax deficiency that has been, or would reasonably be expected to be, asserted against the Company or any of its subsidiaries or any of their respective properties or assets that would reasonably be expected to have a Material Adverse Effect.

(bb) *Licenses and Permits.* Except as described in each of the Registration Statement, the Pricing Disclosure Package and the Prospectus, the Company and its subsidiaries possess all licenses, sub-licenses, certificates, permits and other authorizations issued by, and have made all declarations and filings with, the appropriate federal, state, local or foreign governmental or regulatory authorities that are necessary for the ownership or lease of their respective properties or the conduct of their respective businesses as described in each of the Registration Statement, the Pricing Disclosure Package and the Prospectus, except where the failure to possess or make the same would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect; and except as described in each of the Registration Statement, the Pricing Disclosure Package and the Prospectus, neither the Company nor any of its subsidiaries has received notice of any revocation or modification of any such license, sub-license, certificate, permit or authorization or has any reason to believe that any such license, sub-license, certificate, permit or authorization will not be renewed in the ordinary course, except where the failure to pay or file or where such revocation, modification or nonrenewal would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(cc) *No Labor Disputes.* No labor disturbance by or dispute with employees of the Company or any of its subsidiaries exists or, to the best knowledge of the Company, is contemplated or threatened, and the Company is not aware of any existing or imminent labor disturbance by, or dispute with, the employees of any of its or its subsidiaries' principal suppliers, contractors or customers, except as would not reasonably be expected to have a Material Adverse Effect. Neither the Company nor any of its subsidiaries is a party to any collective bargaining agreement.

(dd) *Certain Environmental Matters.* (i) The Company and its subsidiaries (A) are in compliance with all applicable federal, state, local and foreign laws (including common law), rules, regulations, requirements, decisions, judgments, decrees, orders and other legally enforceable requirements relating to pollution or the protection of human health or safety, the environment or natural resources (collectively, "Environmental Laws"); (B) have obtained and are and have been in compliance with all permits, licenses, certificates or other authorizations or approvals required under any Environmental Laws to conduct their respective businesses; (C) are not a party to any order, decree or agreement that imposes any obligation or liability under any Environmental Law; and (D) have not received notice of any actual or potential liability or obligation under or relating to, or any actual or potential violation of, any Environmental Laws, including for the investigation or remediation of any disposal or release of hazardous or toxic substances or wastes, pollutants or contaminants, and have no knowledge of any event or condition that would reasonably be expected to result in any such notice; (ii) there are no costs or liabilities associated with Environmental Laws of or relating to the Company or its subsidiaries, except in the case of each of (i) and (ii) above, for any such matter as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect; and (iii) except as described in each of the Pricing Disclosure Package and the Prospectus, (A) there is no proceeding that is pending, or, to the Company's best knowledge, contemplated, against the Company or any of its subsidiaries under any Environmental Laws in which a governmental entity is also a party, other than such proceeding regarding which it is reasonably believed no monetary sanctions of \$100,000 or more will be imposed, (B) the Company and its subsidiaries are not aware of any facts or issues regarding compliance with Environmental Laws that would reasonably be expected to have a material effect on the capital expenditures, earnings or competitive position of the Company and its subsidiaries, and (C) none of the Company or its subsidiaries anticipates material capital expenditures relating to any Environmental Laws.

(ee) *Compliance with ERISA.* (i) Each employee benefit plan, within the meaning of Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended (“ERISA”), for which the Company or any member of its “Controlled Group” (defined as any entity, whether or not incorporated, that is under common control with the Company within the meaning of Section 4001(a)(14) of ERISA or any entity that would be regarded as a single employer with the Company under Section 414(b),(c),(m) or (o) of the Code) would have any liability (each, a “Plan”) has been maintained in compliance with its terms and the requirements of any applicable statutes, orders, rules and regulations, including but not limited to ERISA and the Code, in all material respects; (ii) no prohibited transaction, within the meaning of Section 406 of ERISA or Section 4975 of the Code, has occurred with respect to any Plan, excluding transactions effected pursuant to a statutory or administrative exemption; (iii) no Plan is or ever has been subject to Section 302 of ERISA, Title IV of ERISA or Section 412 of the Code and no Plan is a “multiemployer plan” within the meaning of Section 4001(a)(3) of ERISA; (iv) each Plan that is intended to be qualified under Section 401(a) of the Code is subject to a favorable determination letter or advisory opinion, as applicable, from the IRS and no event has occurred and no condition exists, whether by action or by failure to act, that, to the Company’s best knowledge, is reasonably likely to result in the revocation of any such determination or opinion, as applicable, and (v) none of the following events has occurred or, to the Company’s best knowledge, is reasonably likely to occur: (A) a material increase in the aggregate amount of contributions required to be made to all Plans by the Company or its Controlled Group affiliates in the current fiscal year of the Company and its Controlled Group affiliates compared to the amount of such contributions made in the Company’s and its Controlled Group affiliates’ most recently completed fiscal year; or (B) a material increase in the Company and its subsidiaries’ “accumulated post-retirement benefit obligations” (within the meaning of Accounting Standards Codification Topic 715-60) compared to the amount of such obligations in the Company and its subsidiaries’ most recently completed fiscal year, except in each case with respect to the events or conditions set forth in (i) through (v) hereof, as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

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

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

(hh) *Insurance.* The Company and its subsidiaries have insurance covering their respective properties, operations, personnel and businesses, including business interruption insurance and policies covering the Company and its subsidiaries for product liability claims and clinical trial liability claims, which insurance is in amounts and insures against such losses and risks as are adequate to protect the Company and its subsidiaries and their respective businesses; and neither the Company nor any of its subsidiaries has (i) received notice from any insurer or agent of such insurer that capital improvements or other expenditures are required or necessary to be made in order to continue such insurance or (ii) any reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage at reasonable cost from similar insurers as may be necessary to continue its business.

(ii) *Cyber Security; Data Protection.* 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 operations 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 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 all personal, personally identifiable, sensitive, confidential or regulated data ("Personal Data")) used in connection with their businesses, and 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 applicable 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. The Company and its subsidiaries have taken all required actions to prepare to comply with the European Union General Data Protection Regulation (and all other applicable laws and regulations with respect to Personal Data that have been announced as of the date hereof as becoming effective within 12 months after the date hereof, and for which any non-compliance with the same would be reasonably likely to create a material liability) as soon as they take effect.

(jj) *No Unlawful Payments.* Neither the Company nor any of its subsidiaries nor, any director, officer or employee of the Company or any of its subsidiaries nor, to the best knowledge of the Company, any agent, affiliate or other person associated with or acting on behalf of the Company or any of its subsidiaries has (i) used any corporate funds for any unlawful contribution, gift, entertainment or other unlawful expense relating to political activity; (ii) made or taken an act in furtherance of an offer, promise or authorization of any direct or indirect unlawful payment or benefit to any foreign or domestic government official or employee, including of any government-owned or controlled entity or of a public international organization, or any person acting in an official capacity for or on behalf of any of the foregoing, or any political party or party official or candidate for political office; (iii) violated or is in violation of any provision of the Foreign Corrupt Practices Act of 1977, as amended, or any applicable law or regulation implementing the OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions, or committed an offence under the Bribery Act 2010 of the United Kingdom or any other applicable anti-bribery or anti-corruption law; or (iv) made, offered, agreed, requested or taken an act in furtherance of any unlawful bribe or other unlawful benefit, including, without limitation, any rebate, payoff, influence payment, kickback or other unlawful or improper payment or benefit. The Company and its subsidiaries have instituted, maintain and enforce, and will continue to maintain and enforce policies and procedures designed to promote and ensure compliance with all applicable anti-bribery and anti-corruption laws.

(kk) *Compliance with Anti-Money Laundering Laws.* The operations of the Company and its subsidiaries are and have been conducted at all times in compliance with applicable financial recordkeeping and reporting requirements, including those of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the applicable money laundering statutes of all jurisdictions where the Company or any of its subsidiaries conducts business, the rules and regulations thereunder and any related or similar rules, regulations or guidelines issued, administered or enforced by any governmental agency (collectively, the “Anti-Money Laundering Laws”), and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any of its subsidiaries with respect to the Anti-Money Laundering Laws is pending or, to the best knowledge of the Company, threatened.

(ll) *No Conflicts with Sanctions Laws.* Neither the Company nor any of its subsidiaries, directors, officers, or employees, nor, to the best knowledge of the Company, any agent, affiliate or other person associated with or acting on behalf of the Company or any of its subsidiaries is currently the subject or the target of any sanctions administered or enforced by the U.S. government (including, without limitation, the Office of Foreign Assets Control of the U.S. Department of the Treasury (“OFAC”) or the U.S. Department of State and including, without limitation, the designation as a “specially designated national” or “blocked person”), the United Nations Security Council (“UNSC”), the European Union, Her Majesty’s Treasury (“HMT”) or other relevant sanctions authority (collectively, “Sanctions”), nor is the Company or any of its subsidiaries located, organized or resident in a country or territory that is the subject or target of Sanctions, including, without limitation, Crimea, Cuba, Iran, North Korea and Syria (each, a “Sanctioned Country”); and the Company will not directly or indirectly use the proceeds of the offering of the Securities hereunder, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other person or entity (i) to fund or facilitate any activities of or business with any person that, at the time of such funding or facilitation, is the subject or target of Sanctions, (ii) to fund or facilitate any activities of or business in any Sanctioned Country or (iii) in any other manner that will result in a violation by any person (including any person participating in the transaction, whether as underwriter, advisor, investor or otherwise) of Sanctions. Since their respective inceptions, 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.

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

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

(oo) *No Registration Rights.* No person has the right to require the Company or any of its subsidiaries to register any securities for sale under the Securities Act by reason of the filing of the Registration Statement or the Prospectus with the Commission or the issuance and sale of the Securities, other than rights that have been validly waived.

(pp) *No Stabilization.* Neither the Company nor any of its subsidiaries has taken, directly or indirectly, any action designed to or that would reasonably be expected to cause or result in any stabilization or manipulation of the price of any Securities.

(qq) *Margin Rules.* Neither the issuance, sale and delivery of the Securities nor the application of the proceeds thereof by the Company as described in each of the Registration Statement, the Pricing Disclosure Package and the Prospectus will violate Regulation T, U or X of the Board of Governors of the Federal Reserve System or any other regulation of such Board of Governors.

(rr) *Forward-Looking Statements.* No forward-looking statement (within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act) included or incorporated by reference in any of the Registration Statement, the Pricing Disclosure Package or the Prospectus has been made or reaffirmed without a reasonable basis or has been disclosed other than in good faith. No such statement was made with the knowledge of a director or executive officer of the Company that was false or misleading.

(ss) *Statistical and Market Data.* Nothing has come to the attention of the Company that has caused the Company to believe that the statistical and market-related data included or incorporated by reference in each of the Registration Statement, the Pricing Disclosure Package and the Prospectus is not based on or derived from sources that are reliable and accurate in all material respects.

(tt) *Sarbanes-Oxley Act.* 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 with any provision of the Sarbanes-Oxley Act of 2002, as amended and the rules and regulations promulgated in connection therewith (the "Sarbanes-Oxley Act"), including Section 402 related to loans and Sections 302 and 906 related to certifications.



(uu) *Status under the Securities Act.* At the time of filing the Registration Statement and any post-effective amendment thereto, at the earliest time thereafter that the Company or any offering participant made a *bona fide* offer (within the meaning of Rule 164(h)(2) under the Securities Act) of the Securities and at the date hereof, the Company was not and is not an “ineligible issuer,” as defined in Rule 405 under the Securities Act. The Company has paid the registration fee for this offering pursuant to the applicable rules under the Securities Act.

(vv) *No Ratings.* There are (and prior to the Closing Date, will be) no debt securities, convertible securities or preferred stock issued or guaranteed by the Company or any of its subsidiaries that are rated by a “nationally recognized statistical rating organization”, as such term is defined in Section 3(a)(62) under the Exchange Act.

(ww) *No Indebtedness.* Except as otherwise disclosed in the Registration Statement, the Pricing Disclosure Package and the Prospectus, the Company and its subsidiaries have no outstanding indebtedness for borrowed money.

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

(yy) *Preclinical and Clinical Trials*. Except as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus: (i) the preclinical and clinical studies and trials conducted by or, to the best knowledge of the Company after due inquiry, that were conducted on behalf of or sponsored by the Company or its subsidiaries, or in which the Company or its subsidiaries have participated (collectively “Company Trials”), in each case including the Company’s studies and trials that are described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, or the results of which are referred to in the Registration Statement, the Pricing Disclosure Package and the Prospectus, as applicable, were, and if still pending are, being conducted in all material respects in accordance with all applicable standard medical and scientific research standards and procedures and all applicable statutes and all applicable rules and regulations of the U.S. Food and Drug Administration (“FDA”), the Department of Health and Human Services and comparable regulatory agencies outside of the United States to which they are subject, including the European Medicines Agency (collectively, the “Regulatory Authorities”), and applicable current Good Clinical Practice and Good Laboratory Practice requirements as detailed in applicable statutes, rules and regulations of an applicable Regulatory Authority; (ii) the descriptions in the Registration Statement, the Pricing Disclosure Package and the Prospectus of the Company Trials, including the results of the Company Trials, are accurate and complete descriptions in all material respects and fairly present the data derived therefrom; (iii) the Company has no knowledge of any other studies or trials not described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, the results of which are inconsistent with or call into question the results of the Company Trials described or referred to in the Registration Statement, the Pricing Disclosure Package and the Prospectus; (iv) neither the Company nor any of its subsidiaries, nor, to the Company’s best knowledge after due inquiry, any of its collaboration partners, have received any written notices, written correspondence or other written communications from the Regulatory Authorities or any other governmental agency requiring or threatening the termination, material modification or suspension of any Company Trial that is described in the Registration Statement, the Pricing Disclosure Package and the Prospectus or the results of which are referred to in the Registration Statement, the Pricing Disclosure Package and the Prospectus, other than ordinary course communications with respect to modifications in connection with the design and implementation of such Company Trials, and, to the Company’s best knowledge after due inquiry, there are no reasonable grounds for the same; (v) to the Company’s best knowledge after due inquiry, the Company has obtained (or caused to be obtained) informed consent by or on behalf of each human subject who participated in a Company Trial; (vi) in using or disclosing patient information received by the Company in connection with the Company Trials, the Company has complied in all material respects with all applicable laws and regulatory rules or requirements; and (vii) to the Company’s best knowledge after due inquiry, none of the Company Trials involved any investigator who has been disqualified as a clinical investigator by any Regulatory Authority or has been found by any Regulatory Authority to have engaged in scientific misconduct.

(zz) *Product Candidates.* Except as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, the Company: (i) has operated and currently operates its business in compliance in all material respects with applicable provisions of the Health Care Laws (as defined below) applicable to the ownership, testing, development, manufacture, packaging, processing, use, distribution, storage, import, export or disposal of any of the Company's product candidates; (ii) has not received any FDA Form 483, written notice of adverse finding, warning letter, untitled letter or other written correspondence or written notice from any court or arbitrator, Regulatory Authority or other governmental or regulatory authority alleging or asserting non-compliance with (A) any Health Care Laws or (B) any licenses, certificates, approvals, clearances, exemptions, authorizations, permits and supplements or amendments thereto required by any such Health Care Laws ("Regulatory Authorizations"); (iii) possesses all Regulatory Authorizations required to conduct its business as currently conducted and such Regulatory Authorizations are valid and in full force and effect and the Company is not in violation, in any material respect, of any term of any such Regulatory Authorizations; (iv) has not received written notice of any claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from any of the Regulatory Authorities or any other third party alleging that any product operation or activity is in material violation of any Health Care Laws or Regulatory Authorizations and has no knowledge that any of the Regulatory Authorities or any other third party is considering any such claim, litigation, arbitration, action, suit, investigation or proceeding that would, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect; (v) has not received written notice that any of the Regulatory Authorities has taken, is taking or intends to take action to limit, suspend, modify or revoke any Regulatory Authorizations and has no knowledge that any of the Regulatory Authorities is considering such action that would, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect; (vi) is not a party to or have any ongoing reporting obligations pursuant to any corporate integrity agreements, deferred prosecution agreements, monitoring agreements, consent decrees, settlement orders, plans of correction or similar agreements with or imposed by any Regulatory Authority; and (vii)(A) has not, nor have any of its directors, officers or, to the Company's best knowledge, employees, been excluded, suspended or debarred by a Regulatory Authority from participation in any government health care program or human clinical research or (B), to the best knowledge of the Company after due inquiry, is not, and none of its directors, officers or employees is, subject to a governmental inquiry, investigation, proceeding, or other similar action that would reasonably be expected to result in debarment, suspension, or exclusion by a Regulatory Authority. For purposes of this Agreement, "Health Care Laws" means, to the extent applicable to the Company, all health care laws applicable to the Company, including, but not limited to: Title XVIII of the Social Security Act, 42 U.S.C. §§ 1395-1395hhh (the Medicare statute); Title XIX of the Social Security Act, 42 U.S.C. §§ 1396-1396v (the Medicaid statute); the Federal Anti-Kickback Statute, 42 U.S.C. § 1320a-7b(b); the civil False Claims Act, 31 U.S.C. §§ 3729 et seq.; the criminal False Claims Act 42 U.S.C. 1320a-7b(a); any criminal laws relating to health care fraud and abuse, including but not limited to 18 U.S.C. Sections 286 and 287 and the health care fraud criminal provisions under the Health Insurance Portability and Accountability Act of 1996, 42 U.S.C. §§ 1320d et seq., ("HIPAA"); the Physician Payments Sunshine Act, 42 U.S.C. § 1320a-7h; the Exclusion Laws, 42 U.S.C. § 1320a-7; the Federal Food, Drug, and Cosmetic Act, 21 U.S.C. §§ 301 et seq.; the Public Health Service Act, 42 U.S.C. §§ 201 et seq.; the regulations promulgated pursuant to such laws; and any similar federal, state and local laws and regulations, in each case of the foregoing laws and regulations, as amended from time to time.

(aaa) *Manufacturing.* To the Company's best knowledge, the contract manufacturing facilities and GMP operations of its suppliers are operated in compliance in all material respects with all applicable statutes, rules and regulations of the Regulatory Authorities.

(bbb) *Regulatory Filings.* The Company has not failed to file with the Regulatory Authorities any required filing, declaration, listing, registration, report or submission with respect to the Company's product candidates that are described or referred to in the Registration Statement, the Pricing Disclosure Package and the Prospectus; all such filings, declarations, reports or submissions were in material compliance with the applicable Health Care Laws when filed; and no material deficiencies regarding compliance with applicable law have been asserted by any Regulatory Authority with respect to any such filings, declarations, reports or submissions.

(ccc) *Exchange Act Requirements Stock Exchange Listing.* The Company is subject to and in compliance in all material respects with the reporting requirements of Section 13 or Section 15(d) of the Exchange Act. The Stock is registered pursuant to Section 12(b) of the Exchange Act and is listed on the Nasdaq Global Select Market (the "Nasdaq Market"), and the Company has taken no action designed to, or reasonably likely to have the effect of, terminating the registration of the Stock under the Exchange Act or delisting the Stock from the Nasdaq Market, nor has the Company received any notification that the Commission or the Nasdaq Market is contemplating terminating such registration or listing. The Company is in compliance with the current listing standards of the Nasdaq Market. The Company has caused a Notification of Listing of Additional Shares to be filed with the Nasdaq Market with respect to the Shares.

(ddd) *Form S-3 Eligibility; Shell Company.* The Company and the transactions contemplated by this Agreement meet the requirements for, and comply with the conditions for the use of, Form S-3 under the Securities Act, including Instruction I.B.1 of Form S-3. The Company is not a shell company (as defined in Rule 405 under the Securities Act) and has not been a shell company for at least 12 calendar months previously.

(eee) *Independent Directors.* Each of the independent directors named in the Registration Statement, the Pricing Disclosure Package and Prospectus satisfies the independence standards established by the Nasdaq Market and, with respect to members of the Company's audit committee, the enhanced independence standards contained in Rule 10A-3(b)(1) promulgated by the Commission under the Exchange Act.

(fff) *No Integration.* Neither the Company nor, to the Company's knowledge, any of its affiliates (within the meaning of Rule 144 under the Securities Act) has, prior to the date hereof, made any offer or sale of any securities which could be "integrated" (within the meaning of the Securities Act) with the offer and sale of the Securities hereunder.

4. Further Agreements of the Company. The Company covenants and agrees with each Underwriter that:

(a) *Required Filings.* The Company will file the final Prospectus with the Commission within the time periods specified by Rule 424(b) and Rule 430A, 430B or 430C under the Securities Act, will file any Issuer Free Writing Prospectus to the extent required by Rule 433 under the Securities Act; and the Company will file promptly all reports and any definitive proxy or information statements required to be filed by the Company with the Commission pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act subsequent to the date of the Prospectus and for so long as the delivery of a prospectus is required in connection with the offering or sale of the Securities; and the Company will furnish copies of the Prospectus and each Issuer Free Writing Prospectus (to the extent not previously delivered) to the Underwriters in New York City prior to 10:00 A.M., New York City time, on the business day next succeeding the date of this Agreement in such quantities as the Representatives may reasonably request.

(b) *Delivery of Copies.* The Company will deliver, without charge, (i) to the Representatives upon request two signed copies of the Registration Statement as originally filed and each amendment thereto, in each case including all exhibits and consents filed therewith and documents incorporated by reference therein; and (ii) to each Underwriter (A) a conformed copy of the Registration Statement as originally filed and each amendment thereto (without exhibits) and (B) during the Prospectus Delivery Period (as defined below), as many copies of the Prospectus (including all amendments and supplements thereto and each Issuer Free Writing Prospectus) as the Representatives may reasonably request. As used herein, the term "Prospectus Delivery Period" means such period of time after the first date of the public offering of the Securities as in the opinion of counsel for the Underwriters a prospectus relating to the Securities is required by law to be delivered (or required to be delivered but for Rule 172 under the Securities Act) in connection with sales of the Securities by any Underwriter or dealer.

(c) *Amendments or Supplements, Issuer Free Writing Prospectuses.* Before making, preparing, using, authorizing, approving, referring to or filing any Issuer Free Writing Prospectus, and before filing any amendment or supplement to the Registration Statement, the Pricing Disclosure Package or the Prospectus, whether before or after the time that the Registration Statement becomes effective, the Company will furnish to the Representatives and counsel for the Underwriters a copy of the proposed Issuer Free Writing Prospectus, amendment or supplement for review and will not make, prepare, use, authorize, approve, refer to or file any such Issuer Free Writing Prospectus or file any such proposed amendment or supplement to which the Representatives reasonably object.

(d) *Notice to the Representatives.* The Company will advise the Representatives promptly, and confirm such advice in writing (which confirmations may be delivered by e-mail), (i) when the Registration Statement has become effective; (ii) when any amendment to the Registration Statement has been filed or becomes effective; (iii) when any supplement to the Pricing Disclosure Package, the Prospectus, any Issuer Free Writing Prospectus or any amendment to the Prospectus has been filed or distributed; (iv) of any request by the Commission for any amendment to the Registration Statement or any amendment or supplement to the Prospectus or the receipt of any comments from the Commission relating to the Registration Statement or any other request by the Commission for any additional information including, but not limited to; (v) of the issuance by the Commission or any other applicable governmental or regulatory authority of any order suspending the effectiveness of the Registration Statement or preventing or suspending the use of any Preliminary Prospectus, any of the Pricing Disclosure Package, the Prospectus or the initiation or threatening of any proceeding for that purpose or pursuant to Section 8A of the Securities Act; (vi) of the occurrence of any event or development within the Prospectus Delivery Period as a result of which the Prospectus, any of the Pricing Disclosure Package, any Issuer Free Writing Prospectus as then amended or supplemented would include 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 existing when the Prospectus, the Pricing Disclosure Package or any such Issuer Free Writing Prospectus is delivered to a purchaser, not misleading; (vii) of the receipt by the Company of any notice of objection of the Commission to the use of the Registration Statement or any post-effective amendment thereto pursuant to Rule 401(g)(2) under the Securities Act; and (viii) of the receipt by the Company of any notice with respect to any suspension of the qualification of the Securities for offer and sale in any jurisdiction or the initiation or threatening of any proceeding for such purpose; and the Company will use its commercially reasonable best efforts to prevent the issuance of any such order suspending the effectiveness of the Registration Statement, preventing or suspending the use of any Preliminary Prospectus, any of the Pricing Disclosure Package or the Prospectus or suspending any such qualification of the Securities and, if any such order is issued, will obtain as soon as possible the withdrawal thereof.

(e) *Ongoing Compliance.* (1) If during the Prospectus Delivery Period (i) any event or development shall occur or condition shall exist as a result of which the Prospectus as then amended or supplemented would include any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in the light of the circumstances existing when the Prospectus is delivered to a purchaser, not misleading or (ii) it is necessary to amend or supplement the Prospectus to comply with applicable law, the Company will promptly notify the Underwriters thereof and forthwith prepare and, subject to paragraph (c) above, file with the Commission and furnish to the Underwriters and to such dealers as the Representatives may designate such amendments or supplements to the Prospectus (or any document to be filed with the Commission and incorporated by reference therein) as may be necessary so that the statements in the Prospectus as so amended or supplemented (or any document to be filed with the Commission and incorporated by reference therein) will not, in the light of the circumstances existing when the Prospectus is delivered to a purchaser, be misleading or so that the Prospectus will comply with applicable law and (2) if at any time prior to the Closing Date or any Additional Closing Date (i) any event or development shall occur or condition shall exist as a result of which the Pricing Disclosure Package as then amended or supplemented would include any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in the light of the circumstances existing when the Pricing Disclosure Package is delivered to a purchaser, not misleading or (ii) it is necessary to amend or supplement the Pricing Disclosure Package to comply with applicable law, the Company will promptly notify the Underwriters thereof and forthwith prepare and, subject to paragraph (c) above, file with the Commission (to the extent required) and furnish to the Underwriters and to such dealers as the Representatives may designate such amendments or supplements to the Pricing Disclosure Package (or any document to be filed with the Commission and incorporated by reference therein) as may be necessary so that the statements in the Pricing Disclosure Package as so amended or supplemented will not, in the light of the circumstances existing when the Pricing Disclosure Package is delivered to a purchaser, be misleading or so that the Pricing Disclosure Package will comply with applicable law.

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

(g) *Earning Statement.* The Company will make generally available to its security holders and the Representatives as soon as practicable an earning statement that satisfies the provisions of Section 11(a) of the Securities Act and Rule 158 of the Commission promulgated thereunder covering a period of at least twelve months beginning with the first fiscal quarter of the Company occurring after the “effective date” (as defined in Rule 158) of the Registration Statement; provided that the Company will be deemed to have furnished such statements to its security holders and the Representatives to the extent they are filed on the Commission’s Electronic Data Gathering, Analysis, and Retrieval system (“EDGAR”) or any successor system.

(h) *Clear Market.* For a period of 60 days after the date of the Prospectus, the Company will not (i) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, or file with, or submit to, the Commission a registration statement under the Securities Act relating to, any shares of Stock or any securities convertible into or exercisable or exchangeable for Stock, or publicly disclose the intention to make any offer, sale, pledge, disposition, submission or filing (other than filings on Form S-8 relating to the Company Stock Plans), or (ii) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the Stock or any such other securities, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of Stock or such other securities, in cash or otherwise, without the prior written consent of the Representatives, other than (A) the Securities to be sold hereunder and the delivery of Warrant Shares upon exercise of the Warrants, (B) any shares of Stock of the Company issued upon the exercise of options granted under Company Stock Plans and (C) the filing by the Company of any registration statement on Form S-8 or a successor form thereto relating to a Company Stock Plan described in the Registration Statement, the Pricing Disclosure Package and the Prospectus.

- (i) *Use of Proceeds.* The Company will apply the net proceeds from the sale of the Securities as described in each of the Registration Statement, the Pricing Disclosure Package and the Prospectus under the heading “Use of proceeds”.
- (j) *No Stabilization.* Neither the Company nor its subsidiaries or affiliates will take, directly or indirectly, any action designed to or that would reasonably be expected to cause or result in any stabilization or manipulation of the price of the Stock.
- (k) *Exchange Listing.* The Company will use its reasonable best efforts to list, subject to notice of issuance, the Shares on the Nasdaq Market.
- (l) *Reports.* For a period of three years from the date of this Agreement, the Company will furnish to the Representatives, as soon as they are available, copies of all reports or other communications (financial or other) furnished to holders of the Shares or the Warrants, and copies of any reports and financial statements furnished to or filed with the Commission or any national securities exchange or automatic quotation system; provided the Company will be deemed to have furnished such reports and financial statements to the Representatives to the extent they are filed on EDGAR.
- (m) *Record Retention.* The Company will, pursuant to reasonable procedures developed in good faith, retain copies of each Issuer Free Writing Prospectus that is not filed with the Commission in accordance with Rule 433 under the Securities Act.
- (n) *Emerging Growth Company.* 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) completion of the distribution of Securities within the meaning of the Securities Act and (ii) completion of the 60-day restricted period referred to in Section 4(h) hereof.



5. Certain Agreements of the Underwriters. Each Underwriter hereby represents and agrees that:

(a) It has not used, authorized use of, referred to or participated in the planning for use of, and will not use, authorize use of, refer to or participate in the planning for use of, any “free writing prospectus”, as defined in Rule 405 under the Securities Act (which term includes use of any written information furnished to the Commission by the Company and not incorporated by reference into the Registration Statement and any press release issued by the Company) other than (i) a free writing prospectus that contains no “issuer information” (as defined in Rule 433(h) (2) under the Securities Act) that was not included (including through incorporation by reference) in the Preliminary Prospectus or a previously filed Issuer Free Writing Prospectus, (ii) any Issuer Free Writing Prospectus listed on Annex A or prepared pursuant to Section 3(c) or Section 4(c) above (including any electronic road show), or (iii) any free writing prospectus prepared by such Underwriter and approved by the Company in advance in writing (each such free writing prospectus referred to in clauses (i) or (iii), an “Underwriter Free Writing Prospectus”).

(b) It has not and will not, without the prior written consent of the Company, use any free writing prospectus that contains the final terms of the Securities unless such terms have previously been included in a free writing prospectus filed with the Commission; provided that Underwriters may use a term sheet, if any, substantially in the form of Annex B hereto without the consent of the Company; provided further that any Underwriter using such term sheet shall notify the Company, and provide a copy of such term sheet to the Company, prior to, or substantially concurrently with, the first use of such term sheet.

(c) It is not subject to any pending proceeding under Section 8A of the Securities Act with respect to the offering (and will promptly notify the Company if any such proceeding against it is initiated during the Prospectus Delivery Period).

6. Conditions of Underwriters’ Obligations. The obligation of each Underwriter to purchase the Underwritten Securities on the Closing Date or the Option Shares on the Additional Closing Date, as the case may be, as provided herein is subject to the performance by the Company of its covenants and other obligations hereunder and to the following additional conditions:

(a) *Registration Compliance; No Stop Order.* No order suspending the effectiveness of the Registration Statement shall be in effect, and no proceeding for such purpose or pursuant to Section 8A under the Securities Act shall be pending before or threatened by the Commission; the Prospectus and each Issuer Free Writing Prospectus shall have been timely filed with the Commission under the Securities Act (in the case of an Issuer Free Writing Prospectus, to the extent required by Rule 433 under the Securities Act) and in accordance with Section 4(a) hereof; and all requests by the Commission for additional information shall have been complied with to the reasonable satisfaction of the Representatives.

(b) *Representations and Warranties.* The representations and warranties of the Company contained herein shall be true and correct on the date hereof and on and as of the Closing Date or the Additional Closing Date, as the case may be; and the statements of the Company and its officers made in any certificates delivered pursuant to this Agreement shall be true and correct on and as of the Closing Date or the Additional Closing Date, as the case may be.

(c) *No Material Adverse Change.* No event or condition of a type described in Section 3(i) hereof shall have occurred or shall exist, which event or condition is not described in the Pricing Disclosure Package (excluding any amendment or supplement thereto) and the Prospectus (excluding any amendment or supplement thereto) and the effect of which in the judgment of the Representatives makes it impracticable or inadvisable to proceed with the offering, sale or delivery of the Securities on the Closing Date or the Additional Closing Date, as the case may be, on the terms and in the manner contemplated by this Agreement, the Pricing Disclosure Package and the Prospectus.

(d) *Officer's Certificate.* The Representatives shall have received on and as of the Closing Date or the Additional Closing Date, as the case may be, a certificate of the chief financial officer of the Company and one additional senior executive officer of the Company who is satisfactory to the Representatives (i) confirming that such officers have carefully reviewed the Registration Statement, the Pricing Disclosure Package and the Prospectus and, to the knowledge of such officers, the representations set forth in Sections 3(b) and 3(d) hereof are true and correct, (ii) confirming that the other representations and warranties of the Company in this Agreement are true and correct and that the Company has complied with all agreements and satisfied all conditions on its part to be performed or satisfied hereunder at or prior to the Closing Date or the Additional Closing Date, as the case may be, and (iii) to the effect set forth in paragraphs (a) and (c) above.

(e) *Comfort Letters.* On the date of this Agreement and on the Closing Date or the Additional Closing Date, as the case may be, PricewaterhouseCoopers LLP shall have furnished to the Representatives, at the request of the Company, letters, dated the respective dates of delivery thereof and addressed to the Underwriters, in form and substance reasonably satisfactory to the Representatives, containing statements and information of the type customarily included in accountants' "comfort letters" to underwriters with respect to the financial statements and certain financial information contained or incorporated by reference in each of the Registration Statement, the Pricing Disclosure Package and the Prospectus; provided that the letter delivered on the Closing Date or the Additional Closing Date, as the case may be, shall use a "cut-off" date no more than three business days prior to such Closing Date or such Additional Closing Date, as the case may be.

(f) *Opinion and 10b-5 Statement of Counsel for the Company.* Morgan, Lewis & Bockius LLP, counsel for the Company, shall have furnished to the Representatives, at the request of the Company, their written opinion and 10b-5 statement, dated the Closing Date or the Additional Closing Date, as the case may be, and addressed to the Underwriters, in form and substance reasonably satisfactory to the Representatives.

(g) *Opinion of Intellectual Property Counsel for the Company.* J.A. Kemp & Co., intellectual property counsel for the Company, shall have furnished to the Representatives, at the request of the Company, their written opinion, dated the Closing Date or the Additional Closing Date, as the case may be, and addressed to the Underwriters, in form and substance reasonably satisfactory to the Representatives.

(h) *Opinion and 10b-5 Statement of Counsel for the Underwriters.* The Representatives shall have received on and as of the Closing Date or the Additional Closing Date, as the case may be, an opinion and 10b-5 statement, addressed to the Underwriters, of Cravath, Swaine & Moore LLP, counsel for the Underwriters, with respect to such matters as the Representatives may reasonably request, and such counsel shall have received such documents and information as they may reasonably request to enable them to pass upon such matters.

(i) *No Legal Impediment to Issuance and Sale.* No action shall have been taken and no statute, rule, regulation or order shall have been enacted, adopted or issued by any federal, state or foreign governmental or regulatory authority that would, as of the Closing Date or the Additional Closing Date, as the case may be, prevent the issuance or sale of the Securities; and no injunction or order of any federal, state or foreign court shall have been issued that would, as of the Closing Date or the Additional Closing Date, as the case may be, prevent the issuance or sale of the Securities.

(j) *Good Standing.* The Representatives shall have received on and as of the Closing Date or the Additional Closing Date, as the case may be, satisfactory evidence of the good standing of the Company and its subsidiaries in their respective jurisdictions of organization and their good standing in such other jurisdictions as the Representatives may reasonably request, in each case in writing or any standard form of telecommunication from the appropriate governmental authorities of such jurisdictions.

(k) *Exchange Listing.* The Shares to be delivered on the Closing Date or the Additional Closing Date, as the case may be, shall have been approved for listing on the Nasdaq Market, subject to official notice of issuance.

(l) *Lock-up Agreements.* The “lock-up” agreements, each substantially in the form of Exhibit A hereto, between you and certain shareholders, officers and directors and a consultant of the Company relating to sales and certain other dispositions of shares of Stock or certain other securities, delivered to you on or before the date hereof, shall be full force and effect on the Closing Date or the Additional Closing Date, as the case may be.

(m) *Warrants.* The Representatives shall have received a form of Warrant in form and substance reasonably acceptable to the Representatives.

(n) *Additional Documents.* On or prior to the Closing Date or the Additional Closing Date, as the case may be, the Company shall have furnished to the Representatives such further certificates and documents as the Representatives may reasonably request.

All opinions, letters, certificates and evidence mentioned above or elsewhere in this Agreement shall be deemed to be in compliance with the provisions hereof only if they are in form and substance reasonably satisfactory to counsel for the Underwriters.

7. Indemnification and Contribution.

(a) *Indemnification of the Underwriters.* The Company agrees to indemnify and hold harmless each Underwriter, its affiliates, directors and officers and each person, if any, who controls such Underwriter within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act, from and against any and all losses, claims, damages and liabilities (including, without limitation, reasonable legal fees and other reasonable expenses incurred in connection with any suit, action or proceeding or any claim asserted, as such fees and expenses are incurred), joint or several, that arise out of, or are based upon, (i) any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement or caused by any omission or alleged omission to state therein a material fact required to be stated therein or necessary in order to make the statements therein, not misleading, or (ii) any untrue statement or alleged untrue statement of a material fact contained in the Prospectus (or any amendment or supplement thereto), any Preliminary Prospectus, any Issuer Free Writing Prospectus, any “issuer information” filed or required to be filed pursuant to Rule 433(d) under the Securities Act, any road show as defined in Rule 433(h) under the Securities Act (a “road show”) or any Pricing Disclosure Package (including any Pricing Disclosure Package that has subsequently been amended), or caused by any omission or alleged omission to state therein a material fact necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading, in each case except insofar as such losses, claims, damages or liabilities arise out of, or are based upon, any untrue statement or omission or alleged untrue statement or omission made in reliance upon and in conformity with any information relating to any Underwriter furnished to the Company in writing by such Underwriter through the Representatives expressly for use therein, it being understood and agreed that the only such information furnished by any Underwriter consists of the information described as such in paragraph (b) below.

(b) *Indemnification of the Company.* Each Underwriter agrees, severally and not jointly, to indemnify and hold harmless the Company, its directors, its officers who signed the Registration Statement and each person, if any, who controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act to the same extent as the indemnity set forth in paragraph (a) above, but only with respect to any losses, claims, damages or liabilities that arise out of, or are based upon, any untrue statement or omission or alleged untrue statement or omission made in reliance upon and in conformity with any information relating to such Underwriter furnished to the Company in writing by such Underwriter through the Representatives expressly for use in the Registration Statement, the Prospectus (or any amendment or supplement thereto), any Issuer Free Writing Prospectus, any road show or any Pricing Disclosure Package (including any Pricing Disclosure Package that has subsequently been amended), it being understood and agreed upon that the only such information furnished by any Underwriter consists of the following information in the Prospectus furnished on behalf of each Underwriter: the concession figure appearing in the fourth paragraph under the caption “Underwriting” and the information contained in the thirteenth and fourteenth paragraphs relating to stabilizing transactions under the caption “Underwriting.”

(c) *Notice and Procedures.* If any suit, action, proceeding (including any governmental or regulatory investigation), claim or demand shall be brought or asserted against any person in respect of which indemnification may be sought pursuant to the preceding paragraphs of this Section 7, such person (the “Indemnified Person”) shall promptly notify the person against whom such indemnification may be sought (the “Indemnifying Person”) in writing; provided that the failure to notify the Indemnifying Person shall not relieve it from any liability that it may have under the preceding paragraphs of this Section 7 except to the extent that it has been materially prejudiced (through the forfeiture of substantive rights or defenses) by such failure; and provided, further, that the failure to notify the Indemnifying Person shall not relieve it from any liability that it may have to an Indemnified Person otherwise than under the preceding paragraphs of this Section 7. If any such proceeding shall be brought or asserted against an Indemnified Person and it shall have notified the Indemnifying Person thereof, the Indemnifying Person shall retain counsel reasonably satisfactory to the Indemnified Person (who shall not, without the consent of the Indemnified Person, be counsel to the Indemnifying Person) to represent the Indemnified Person and any others entitled to indemnification pursuant to this Section that the Indemnifying Person may designate in such proceeding and shall pay the reasonable documented fees and expenses in such proceeding and shall pay the reasonable documented fees and expenses of such counsel related to such proceeding, as incurred. In any such proceeding, any Indemnified Person shall have the right to retain its own counsel, but the fees and expenses of such counsel shall be at the expense of such Indemnified Person unless (i) the Indemnifying Person and the Indemnified Person shall have mutually agreed to the contrary; (ii) the Indemnifying Person has failed within a reasonable time to retain counsel reasonably satisfactory to the Indemnified Person; (iii) the Indemnified Person shall have reasonably concluded that there may be legal defenses available to it that are different from or in addition to those available to the Indemnifying Person; or (iv) the named parties in any such proceeding (including any impleaded parties) include both the Indemnifying Person and the Indemnified Person and representation of both parties by the same counsel would be inappropriate due to actual or potential differing interests between them. It is understood and agreed that the Indemnifying Person shall not, in connection with any proceeding or related proceeding in the same jurisdiction, be liable for the fees and expenses of more than one separate firm (in addition to any local counsel) for all Indemnified Persons, and that all such fees and expenses shall be paid or reimbursed as they are incurred. Any such separate firm for any Underwriter, its affiliates, directors and officers and any control persons of such Underwriter shall be designated in writing by J.P. Morgan Securities LLC and any such separate firm for the Company, its directors, its officers who signed the Registration Statement and any control persons of the Company shall be designated in writing by the Company. The Indemnifying Person shall not be liable for any settlement of any proceeding effected without its written consent, but if settled with such consent, the Indemnifying Person agrees to indemnify each Indemnified Person from and against any loss or liability by reason of such settlement. Notwithstanding the foregoing sentence, if at any time an Indemnified Person shall have requested that an Indemnifying Person reimburse the Indemnified Person for fees and expenses of counsel as contemplated by this paragraph, the Indemnifying Person 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 the Indemnifying Person of such request and (ii) the Indemnifying Person shall not have reimbursed the Indemnified Person in accordance with such request prior to the date of such settlement. No Indemnifying Person shall, without the written consent of the Indemnified Person, effect any settlement of any pending or threatened proceeding in respect of which any Indemnified Person is or could have been a party and indemnification could have been sought hereunder by such Indemnified Person, unless such settlement (x) includes an unconditional release of such Indemnified Person, in form and substance reasonably satisfactory to such Indemnified Person, from all liability on claims that are the subject matter of such proceeding and (y) does not include any statement as to or any admission of fault, culpability or a failure to act by or on behalf of any Indemnified Person.

(d) *Contribution.* If the indemnification provided for in paragraphs (a) or (b) above is unavailable to an Indemnified Person or insufficient in respect of any losses, claims, damages or liabilities referred to therein, then each Indemnifying Person under such paragraph, in lieu of indemnifying such Indemnified Person thereunder, shall contribute to the amount paid or payable by such Indemnified Person as a result of such losses, claims, damages or liabilities (i) in such proportion as is appropriate to reflect the relative benefits received by the Company, on the one hand, and the Underwriters on the other, from the offering of the Securities or (ii) if the allocation provided by clause (i) is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) but also the relative fault of the Company, on the one hand, and the Underwriters on the other, in connection with the statements or omissions that resulted in such losses, claims, damages or liabilities, as well as any other relevant equitable considerations. The relative benefits received by the Company, on the one hand, and the Underwriters on the other, shall be deemed to be in the same respective proportions as the net proceeds (after deducting underwriting discounts but before deducting expenses) received by the Company from the sale of the Securities and the total underwriting discounts and commissions received by the Underwriters in connection therewith, in each case as set forth in the table on the cover of the Prospectus, bear to the aggregate offering price of the Securities. The relative fault of the Company, on the one hand, and the Underwriters on the other, shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission or alleged omission to state a material fact relates to information supplied by the Company or by the Underwriters and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission.

(e) *Limitation on Liability.* The Company and the Underwriters agree that it would not be just and equitable if contribution pursuant to paragraph (d) above were determined by pro rata allocation (even if the Underwriters were treated as one entity for such purpose) or by any other method of allocation that does not take account of the equitable considerations referred to in paragraph (d) above. The amount paid or payable by an Indemnified Person as a result of the losses, claims, damages and liabilities referred to in paragraph (d) above shall be deemed to include, subject to the limitations set forth above, any reasonable documented legal or other reasonable documented expenses incurred by such Indemnified Person in connection with any such action or claim. Notwithstanding the provisions of paragraphs (d) and (e), in no event shall an Underwriter be required to contribute any amount in excess of the amount by which the total underwriting discounts and commissions received by such Underwriter with respect to the offering of the Securities exceeds the amount of any damages that such Underwriter has otherwise been required to pay by reason of such untrue or alleged untrue statement or omission or alleged omission. No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the 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 paragraphs (d) and (e) are several in proportion to their respective purchase obligations hereunder and not joint.

(f) *Non-Exclusive Remedies.* The remedies provided for in paragraphs (a) through (e) are not exclusive and shall not limit any rights or remedies which may otherwise be available to any Indemnified Person at law or in equity.

8. Effectiveness of Agreement. This Agreement shall become effective as of the date first written above.

9. Termination. This Agreement may be terminated in the absolute discretion of the Representatives, by notice to the Company, if after the execution and delivery of this Agreement and on or prior to the Closing Date or, in the case of the Option Shares, prior to the Additional Closing Date (i) trading generally shall have been suspended or materially limited on or by either of the New York Stock Exchange or The Nasdaq Stock Market; (ii) trading of any securities issued or guaranteed by the Company shall have been suspended on any exchange or in any over-the-counter market; (iii) a general moratorium on commercial banking activities shall have been declared by federal or New York State authorities; or (iv) there shall have occurred any outbreak or escalation of hostilities or any change in financial markets or any calamity or crisis, either within or outside the United States, that, in the judgment of the Representatives, is material and adverse and makes it impracticable or inadvisable to proceed with the offering, sale or delivery of the Securities on the Closing Date or the Additional Closing Date, as the case may be, on the terms and in the manner contemplated by this Agreement, the Pricing Disclosure Package and the Prospectus.

10. Defaulting Underwriter.

(a) If, on the Closing Date or the Additional Closing Date, as the case may be, any Underwriter defaults on its obligation to purchase the Securities that it has agreed to purchase hereunder on such date, the non-defaulting Underwriters may in their discretion arrange for the purchase of such Securities by other persons satisfactory to the Company on the terms contained in this Agreement. If, within 36 hours after any such default by any Underwriter, the non-defaulting Underwriters do not arrange for the purchase of such Securities, then the Company shall be entitled to a further period of 36 hours within which to procure other persons satisfactory to the non-defaulting Underwriters to purchase such Securities on such terms. If other persons become obligated or agree to purchase the Securities of a defaulting Underwriter, either the non-defaulting Underwriters or the Company may postpone the Closing Date or the Additional Closing Date, as the case may be, for up to five full business days in order to effect any changes that in the opinion of counsel for the Company or counsel for the Underwriters may be necessary in the Registration Statement and the Prospectus or in any other document or arrangement, and the Company agrees to promptly prepare any amendment or supplement to the Registration Statement and the Prospectus that effects any such changes. As used in this Agreement, the term "Underwriter" includes, for all purposes of this Agreement unless the context otherwise requires, any person not listed in Schedule 1 hereto that, pursuant to this Section 10, purchases Securities that a defaulting Underwriter agreed but failed to purchase.

(b) If, after giving effect to any arrangements for the purchase of the Securities of a defaulting Underwriter or Underwriters by the non-defaulting Underwriters and the Company as provided in paragraph (a) above, the aggregate number of Securities that remain unpurchased on the Closing Date or the Additional Closing Date, as the case may be, does not exceed one-eleventh of the aggregate number of Securities to be purchased on such date, then the Company shall have the right to require each non-defaulting Underwriter to purchase the number of Securities that such Underwriter agreed to purchase hereunder on such date plus such Underwriter's pro rata share (based on the number of Securities that such Underwriter agreed to purchase on such date) of the Securities of such defaulting Underwriter or Underwriters for which such arrangements have not been made.

(c) If, after giving effect to any arrangements for the purchase of the Securities of a defaulting Underwriter or Underwriters by the non-defaulting Underwriters and the Company as provided in paragraph (a) above, the aggregate number of Securities that remain unpurchased on the Closing Date or the Additional Closing Date, as the case may be, exceeds one-eleventh of the aggregate amount of Securities to be purchased on such date, or if the Company shall not exercise the right described in paragraph (b) above, then this Agreement or, with respect to any Additional Closing Date, the obligation of the Underwriters to purchase Securities on the Additional Closing Date, as the case may be, shall terminate without liability on the part of the non-defaulting Underwriters. Any termination of this Agreement pursuant to this Section 10 shall be without liability on the part of the Company, except that the Company will continue to be liable for the payment of expenses as set forth in Section 11 hereof and except that the provisions of Section 7 hereof shall not terminate and shall remain in effect.

(d) Nothing contained herein shall relieve a defaulting Underwriter of any liability it may have to the Company or any non-defaulting Underwriter for damages caused by its default.

11. Payment of Expenses.

(a) Whether or not the transactions contemplated by this Agreement are consummated or this Agreement is terminated, the Company will pay or cause to be paid all costs and expenses incident to the performance of its obligations hereunder, including without limitation, (i) the costs incident to the authorization, issuance, sale, preparation and delivery of the Securities and any taxes payable in that connection; (ii) the costs incident to the preparation, printing and filing under the Securities Act of the Registration Statement, the Preliminary Prospectus, any Issuer Free Writing Prospectus, any Pricing Disclosure Package and the Prospectus (including all exhibits, amendments and supplements thereto) and the distribution thereof; (iii) the fees and expenses of the Company's counsel and independent accountants; (iv) the fees and expenses incurred in connection with the registration or qualification and determination of eligibility for investment of the Securities under the laws of such jurisdictions as the Representatives may designate and the preparation, printing and distribution of a Blue Sky Memorandum (including the related reasonable fees and expenses of counsel for the Underwriters), provided that the amount payable by the Company pursuant to clause (iv) shall not exceed \$10,000; (v) the cost of preparing stock certificates; (vi) the costs and charges of any transfer agent and any registrar; (vii) all expenses and application fees incurred in connection with any filing with, and clearance of the offering by, FINRA, provided that the amount payable the Company pursuant to clause (vii) shall not exceed \$45,000; (viii) all expenses incurred by the Company in connection with any "road show" presentation to potential investors; provided, however, that the Underwriters will pay all of the travel, lodging and other expenses of the Underwriters or any of their employees incurred by them in connection with the "road show", and provided, further, that the Company will pay all of the cost of any aircraft chartered in connection with such road show with the prior approval of the Company; and (ix) all expenses and application fees related to the listing of the Shares on the Nasdaq Market.



(b) If (i) this Agreement is terminated pursuant to Section 9, (ii) the Company for any reason fails to tender the Securities for delivery to the Underwriters (other than by reason of a default by any Underwriter) or, in the case of the Warrants, to the purchaser thereof or (iii) the Underwriters decline to purchase the Securities for any reason permitted under this Agreement, the Company agrees to reimburse the Underwriters for all out-of-pocket costs and expenses (including the fees and expenses of their counsel) reasonably incurred by the Underwriters in connection with this Agreement and the offering contemplated hereby. For the avoidance of doubt, it is understood that the Company shall not pay or reimburse any costs, fees or expenses incurred by an Underwriter that defaults on its obligations to purchase the Securities.

12. Persons Entitled to Benefit of Agreement. This Agreement shall inure to the benefit of and be binding upon the parties hereto and their respective successors and the officers and directors and any controlling persons referred to herein, and the affiliates of each Underwriter referred to in Section 7 hereof. Nothing in this Agreement is intended or shall be construed to give any other person any legal or equitable right, remedy or claim under or in respect of this Agreement or any provision contained herein. No purchaser of Securities from any Underwriter shall be deemed to be a successor merely by reason of such purchase.

13. Survival. The respective indemnities, rights of contribution, representations, warranties and agreements of the Company and the Underwriters contained in this Agreement or made by or on behalf of the Company or the Underwriters pursuant to this Agreement or any certificate delivered pursuant hereto shall survive the delivery of and payment for the Securities and shall remain in full force and effect, regardless of any termination of this Agreement or any investigation made by or on behalf of the Company or the Underwriters or the directors, officers, controlling persons or affiliates referred to in Section 7 hereof.

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

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

16. Miscellaneous.

(a) *Notices.* All notices and other communications hereunder shall be in writing and shall be deemed to have been duly given if mailed or transmitted and confirmed by any standard form of telecommunication. Notices to the Underwriters shall be given to the Representatives c/o J.P. Morgan Securities LLC, 383 Madison Avenue, New York, New York 10179 (fax: (212) 622-8358); Attention: Equity Syndicate Desk; and c/o SVB Leerink LLC, One Federal Street, 37th Floor, Boston, Massachusetts 02110. Notices to the Company shall be given to it at 500 Unicorn Park, Woburn, Massachusetts 01801, (fax: (781) 926-0870); Attention: Philip Astley-Sparke.

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

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

(d) *Recognition of the U.S. Special Resolution Regimes.*

(i) 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.

(ii) 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.

As used in this Section 16(d):

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

“Covered Entity” means any of the following:

- (i) a “covered entity” as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 252.82(b);
- (ii) a “covered bank” as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 47.3(b); or
- (iii) a “covered FSI” as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 382.2(b).

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

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

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

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

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

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

Very truly yours,

REPLIMUNE GROUP, INC.

By: /s/ Jean Franchi

Name: Jean Franchi

Title: Chief Financial Officer

Accepted: As of the date first written above

J.P. MORGAN SECURITIES LLC  
SVB LEERINK LLC

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

J.P. MORGAN SECURITIES LLC

By: /s/ David Ke

\_\_\_\_\_  
Name: David Ke

Title: Executive Director

SVB LEERINK LLC

By: /s/ Dan Dubin

\_\_\_\_\_  
Name: Dan Dubin, M.D.

Title: Vice Chairman

**Schedule 1**

Underwriters	Number of Shares	Number of Warrant Shares
J.P. Morgan Securities LLC	1,271,740	684,782
SVB Leerink LLC	847,826	456,521
BMO Capital Markets Corp.	423,913	228,261
Wedbush Securities Inc.	282,609	152,174
Total	2,826,088	1,521,738

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**a. Pricing Disclosure Package**

None.

**b. Pricing Information Provided Orally by Underwriters**

Public Offering Price per Share:	\$23.00
Number of Shares:	2,826,088 Underwritten Shares plus 652,173 Option Shares
Public Offering Price per Warrant Share:	\$22.9999
Number of Warrant Shares:	1,521,738

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None.

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## FORM OF LOCK-UP AGREEMENT

[•], 2020

J.P. MORGAN SECURITIES LLC  
SVB LEERINK LLC

As Representatives of  
the several Underwriters listed in  
Schedule 1 to the Underwriting  
Agreement referred to below

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

c/o SVB Leerink LLC  
One Federal Street, 37th Floor  
Boston, Massachusetts 02110

Re: Replimune Group, Inc. — Public Offering

Ladies and Gentlemen:

The undersigned understands that you, as Representatives (the “Representatives”) of the several Underwriters, propose to enter into an underwriting agreement (the “Underwriting Agreement”) with Replimune Group, Inc., a Delaware corporation (the “Company”), providing for the public offering (the “Public Offering”) by the several Underwriters named in Schedule 1 to the Underwriting Agreement (the “Underwriters”), of Common Stock (as defined below) and pre-funded warrants to purchase shares of Common Stock (the “Securities”). Capitalized terms used herein and not otherwise defined shall have the meanings set forth in the Underwriting Agreement.

In consideration of the Underwriters’ agreement to purchase and make the Public Offering of the Securities, and for other good and valuable consideration, receipt of which is hereby acknowledged, the undersigned hereby agrees that, without the prior written consent of the Representatives on behalf of the Underwriters, the undersigned will not, during the period beginning on the date of this letter agreement (this “Letter Agreement”) and ending [90]<sup>1</sup>[60]<sup>2</sup> days after the date of the final prospectus supplement relating to the Public Offering (the “Prospectus”) (such period, the “Restricted Period”), (1) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any shares of common stock, \$0.001 par value per share, of the Company (the “Common Stock”) or any securities convertible into or exercisable or exchangeable for Common Stock (including without limitation, Common Stock or such other securities which may be deemed to be beneficially owned by the undersigned in accordance with the rules and regulations of the Securities and Exchange Commission (the “Commission”) and securities which may be issued upon exercise of a stock option or warrant), or publicly disclose the intention to make any offer, sale, pledge or disposition, (2) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the Common Stock or such other securities, whether any such transaction described in clause (1) or (2) above is to be settled by delivery of Common Stock or such other securities, in cash or otherwise or (3) make any demand for or exercise any right with respect to the registration of any shares of Common Stock or any security convertible into or exercisable or exchangeable for Common Stock, in each case other than:

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<sup>1</sup> To be included only in the Lock-Up Agreements for all but one of the directors and officers and the consultant.

<sup>2</sup> To be included only in the Lock-Up Agreements for shareholders and the remaining director and officer.

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(A) transactions relating to shares of Common Stock or other securities that the undersigned may purchase in the Public Offering (provided that the undersigned is not an officer or director of the Company) or in open market transactions during the Restricted Period,

(B) the exercise, including by “net” exercise, of any options or warrants to acquire shares of Common Stock or the conversion of any convertible security into Common Stock described in the registration statement related to the Public Offering, or issued pursuant to an equity plan described in the registration statement related to the Public Offering, it being understood that any shares of Common Stock received by the undersigned upon such exercise or conversion shall be subject to the restrictions on transfers set forth in this Letter Agreement; provided that any filing required under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), shall clearly indicate in the codes and footnotes thereto that any disposition of shares in connection with a “net” exercise was made solely to the Company,

(C) the sale or transfer to the Company of such number of shares of Common Stock acquired by the undersigned in connection with the exercise of such options or warrants on a “net” exercise basis described in the foregoing clause; provided that any filing required under the Exchange Act shall clearly indicate in the codes and footnotes thereto that such sale or transfer, as applicable, is in connection with a “net” exercise was made solely to the Company,

(D) the sale or transfer to the Company of such number of shares of Common Stock necessary to generate only such amount of cash needed for the payment of taxes (including estimated taxes) due as a result of the exercise of such options or warrants described in clause (C); provided that any filing required under the Exchange Act shall clearly indicate in the codes and footnotes thereto that such sale or transfer, as applicable, is for the purpose of satisfying tax obligations,

(E) transfers of shares of Common Stock or such other securities as a bona fide gift or gifts (including without limitation to a charitable organization) or pursuant to a negotiated divorce settlement,

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(F) transfers by operation of law, including pursuant to a qualified domestic relations order,

(G) distributions or transfers of shares of Common Stock or other securities to subsidiaries, limited or general partners, members, managers, managing members, officers, directors, employees, stockholders or affiliates (as such term is defined in Rule 405 as promulgated by the Commission under the Securities Act of 1933, as amended) of, or any investment fund or other entity that controls or manages, the undersigned or the undersigned's affiliates (as defined above) or to any investment fund or other entity controlled or managed by the undersigned or under common control of the undersigned, or if the undersigned is an investment company registered under the Investment Company Act of 1940, as amended (a "Mutual Fund"), pursuant to a merger or reorganization with or into another Mutual Fund that shares the same investment adviser registered pursuant to the requirements of the Investment Advisers Act of 1940, as amended,

(H) transfers of shares of Common Stock or other securities to any immediate family member, trusts for the direct or indirect benefit of the undersigned or one or more of the immediate family members of the undersigned or any of their successors upon death, or any partnerships or limited liability company, the partners or members of which consist of or are for the direct or indirect benefit of the undersigned and/or immediate family members or other dependent of the undersigned (for purposes of this Letter Agreement, "immediate family" means any relationship by blood, marriage or adoption, not more remote than first cousin),

(I) if the undersigned is a trust, transfers to a trustor or beneficiary of the trust,

(J) transfers or dispositions of shares of Common Stock or such other securities by will, other testamentary document or intestate succession to the legal representative, heir, beneficiary or a member of the immediate family of the undersigned in a transaction not involving a disposition for value, [and]

(K) conversion of preferred stock into shares of Common Stock in connection with the consummation of the Public Offering, it being understood that any such shares of Common Stock received by the undersigned upon such conversion shall be subject to the restrictions on transfer set forth in this Letter Agreement, [and]

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[(L) transfers of shares of Common Stock made pursuant to a contract, instruction or plan adopted pursuant to Rule 10b5-1 of the Exchange Act (a “Plan”) prior to the date hereof; provided that (1) no amendment, waiver or other modification shall be made to any such Plan during the Restricted Period and (2) any filing under Section 16(a) of the Exchange Act that is made in connection with any such transfers during the Restricted Period shall state (x) that such transfers have been executed under a trading plan adopted pursuant to Rule 10b5-1 under the Exchange Act and (y) the date of adoption of such plan,]<sup>3</sup>

[(L) transfers of shares of Common Stock made pursuant to a contract, instruction or plan adopted pursuant to Rule 10b5-1 of the Exchange Act (a “Plan”) prior to the date hereof; provided that (1) no such transfers shall be made prior to the date that is thirty-one days after the date of the Prospectus, (2) no amendment, waiver or other modification shall be made to any such Plan during the Restricted Period if such amendment, waiver or other modification would have the effect of increasing the number of shares of Common Stock transferable under the Plan, accelerating the sale of shares of Common Stock under the Plan or reducing the price per share at which shares of Common Stock may be transferred under the Plan, in each case, during the Restricted Period and (3) any filing under Section 16(a) of the Exchange Act that is made in connection with any such transfers during the Restricted Period shall state (x) that such transfers have been executed under a trading plan adopted pursuant to Rule 10b5-1 under the Exchange Act and (y) the date of adoption of such plan,]<sup>4</sup>

provided that in the case of any transfer or distribution pursuant to clause (E), (G), (H), (I) or (J), each donee or distributee shall execute and deliver to the Representatives a lock-up letter in the form of this Letter Agreement; [and] provided, further, that in the case of any transfer or distribution pursuant to clauses [(A), (E) and (G) through (I), no filing by any party (donor, donee, transferor or transferee) under the Exchange Act or other public announcement reporting a reduction in the beneficial ownership shall be required or shall be made voluntarily in connection with such transfer or distribution (other than a filing on a Form 5, Schedule 13G (or 13G/A) or 13F made after the expiration of the Restricted Period referred to above)]; and provided, further, that in the case of any transfer or distribution pursuant to clause (A), no filing by any party (donor, donee, transferor or transferee) reporting a reduction in the beneficial ownership shall be made in connection with such transfer or distribution unless such filing (1) is required under the Exchange Act and (2) shall clearly indicate in the codes and footnotes thereto that such transfer or distribution consists of shares of Common Stock purchased in the Public Offering or in open market transactions during the Restricted Period, as applicable]<sup>5</sup>.

In addition, the foregoing paragraph shall not apply to the establishment of a [trading plan][Plan] by the undersigned [pursuant to Rule 10b5-1 under the Exchange Act][after the date hereof] for the sale or transfer of shares of Common Stock; provided that such [p][P]lan does not provide for the sale or transfer of Common Stock during the Restricted Period and, no public announcement or filing under the Exchange Act, if any, is required of or is voluntarily made by or on behalf of the undersigned or the Company regarding such [p][P]lan.

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<sup>3</sup> To be included only in the Lock-Up Agreements for shareholders.

<sup>4</sup> To be included only in the Lock-Up Agreement for one of the directors and officers.

<sup>5</sup> To be included only in the Lock-Up Agreements for shareholders.

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The restrictions contained herein shall not apply to any transfers, sales, tenders or other dispositions of Common Stock or any security convertible into or exercisable or exchangeable for Common Stock pursuant to a bona fide third-party tender offer, merger, amalgamation, consolidation or other similar transaction that is approved by the Company's board of directors and made to or involving all holders of the Common Stock or such other securities pursuant to a change of control of the ownership of the Company (including, without limitation, the entry into any lock-up, voting or similar agreement pursuant to which the undersigned may agree to transfer, sell, tender or otherwise dispose of Common Stock or other such securities in connection with any such transaction, or vote any securities in favor of any such transaction); provided that if such bona fide third-party tender offer, merger, amalgamation, consolidation or other similar transaction is not completed, any Common Stock or any security convertible into or exercisable or exchangeable for Common Stock subject to this Letter Agreement shall remain subject to the restrictions contained in this Letter Agreement. For purposes of this Letter Agreement, "change of control" shall mean the consummation of any bona fide third-party tender offer, merger, amalgamation, 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 50% of total voting power of the voting stock of the Company.

If any percentage of the Common Stock or any security convertible into or exercisable or exchangeable for Common Stock held by any person or entity other than the undersigned that is subject to a lock-up agreement related to the Public Offering similar in form to this Letter Agreement is released from any restrictions set forth in such lock-up agreement, the same percentage (relative to the total holdings of the stockholder being released from such restrictions) of the Common Stock or any security convertible into or exercisable or exchangeable for Common Stock held by the undersigned shall be immediately and fully released from any remaining restrictions on transfer set forth in this Letter Agreement concurrently therewith; provided, however, that the Representatives will not be obligated to release the undersigned from the restrictions on transfer set forth in this Letter Agreement unless and until the Representatives have first released more than 1%, in the aggregate, of the Company's total outstanding shares of Common Stock (calculated on an as-converted basis pre-Public Offering) from such restrictions; provided that directors and officers may be released from such restrictions solely due to financial hardship as determined by the Representatives in their sole judgment. In the event that, as a result of this paragraph, the undersigned is released from any of its obligations under this Letter Agreement or, by virtue of this Letter Agreement, becomes entitled to offer, pledge, sell, contract to sell, or otherwise transfer or dispose of any Common Stock or any security convertible into or exercisable or exchangeable for Common Stock prior to the date that is [90][60] days after the date of the Prospectus, the Representatives shall notify the Company within one (1) business day of the effective date of such release, and the Company, in turn, in consultation with the Representatives shall notify the undersigned within two (2) business days thereafter.

In furtherance of the foregoing, the Company, and any duly appointed transfer agent for the registration or transfer of the securities described herein, are hereby authorized to decline to make any transfer of securities if such transfer would constitute a violation or breach of this Letter Agreement.

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The undersigned hereby represents and warrants that the undersigned has full power and authority to enter into this Letter Agreement. All authority herein conferred or agreed to be conferred and any obligations of the undersigned shall be binding upon the successors, assigns, heirs or personal representatives of the undersigned.

Notwithstanding anything to the contrary contained herein, if (1) the Company files an application with the Commission to withdraw the registration statement relating to the Public Offering, (2) the Underwriting Agreement does not become effective by July 31, 2020, or if the Underwriting Agreement (other than the provisions thereof which survive termination) shall terminate or be terminated prior to payment for and delivery of the Common Stock to be sold thereunder, (3) the Representatives, on behalf of the Underwriters, advise the Company, or the Company advises the Representatives, in writing, prior to the execution of the Underwriting Agreement, that they have determined not to proceed with the Public Offering or (4) the closing of the Public Offering shall not have occurred on or before July 31, 2020, then, in each case the undersigned shall be released from all obligations under this Letter Agreement. The undersigned understands that the Underwriters are entering into the Underwriting Agreement and proceeding with the Public Offering in reliance upon this Letter Agreement.

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

Very truly yours,

*[NAME OF STOCKHOLDER / DIRECTOR / OFFICER]*

By: \_\_\_\_\_  
Name:  
Title:

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## REPLIMUNE GROUP, INC.

## FORM OF WARRANT TO PURCHASE COMMON STOCK

Number of Shares: [●]  
(subject to adjustment)

Warrant No. [●]

Original Issue Date: June [●], 2020

Replimune Group, Inc., a Delaware corporation (the “**Company**”), hereby certifies that, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, [●] or its registered assigns (the “**Holder**”), is entitled, subject to the terms set forth below, to purchase from the Company up to a total of [●] shares of common stock, \$0.001 par value per share (the “**Common Stock**”), of the Company (each such share, a “**Warrant Share**” and all such shares, the “**Warrant Shares**”) at an exercise price per share equal to \$0.0001 per share (as adjusted from time to time as provided in Section 9 herein, the “**Exercise Price**”) upon surrender of this Warrant to Purchase Common Stock (including any Warrants to Purchase Common Stock issued in exchange, transfer or replacement hereof, the “**Warrant**”) at any time and from time to time on or after the date hereof (the “**Original Issue Date**”), subject to the following terms and conditions:

1. *Definitions.* For purposes of this Warrant, the following terms shall have the following meanings:

(a) “**Affiliate**” means any Person directly or indirectly controlled by, controlling or under common control with, a Holder, as such terms are used in and construed under Rule 405 under the Securities Act, but only for so long as such control shall continue.

(b) “**Commission**” means the United States Securities and Exchange Commission.

(c) “**Closing Sale Price**” means, for any security as of any date, the last trade price for such security on the Principal Trading Market for such security, as reported by Bloomberg L.P., or, if such Principal Trading Market begins to operate on an extended hours basis and does not designate the last trade price, then the last trade price of such security prior to 4:00 P.M., New York City time, as reported by Bloomberg L.P., or if the security is not listed for trading on a national securities exchange or other trading market on the relevant date, the last quoted bid price for the security in the over-the-counter market on the relevant date as reported by OTC Markets Group Inc. (or a similar organization or agency succeeding to its functions of reporting prices). If the Closing Sale Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Closing Sale Price of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then the Board of Directors of the Company shall use its good faith judgment to determine the fair market value. The Board of Directors’ determination shall be binding upon all parties absent demonstrable error. All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination or other similar transaction during the applicable calculation period.

(d) “**Principal Trading Market**” means the national securities exchange or other trading market on which the Common Stock is primarily listed on and quoted for trading, which, as of the Original Issue Date, shall be the Nasdaq Global Select Market.

(e) “**Registration Statement**” means the Company’s Registration Statement on Form S-3 (File No. 333-233147), declared effective on August 15, 2019.

(f) “**Securities Act**” means the Securities Act of 1933, as amended.

(g) “**Trading Day**” means any weekday on which the Principal Trading Market is open for trading. If the Common Stock is not listed or admitted for trading, “**Trading Day**” means any day except any Saturday, any Sunday, any day which is a federal legal holiday in the United States or any day on which banking institutions in New York City are authorized or required by law or other governmental action to close.

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(h) “**Transfer Agent**” means Computershare Trust Company, N.A., the Company’s transfer agent and registrar for the Common Stock, and any successor appointed in such capacity.

2. *Issuance of Securities; Registration of Warrants.* The Warrant, as initially issued by the Company, is offered and sold pursuant to the Registration Statement. As of the Original Issue Date, the Warrant Shares are issuable under the Registration Statement. Accordingly, the Warrant and, assuming issuance pursuant to the Registration Statement or an exchange meeting the requirements of Section 3(a)(9) of the Securities Act as in effect on the Original Issue Date, the Warrant Shares, are not “restricted securities” under Rule 144 promulgated under the Securities Act as of the Original Issue Date. The Company shall register ownership of this Warrant, upon records to be maintained by the Company for that purpose (the “**Warrant Register**”), in the name of the record Holder (which shall include the initial Holder or, as the case may be, any assignee to which this Warrant is assigned hereunder) from time to time. The Company may deem and treat the registered Holder of this Warrant as the absolute owner hereof for the purpose of any exercise hereof or any distribution to the Holder, and for all other purposes, absent actual notice to the contrary.

3. *Registration of Transfers.* Subject to compliance with all applicable securities laws and the rules of the Principal Trading Market, the Company shall, or will cause its Transfer Agent to, register the transfer of all or any portion of this Warrant in the Warrant Register, upon surrender of this Warrant, and payment for all applicable transfer taxes (if any). Upon any such registration or transfer, a new warrant to purchase Common Stock in substantially the form of this Warrant (any such new warrant, a “**New Warrant**”) evidencing the portion of this Warrant so transferred shall be issued to the transferee, and a New Warrant evidencing the remaining portion of this Warrant not so transferred, if any, shall be issued to the transferring Holder. The acceptance of the New Warrant by the transferee thereof shall be deemed the acceptance by such transferee of all of the rights and obligations in respect of the New Warrant that the Holder has in respect of this Warrant. The Company shall, or will cause its Transfer Agent to, prepare, issue and deliver at the Company’s own expense any New Warrant under this Section 3. Until due presentment for registration of transfer, the Company may treat the registered Holder hereof as the owner and holder for all purposes, and the Company shall not be affected by any notice to the contrary.

4. *Exercise and Duration of Warrants.*

(a) All or any part of this Warrant shall be exercisable by the registered Holder in any manner permitted by this Warrant at any time and from time to time on or after the Original Issue Date.

(b) The Holder may exercise this Warrant by delivering to the Company (i) an exercise notice, in the form attached as Schedule 1 hereto (the “**Exercise Notice**”), completed and duly signed, and (ii) payment of the Exercise Price for the number of Warrant Shares as to which this Warrant is being exercised (which may take the form of a “cashless exercise” if so indicated in the Exercise Notice pursuant to Section 10 below). The date on which such exercise notice is delivered to the Company (as determined in accordance with the notice provisions hereof) is an “**Exercise Date**.” The Holder shall not be required to deliver the original Warrant in order to effect an exercise hereunder. Execution and delivery of the Exercise Notice shall have the same effect as cancellation of the original Warrant and issuance of a New Warrant evidencing the right to purchase the remaining number of Warrant Shares, if any. **The Holder and any assignee, by acceptance of this Warrant, acknowledge and agree that, by reason of the provisions of this paragraph, following the purchase of a portion of the Warrant Shares hereunder, the number of Warrant Shares available for purchase hereunder at any given time may be less than the amount stated on the face hereof.**

5. *Delivery of Warrant Shares.*

(a) Upon exercise of this Warrant, the Company shall promptly (but in no event later than three (3) Trading Days after the Exercise Date), upon the request of the Holder, cause the Transfer Agent to credit such aggregate number of shares of Common Stock to which the Holder is entitled pursuant to such exercise to the Holder’s or its designee’s balance account with The Depository Trust Company (“**DTC**”) through its Deposit Withdrawal Agent Commission system or if the Transfer Agent is not participating in the Fast Automated Securities Transfer Program (the “**FAST Program**”) or if the certificates are required to bear a legend regarding restriction on transferability, issue and dispatch by overnight courier to the address as specified in the Exercise Notice, a certificate, registered in the Company’s share register in the name of the Holder or its designee, for the number of shares of Common Stock to which the Holder is entitled pursuant to such exercise. The Holder, or any natural person or legal entity (each, a “**Person**”) so designated by the Holder to receive Warrant Shares, shall be deemed to have become the holder of record of such Warrant Shares as of the Exercise Date, irrespective of the date such Warrant Shares are credited to the Holder’s DTC account or the date of delivery of the certificates evidencing such Warrant Shares, as the case may be.

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(b) If by the close of the third (3rd) Trading Day after the Exercise Date, the Company fails to deliver to the Holder a certificate representing the required number of Warrant Shares in the manner required pursuant to Section 5(a) or fails to cause the Transfer Agent to credit the Holder's DTC account for such number of Warrant Shares to which the Holder is entitled, and if after such third (3rd) Trading Day and prior to the receipt of such Warrant Shares, the Holder purchases (in an open market transaction or otherwise) shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "**Buy-In**"), then the Company shall, within three (3) Trading Days after the Holder's written request and in the Holder's sole discretion, either (i) pay in cash to the Holder an amount equal to the Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased, at which point the Company's obligation to deliver such certificate (and to issue such Warrant Shares) or to cause the Holder's DTC account to be credited for such Warrant Shares shall terminate or (ii) promptly deliver to the Holder a certificate or certificates representing such Warrant Shares and pay cash to the Holder in an amount equal to the excess (if any) of Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased in the Buy-In over the product of (A) the number of shares of Common Stock purchased in the Buy-In, times (B) the Closing Sale Price of a share of Common Stock on the Exercise Date.

(c) To the extent permitted by law and subject to Section 5(b), the Company's obligations to cause the Transfer Agent to issue and deliver Warrant Shares in accordance with and subject to the terms hereof (including the limitations set forth in Section 11 below) are absolute and unconditional, irrespective of any action or inaction by the Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any Person or any action to enforce the same, or any setoff, counterclaim, recoupment, limitation or termination, or any breach or alleged breach by the Holder or any other Person of any obligation to the Company or any violation or alleged violation of law by the Holder or any other Person, and irrespective of any other circumstance that might otherwise limit such obligation of the Company to the Holder in connection with the issuance of Warrant Shares. Subject to Section 5(b), nothing herein shall limit the Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver certificates representing shares of Common Stock upon exercise of the Warrant as required pursuant to the terms hereof.

6. *Charges, Taxes and Expenses.* Issuance and delivery of certificates for shares of Common Stock, if any, upon exercise of this Warrant shall be made without charge to the Holder for any issue or transfer tax, transfer agent fee or other incidental tax or expense (excluding any applicable stamp duties) in respect of the issuance of such certificates, all of which taxes and expenses shall be paid by the Company; *provided, however*, that the Company shall not be required to pay any tax that may be payable in respect of any transfer involved in the registration of any certificates for Warrant Shares or the Warrants in a name other than that of the Holder or an Affiliate thereof. The Holder shall be responsible for all other tax liability that may arise as a result of holding or transferring this Warrant or receiving Warrant Shares upon exercise hereof.

7. *Replacement of Warrant.* If this Warrant is mutilated, lost, stolen or destroyed, the Company shall issue or cause to be issued in exchange and substitution for and upon cancellation hereof, or in lieu of and substitution for this Warrant, a New Warrant, but only upon receipt of evidence reasonably satisfactory to the Company of such loss, theft or destruction (in such case) and, in each case, a customary and reasonable indemnity and surety bond, if requested by the Company. Applicants for a New Warrant under such circumstances shall also comply with such other reasonable regulations and procedures and pay such other reasonable third-party costs as the Company may prescribe. If a New Warrant is requested as a result of a mutilation of this Warrant, then the Holder shall deliver such mutilated Warrant to the Company as a condition precedent to the Company's obligation to issue the New Warrant.

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8. *Reservation of Warrant Shares.* The Company covenants that it will, at all times while this Warrant is outstanding, reserve and keep available out of the aggregate of its authorized but unissued and otherwise unreserved Common Stock, solely for the purpose of enabling it to issue Warrant Shares upon exercise of this Warrant as herein provided, the number of Warrant Shares that are initially issuable and deliverable upon the exercise of this entire Warrant, free from preemptive rights or any other contingent purchase rights of persons other than the Holder (taking into account the adjustments and restrictions of Section 9). The Company covenants that all Warrant Shares so issuable and deliverable shall, upon issuance and the payment of the applicable Exercise Price in accordance with the terms hereof, be duly and validly authorized, issued and fully paid and non-assessable. The Company will take all such action as may be reasonably necessary to assure that such shares of Common Stock may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of any securities exchange or automated quotation system upon which the Common Stock may be listed. The Company further covenants that it will not, without the prior written consent of the Holder, take any actions to increase the par value of the Common Stock at any time while this Warrant is outstanding.

9. *Certain Adjustments.* The Exercise Price and number of Warrant Shares issuable upon exercise of this Warrant are subject to adjustment from time to time as set forth in this Section 9.

(a) Stock Dividends and Splits. If the Company, at any time while this Warrant is outstanding, (i) pays a stock dividend on its Common Stock or otherwise makes a distribution on any class of capital stock issued and outstanding on the Original Issue Date and in accordance with the terms of such stock on the Original Issue Date, as described in the Registration Statement, that is payable in shares of Common Stock, (ii) subdivides its outstanding shares of Common Stock into a larger number of shares of Common Stock, (iii) combines its outstanding shares of Common Stock into a smaller number of shares of Common Stock or (iv) issues by reclassification of shares of capital stock any additional shares of Common Stock of the Company, then in each such case the Exercise Price shall be multiplied by a fraction, the numerator of which shall be the number of shares of Common Stock outstanding immediately before such event and the denominator of which shall be the number of shares of Common Stock outstanding immediately after such event. Any adjustment made pursuant to clause (i) of this paragraph shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution, provided, however, that if such record date shall have been fixed and such dividend is not fully paid on the date fixed therefor, the Exercise Price shall be recomputed accordingly as of the close of business on such record date and thereafter the Exercise Price shall be adjusted pursuant to this paragraph as of the time of actual payment of such dividends. Any adjustment pursuant to clause (ii) or (iii) of this paragraph shall become effective immediately after the effective date of such subdivision or combination.

(b) Pro Rata Distributions. If the Company, at any time while this Warrant is outstanding, distributes to all holders of Common Stock for no consideration (i) evidences of its indebtedness, (ii) any security (other than a distribution of Common Stock covered by the preceding paragraph) (iii) rights or warrants to subscribe for or purchase any security, or (iv) cash or any other asset (in each case, a “**Distribution**”), other than a reclassification as to which Section 9(c) applies, then in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the ownership limitation set forth in Section 11(a) hereof) immediately before the date of which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of Common Stock are to be determined for the participation in such Distribution (provided, however, to the extent that the Holder’s right to participate in any such Distribution would result in the Holder exceeding the ownership limitation set forth in Section 11(a) hereof, then the Holder shall not be entitled to participate in such Distribution to such extent (or in the beneficial ownership of any Common Stock as a result of such Distribution to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until the earlier of (i) such time, if ever, as the delivery to such Holder of such portion would not result in the Holder exceeding the ownership limitation set forth in Section 11(a) hereof and (ii) such time as the Holder has exercised this Warrant.

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(c) **Fundamental Transactions.** If, at any time while this Warrant is outstanding (i) the Company effects any merger or consolidation of the Company with or into another Person, in which the Company is not the surviving entity and in which the stockholders of the Company immediately prior to such merger or consolidation do not own, directly or indirectly, at least 50% of the voting power of the surviving entity immediately after such merger or consolidation, (ii) the Company effects any sale to another Person of all or substantially all of its assets in one transaction or a series of related transactions, (iii) pursuant to any tender offer or exchange offer (whether by the Company or another Person), holders of capital stock tender shares representing more than 50% of the voting power of the capital stock of the Company and the Company or such other Person, as applicable, accepts such tender for payment, (iv) the Company consummates a stock purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with another Person whereby such other Person acquires more than the 50% of the voting power of the capital stock of the Company (except for any such transaction in which the stockholders of the Company immediately prior to such transaction maintain, in substantially the same proportions, the voting power of such Person immediately after the transaction) or (v) the Company effects any reclassification of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property (other than as a result of a subdivision or combination of shares of Common Stock covered by Section 9(a) above) (in any such case, a **“Fundamental Transaction”**), then following such Fundamental Transaction the Holder shall have the right to receive, upon exercise of this Warrant, the same amount and kind of securities, cash or property as it would have been entitled to receive upon the occurrence of such Fundamental Transaction if it had been, immediately prior to such Fundamental Transaction, the holder of the number of Warrant Shares then issuable upon exercise in full of this Warrant without regard to any limitations on exercise contained herein (the **“Alternate Consideration”**). The Company shall not effect any Fundamental Transaction in which the Company is not the surviving entity or the Alternate Consideration includes securities of another Person unless (i) the Alternate Consideration is solely cash and the Company provides for the simultaneous “cashless exercise” of this Warrant pursuant to Section 10 below or (ii) prior to or simultaneously with the consummation thereof, any successor to the Company, surviving entity or other Person (including any purchaser of assets of the Company) shall assume the obligation to deliver to the Holder such Alternate Consideration as, in accordance with the foregoing provisions, the Holder may be entitled to receive, and the other obligations under this Warrant. The provisions of this paragraph (c) shall similarly apply to subsequent transactions analogous of a Fundamental Transaction type.

(d) **Number of Warrant Shares.** Simultaneously with any adjustment to the Exercise Price pursuant to Section 9 (including any adjustment to the Exercise Price that would have been effected but for the final sentence in this paragraph (d)), the number of Warrant Shares that may be purchased upon exercise of this Warrant shall be increased or decreased proportionately, so that after such adjustment the aggregate Exercise Price payable hereunder for the increased or decreased number of Warrant Shares shall be the same as the aggregate Exercise Price in effect immediately prior to such adjustment. Notwithstanding the foregoing, in no event may the Exercise Price be adjusted below the par value of the Common Stock then in effect.

(e) **Calculations.** All calculations under this Section 9 shall be made to the nearest one-hundredth of one cent or the nearest share, as applicable.

(f) **Notice of Adjustments.** Upon the occurrence of each adjustment pursuant to this Section 9, the Company at its expense will, at the written request of the Holder, promptly compute such adjustment, in good faith, in accordance with the terms of this Warrant and prepare a certificate setting forth such adjustment, including a statement of the adjusted Exercise Price and adjusted number or type of Warrant Shares or other securities issuable upon exercise of this Warrant (as applicable), describing the transactions giving rise to such adjustments and showing in detail the facts upon which such adjustment is based. Upon written request, the Company will promptly deliver a copy of each such certificate to the Holder and to the Transfer Agent.

(g) **Notice of Corporate Events.** If, while this Warrant is outstanding, the Company (i) declares a dividend or any other distribution of cash, securities or other property in respect of its Common Stock, including, without limitation, any granting of rights or warrants to subscribe for or purchase any capital stock of the Company or any subsidiary, (ii) authorizes or approves, enters into any agreement contemplating or solicits stockholder approval for any Fundamental Transaction or (iii) authorizes the voluntary dissolution, liquidation or winding up of the affairs of the Company, then, except if such notice and the contents thereof shall be deemed to constitute material non-public information, the Company shall deliver to the Holder a notice of such transaction at least ten (10) days prior to the applicable record or effective date on which a Person would need to hold Common Stock in order to participate in or vote with respect to such transaction; provided, however, that the failure to deliver such notice or any defect therein shall not affect the validity of the corporate action required to be described in such notice. In addition, if while this Warrant is outstanding, the Company authorizes or approves, enters into any agreement contemplating or solicits stockholder approval for any Fundamental Transaction contemplated by Section 9(c), other than a Fundamental Transaction under clause (iii) of Section 9(c), then, except if such notice and the contents thereof shall be deemed to constitute material non-public information, the Company shall deliver to the Holder a notice of such Fundamental Transaction at least ten (10) days prior to the date such Fundamental Transaction is consummated.

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10. *Payment of Cashless Exercise Price.* Notwithstanding anything contained herein to the contrary, the Holder may, in its sole discretion, satisfy its obligation to pay the Exercise Price through a “cashless exercise,” in which event the Company shall issue to the Holder the number of Warrant Shares in an exchange of securities effected pursuant to Section 3(a)(9) of the Securities Act as determined as follows:

$$X = Y [(A-B)/A]$$

where:

“X” equals the number of Warrant Shares to be issued to the Holder;

“Y” equals the total number of Warrant Shares with respect to which this Warrant is then being exercised;

“A” equals the Closing Sale Price per share of Common Stock as of the Trading Day on the date immediately preceding the Exercise Date; and

“B” equals the Exercise Price per Warrant Share then in effect on the Exercise Date.

For purposes of Rule 144 promulgated under the Securities Act, it is intended, understood and acknowledged that the Warrant Shares issued in such a “cashless exercise” transaction shall be deemed to have been acquired by the Holder, and the holding period for the Warrant Shares shall be deemed to have commenced, on the Original Issue Date (provided that the Commission continues to take the position that such treatment is proper at the time of such exercise). In the event that the Registration Statement or another registration statement registering the issuance of Warrant Shares is, for any reason, not effective at the time of exercise of this Warrant, then this Warrant may only be exercised through a cashless exercise, as set forth in this [Section 10](#).

In no event will the exercise of this Warrant be settled in cash.

#### 11. *Limitations on Exercise.*

(a) Notwithstanding anything to the contrary contained herein, the Company shall not effect any exercise of this Warrant, and the Holder shall not be entitled to exercise this Warrant for a number of Warrant Shares in excess of that number of Warrant Shares which, upon giving effect or immediately prior to such exercise, would cause (i) the aggregate number of shares of Common Stock beneficially owned by the Holder, its Affiliates and any other Persons whose beneficial ownership of Common Stock would be aggregated with the Holder’s for purposes of Section 13(d) of the Securities Exchange Act of 1934, as amended (the “**Exchange Act**”), to exceed 9.99% (the “**Maximum Percentage**”) of the total number of issued and outstanding shares of Common Stock of the Company following such exercise, or (ii) the combined voting power of the securities of the Company beneficially owned by the Holder and its Affiliates and any other Persons whose beneficial ownership of Common Stock would be aggregated with the Holder’s for purposes of Section 13(d) of the Exchange Act to exceed 9.99% of the combined voting power of all of the securities of the Company then outstanding following such exercise. For purposes of this Warrant, in determining the number of outstanding shares of Common Stock, the Holder may rely on the number of outstanding shares of Common Stock as reflected in (x) the Company’s most recent Form 10-Q or Form 10-K, as the case may be, filed with the Commission prior to the Exercise Date, (y) a more recent public announcement by the Company or (z) any other notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written request of the Holder, the Company shall within three (3) Trading Days confirm in writing or by electronic mail to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder since the date as of which such number of outstanding shares of Common Stock was reported. By written notice to the Company, the Holder may from time to time increase or decrease the Maximum Percentage to any other percentage not in excess of 19.99% specified in such notice; provided that any such increase or decrease will not be effective until the sixty-first (61st) day after such notice is delivered to the Company. For purposes of this [Section 11\(a\)](#), the aggregate number of shares of Common Stock or voting securities beneficially owned by the Holder and its Affiliates and any other Persons whose beneficial ownership of Common Stock would be aggregated with the Holder’s for purposes of Section 13(d) of the Exchange Act shall include the shares of Common Stock issuable upon the exercise of this Warrant with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (x) exercise of the remaining unexercised and non-cancelled portion of this Warrant by the Holder and (y) exercise or conversion of the unexercised, non-converted or non-cancelled portion of any other securities of the Company that do not have voting power (including without limitation any securities of the Company which would entitle the holder thereof to acquire at any time Common Stock, including without limitation any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock), is subject to a limitation on conversion or exercise analogous to the limitation contained herein and is beneficially owned by the Holder or any of its Affiliates and other Persons whose beneficial ownership of Common Stock would be aggregated with the Holder’s for purposes of Section 13(d) of the Exchange Act.

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(b) This Section 11 shall not restrict the number of shares of Common Stock which a Holder may receive or beneficially own in order to determine the amount of securities or other consideration that such Holder may receive in the event of a Fundamental Transaction as contemplated in Section 9(c) of this Warrant.

12. *No Fractional Shares.* No fractional Warrant Shares will be issued in connection with any exercise of this Warrant. In lieu of any fractional shares that would otherwise be issuable, the number of Warrant Shares to be issued shall be rounded down to the next whole number and the Company shall pay the Holder in cash the fair market value (based on the Closing Sale Price) for any such fractional shares.

13. *Notices.* Any and all notices or other communications or deliveries hereunder (including, without limitation, any Exercise Notice) shall be in writing and shall be deemed given and effective on the earliest of (i) the date of transmission, if such notice or communication is delivered via facsimile or confirmed e-mail prior to 5:30 P.M., New York City time, on a Trading Day, (ii) the next Trading Day after the date of transmission, if such notice or communication is delivered via facsimile or confirmed e-mail on a day that is not a Trading Day or later than 5:30 P.M., New York City time, on any Trading Day, (iii) the Trading Day following the date of mailing, if sent by nationally recognized overnight courier service specifying next business day delivery, or (iv) upon actual receipt by the Person to whom such notice is required to be given, if by hand delivery. The addresses, facsimile numbers and e-mail addresses for such communications shall be:

If to the Company:

Replimune Group, Inc.  
Attention: Jean Franchi  
500 Unicorn Park  
Woburn, MA 01801  
Telephone: (781) 222-9600  
Fax: (781) 926-0870  
Email: jean.franchi@replimune.com

If to the Holder, to its address, facsimile number or e-mail address set forth herein or on the books and records of the Company.

Or, in each of the above instances, to such other address, facsimile number or e-mail address as the recipient party has specified by written notice given to each other party at least five (5) days prior to the effectiveness of such change.

14. *Warrant Agent.* The Company shall initially serve as warrant agent under this Warrant. Upon ten (10) days' notice to the Holder, the Company may appoint a new warrant agent. Any corporation into which the Company or any new warrant agent may be merged or any corporation resulting from any consolidation to which the Company or any new warrant agent shall be a party or any corporation to which the Company or any new warrant agent transfers substantially all of its corporate trust or shareholders services business shall be a successor warrant agent under this Warrant without any further act. Any such successor warrant agent shall promptly cause notice of its succession as warrant agent to be mailed (by first class mail, postage prepaid) to the Holder at the Holder's last address as shown on the Warrant Register.

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15. *Miscellaneous.*

(a) No Rights as a Stockholder. The Holder, solely in such Person's capacity as a holder of this Warrant, shall not be entitled to vote or receive dividends or be deemed the holder of share capital of the Company for any purpose, nor shall anything contained in this Warrant be construed to confer upon the Holder, solely in such Person's capacity as the Holder of this Warrant, any of the rights of a stockholder of the Company or any right to vote, give or withhold consent to any corporate action (whether any reorganization, issue of stock, reclassification of stock, consolidation, merger, amalgamation, conveyance or otherwise), receive notice of meetings, receive dividends or subscription rights, or otherwise, prior to the issuance to the Holder of the Warrant Shares which such Person is then entitled to receive upon the due exercise of this Warrant. In addition, nothing contained in this Warrant shall be construed as imposing any liabilities on the Holder to purchase any securities (upon exercise of this Warrant or otherwise) or as a stockholder of the Company, whether such liabilities are asserted by the Company or by creditors of the Company.

(b) Authorized Shares. Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including, without limitation, amending its certificate or articles of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder as set forth in this Warrant against impairment. Without limiting the generality of the foregoing, the Company will (a) not increase the par value of any Warrant Shares above the amount payable therefor upon such exercise immediately prior to such increase in par value, (b) take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and non-assessable Warrant Shares upon the exercise of this Warrant, and (c) use commercially reasonable efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof as may be necessary to enable the Company to perform its obligations under this Warrant.

(c) Successors and Assigns. Subject to compliance with applicable securities laws, this Warrant may be assigned by the Holder. This Warrant may not be assigned by the Company without the written consent of the Holder, except to a successor in the event of a Fundamental Transaction. This Warrant shall be binding on and inure to the benefit of the Company and the Holder and their respective successors and assigns. Subject to the preceding sentence, nothing in this Warrant shall be construed to give to any Person other than the Company and the Holder any legal or equitable right, remedy or cause of action under this Warrant. This Warrant may be amended only in writing signed by the Company and the Holder, or their successors and assigns.

(d) Amendment and Waiver. Except as otherwise provided herein, the provisions of the Warrants may be amended and the Company may take any action herein prohibited, or omit to perform any act herein required to be performed by it, only if the Company has obtained the written consent of the Holder.

(e) Acceptance. Receipt of this Warrant by the Holder shall constitute acceptance of and agreement to all of the terms and conditions contained herein.

(f) Governing Law; Jurisdiction. ALL QUESTIONS CONCERNING THE CONSTRUCTION, VALIDITY, ENFORCEMENT AND INTERPRETATION OF THIS WARRANT SHALL BE GOVERNED BY AND CONSTRUED AND ENFORCED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK WITHOUT REGARD TO THE PRINCIPLES OF CONFLICTS OF LAW THEREOF. EACH OF THE COMPANY AND THE HOLDER HEREBY IRREVOCABLY SUBMITS TO THE EXCLUSIVE JURISDICTION OF THE STATE AND FEDERAL COURTS SITTING IN THE CITY OF NEW YORK, BOROUGH OF MANHATTAN, FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION HERewith OR WITH ANY TRANSACTION CONTEMPLATED HEREBY OR DISCUSSED HEREIN (INCLUDING WITH RESPECT TO THE ENFORCEMENT OF THE WARRANT OR ANY OF THE DOCUMENTS DELIVERED HEREUNDER), AND HEREBY IRREVOCABLY WAIVES, AND AGREES NOT TO ASSERT IN ANY SUIT, ACTION OR PROCEEDING, ANY CLAIM THAT IT IS NOT PERSONALLY SUBJECT TO THE JURISDICTION OF ANY SUCH COURT. EACH OF THE COMPANY AND THE HOLDER HEREBY IRREVOCABLY WAIVES PERSONAL SERVICE OF PROCESS AND CONSENTS TO PROCESS BEING SERVED IN ANY SUCH SUIT, ACTION OR PROCEEDING BY MAILING A COPY THEREOF VIA REGISTERED OR CERTIFIED MAIL OR OVERNIGHT DELIVERY (WITH EVIDENCE OF DELIVERY) TO SUCH PERSON AT THE ADDRESS IN EFFECT FOR NOTICES TO IT AND AGREES THAT SUCH SERVICE SHALL CONSTITUTE GOOD AND SUFFICIENT SERVICE OF PROCESS AND NOTICE THEREOF. NOTHING CONTAINED HEREIN SHALL BE DEEMED TO LIMIT IN ANY WAY ANY RIGHT TO SERVE PROCESS IN ANY MANNER PERMITTED BY LAW. EACH OF THE COMPANY AND THE HOLDER HEREBY WAIVES ALL RIGHTS TO A TRIAL BY JURY.

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(g) Headings. The headings herein are for convenience only, do not constitute a part of this Warrant and shall not be deemed to limit or affect any of the provisions hereof.

(h) Severability. In case any one or more of the provisions of this Warrant shall be invalid or unenforceable in any respect, the validity and enforceability of the remaining terms and provisions of this Warrant shall not in any way be affected or impaired thereby, and the Company and the Holder will attempt in good faith to agree upon a valid and enforceable provision which shall be a commercially reasonable substitute therefor, and upon so agreeing, shall incorporate such substitute provision in this Warrant.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

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IN WITNESS WHEREOF, the Company has caused this Warrant to be duly executed by its authorized officer as of the date first indicated above.

REPLIMUNE GROUP, INC.

By: \_\_\_\_\_  
Name: Jean Franchi  
Title: Chief Financial Officer

*[Signature Page to Warrant]*

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**SCHEDULE 1**

**FORM OF EXERCISE NOTICE**

[To be executed by the Holder to purchase Warrant Shares under the Warrant]

Ladies and Gentlemen:

- (1) The undersigned is the Holder of Warrant No. \_\_\_ (the "Warrant") issued by Replimune Group, Inc., a Delaware corporation (the "Company"). Capitalized terms used herein and not otherwise defined herein have the respective meanings set forth in the Warrant.
- (2) The undersigned hereby exercises its right to purchase Warrant Shares pursuant to the Warrant.
- (3) The Holder intends that payment of the Exercise Price shall be made as (check one):
- Cash Exercise
  - "Cashless Exercise" under Section 10 of the Warrant
- (4) If the Holder has elected a Cash Exercise, the Holder shall pay the sum of \$ \_\_\_\_\_ in immediately available funds to the Company in accordance with the terms of the Warrant.
- (5) Pursuant to this Exercise Notice, the Company shall deliver to the Holder Warrant Shares determined in accordance with the terms of the Warrant. The Warrant Shares shall be delivered to the following DWAC Account Number:

\_\_\_\_\_

(6) By its delivery of this Exercise Notice, the undersigned represents and warrants to the Company that in giving effect to the exercise evidenced hereby the Holder, its Affiliates and any other Person whose beneficial ownership of Common Stock would be aggregated with the Holder's for purposes of Section 13(d) of the Exchange Act will not beneficially own in excess of the number of shares of Common Stock (as determined in accordance with Section 13(d) of the Securities Exchange Act of 1934, as amended) permitted to be owned under Section 11(a) of the Warrant to which this notice relates.

Dated: \_\_\_\_\_

Name of Holder: \_\_\_\_\_

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

(Signature must conform in all respects to name of Holder as specified on the face of the Warrant)

\_\_\_\_\_

# Morgan Lewis

June 10, 2020

Replimune Group, Inc.  
500 Unicorn Park  
Woburn, MA 01801

Re: Replimune Group, Inc. Registration Statement on Form S-3 (File No. 333-233147)

Ladies and Gentlemen:

We have acted as counsel to Replimune Group, Inc., a Delaware corporation (the "Company"), in connection with the offering by the Company of up to 3,478,261 shares (the "Shares") of the Company's common stock, par value \$0.001 per share ("Common Stock"), including up to 652,173 shares that may be sold pursuant to the exercise of an option by the underwriters, and pre-funded warrants (the "Pre-Funded Warrants") to purchase up to 1,521,738 shares of Common Stock (such shares issuable upon exercise of the Pre-Funded Warrants, the "Pre-Funded Warrant Shares"), pursuant to the Registration Statement on Form S-3 (File No. 333-233147), filed with the Securities and Exchange Commission (the "SEC") under the Securities Act of 1933, as amended (the "Act"), on August 8, 2019, which was declared effective by the SEC on August 15, 2019 (the "Registration Statement"), the related base prospectus, dated August 15, 2019 (the "Base Prospectus"), and the preliminary prospectus supplement, dated June 8, 2020 (the "Preliminary Prospectus Supplement") and together with the Base Prospectus, the "Prospectus"), filed with the SEC pursuant to Rule 424(b) under the Act, and an underwriting agreement, dated June 8, 2020, by and among the Company and J.P. Morgan Securities LLC and SVB Leerink LLC, as representatives of the several underwriters named in Schedule 1 thereto (the "Underwriting Agreement").

In connection with this opinion letter, we have examined the Registration Statement, the Prospectus, the Underwriting Agreement, the Pre-Funded Warrants and originals, or copies certified or otherwise identified to our satisfaction, of the Third Amended and Restated Certificate of Incorporation, as amended (the "Restated Certificate"), and the Amended and Restated Bylaws of the Company, and such other documents, records and other instruments as we have deemed appropriate for purposes of the opinion set forth herein.

We have assumed the genuineness of all signatures, the legal capacity of all natural persons, the authenticity of the documents submitted to us as originals, the conformity with the originals of all documents submitted to us as certified, facsimile or photostatic copies and the authenticity of the originals of all documents submitted to us as copies.

The enforcement of any obligations of the Company may be limited by bankruptcy, insolvency, reorganization, moratorium, marshaling or other laws and rules of law affecting the enforcement generally of creditors' rights and remedies, including, without limitation, fraudulent conveyance and fraudulent transfer laws.

**Morgan, Lewis & Bockius LLP**

One Federal Street  
Boston, MA 02110-1726      📞 +1.617.341.7700  
United States                      📠 +1.617.341.7701

Our opinions are subject to the effects of general principles of equity (whether considered in a proceeding at law or in equity), including but not limited to principles limiting the availability of specific performance or injunctive relief, and concepts of materiality and reasonableness, and the implied duty of good faith and fair dealing.

With respect to the Pre-Funded Warrants, we have assumed that, as of each and every time any of the Pre-Funded Warrants are exercised, the Company will have a sufficient number of authorized and unissued shares of the Common Stock available for issuance under its Restated Certificate to permit full exercise of each of the Pre-Funded Warrants in accordance with their terms without the breach or violation of any other agreement, commitment or obligation of the Company.

Based upon the foregoing, we are of the opinion that (i) the Shares have been duly authorized by the Company and, when issued and sold by the Company and delivered by the Company against receipt of the purchase price therefor, in the manner contemplated by the Underwriting Agreement, will be validly issued, fully paid and non-assessable; (ii) when the Pre-Funded Warrants are issued, sold and delivered in the manner and for the consideration stated in the Registration Statement and the Prospectus, such Pre-Funded Warrants will be valid and binding obligations of the Company, enforceable against the Company in accordance with their terms, subject to bankruptcy, insolvency, fraudulent transfer, reorganization, moratorium and other laws of general applicability relating to or affecting creditors' rights and to general equity principles; and (iii) the Pre-Funded Warrant Shares, when issued and delivered by the Company upon exercise of the Pre-Funded Warrants in accordance with the terms thereof, will be validly issued, fully paid and non-assessable.

The opinions expressed herein are limited to Delaware General Corporation Law. We express no opinion as to the effect of events occurring, circumstances arising, or changes of law becoming effective or occurring, after the date hereof on the matters addressed in this opinion.

We hereby consent to the use of this opinion as Exhibit 5.1 to the Registration Statement and to the reference to us under the caption "Legal matters" in the prospectus included in the Registration Statement. In giving such consent, we do not hereby admit that we are acting within the category of persons whose consent is required under Section 7 of the Act or the rules or regulations of the SEC thereunder.

Very truly yours,

/s/ MORGAN, LEWIS & BOCKIUS LLP

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## Replimune Announces Proposed Public Offering

**Boston, MA – June 8, 2020** – Replimune Group, Inc. (Nasdaq: REPL), a biotechnology company developing oncolytic immuno-gene therapies derived from its Immulytic™ platform, today announced a proposed public offering of \$80 million of shares of its common stock and, in lieu of common stock to certain investors, pre-funded warrants to purchase shares of its common stock. All securities in the offering will be offered by Replimune. In addition, Replimune intends to grant the underwriters a 30-day option to purchase up to an additional \$12 million of shares of its common stock from Replimune at the public offering price, less the underwriting discounts and commissions.

J.P. Morgan Securities LLC, SVB Leerink LLC, and BMO Capital Markets Corp. are acting as joint book-running managers for the proposed offering. Wedbush Securities Inc. is acting as lead manager for the proposed offering. The proposed offering is subject to market and other customary closing conditions, and Replimune cannot assure you as to whether or when the proposed offering may be completed.

The proposed offering will be made only by means of a preliminary prospectus supplement and the accompanying prospectus. A copy of the preliminary prospectus supplement and the accompanying prospectus relating to the proposed offering will be filed with the Securities and Exchange Commission (the “SEC”) and may be obtained, when available, by visiting EDGAR on the SEC website at [www.sec.gov](http://www.sec.gov) or from: J.P. Morgan Securities LLC, Attention: Broadridge Financial Solutions, 1155 Long Island Avenue, Edgewood, NY 11717, by telephone at (866) 803-9204, or by e-mail at [prospectus-eg\\_fi@jpmorgan.com](mailto:prospectus-eg_fi@jpmorgan.com); SVB Leerink LLC, Attention: Syndicate Department, One Federal Street, 37th Floor, Boston, MA 02110, by telephone at (800) 808-7525, ext. 6218, or by e-mail at [syndicate@svbleerink.com](mailto:syndicate@svbleerink.com); or BMO Capital Markets Corp., Attention: Equity Syndicate Department, 3 Times Square, 25th Floor, New York, NY 10036, by telephone at (800) 414-3627 or by e-mail at [bmopropectus@bmo.com](mailto:bmopropectus@bmo.com). The final terms of the proposed offering will be disclosed in a final prospectus supplement to be filed with the SEC.

The shares of common stock and pre-funded warrants described above are being offered by Replimune pursuant to its shelf registration statement on Form S-3, including a base prospectus, that was previously filed by Replimune with the SEC on August 8, 2019 and declared effective by the SEC on August 15, 2019. This press release shall not constitute an offer to sell or the solicitation of an offer to buy, nor shall there be any sale of securities, in any state or jurisdiction in which such an offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state or jurisdiction.

### About Replimune

Replimune Group, Inc., headquartered in Woburn, MA, was founded in 2015 to develop the next generation of oncolytic immuno-gene therapies for the treatment of cancer. Replimune is developing novel, proprietary therapeutics intended to improve the direct cancer-killing effects of selective virus replication and the potency of the immune response to the tumor antigens released. Replimune’s Immulytic™ platform is designed to maximize systemic immune activation, in particular to tumor neoantigens, through robust viral-mediated immunogenic tumor cell killing and the delivery of optimal combinations of immune-activating proteins to the tumor and draining lymph nodes.

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## **Forward-Looking Statements**

This press release contains forward looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, including statements regarding the timing and size of our proposed public offering and our expectations with respect to granting the underwriters a 30-day option to purchase additional shares of our common stock, our goals to develop and commercialize our product candidates, and other statements identified by words such as “could”, “expects”, “intends”, “may”, “plans”, “potential”, “should”, “will”, “would”, or similar expressions and the negatives of those terms. Forward-looking statements are not promises or guarantees of future performance, and are subject to a variety of risks and uncertainties, many of which are beyond our control, and which could cause actual results to differ materially from those contemplated in such forward-looking statements. These factors include risks related to our limited operating history, our ability to generate positive clinical trial results for our product candidates, the costs of operating our in-house manufacturing facility, the timing and scope of regulatory approvals, changes in laws and regulations to which we are subject, competitive pressures, our ability to identify additional product candidates, political and global macro factors including the impact of the coronavirus as a global pandemic and related public health issues, and other risks as may be detailed from time to time in our Annual Reports on Form 10-K and Quarterly Reports on Form 10-Q and other reports we file with the SEC, and in the preliminary prospectus supplement once filed with the SEC and the accompanying prospectus. Our actual results could differ materially from the results described in or implied by such forward-looking statements. Forward-looking statements speak only as of the date hereof, and, except as required by law, we undertake no obligation to update or revise these forward-looking statements.

## **Investor Inquiries**

Chris Brinzey  
Westwicke, an ICR Company  
339.970.2843  
[chris.brinzey@westwicke.com](mailto:chris.brinzey@westwicke.com)

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## Replimune Announces Pricing of Upsized Public Offering

**Boston, MA — June 8, 2020** — Replimune Group, Inc. (Nasdaq: REPL), a biotechnology company developing oncolytic immuno-gene therapies derived from its Immulytic™ platform, today announced the pricing of its public offering of 2,826,088 shares of its common stock at a public offering price of \$23.00 per share. In addition, in lieu of common stock to certain investors, Replimune today announced the pricing of its public offering of pre-funded warrants to purchase 1,521,738 shares of its common stock at a purchase price of \$22.9999 per pre-funded warrant, which equals the public offering price per share of the common stock less the \$0.0001 per share exercise price of each pre-funded warrant. The aggregate gross proceeds from the offering are expected to be approximately \$100 million, before deducting the underwriting discounts and commissions and estimated offering expenses payable by Replimune. All securities in the offering are being offered by Replimune. In addition, Replimune has granted the underwriters a 30-day option to purchase up to an additional 652,173 shares of its common stock from Replimune at the public offering price, less the underwriting discounts and commissions. The offering is expected to close on June 11, 2020, subject to the satisfaction of customary closing conditions.

J.P. Morgan Securities LLC, SVB Leerink LLC, and BMO Capital Markets Corp. are acting as joint book-running managers for the offering. Wedbush Securities Inc. is acting as lead manager for the offering.

A preliminary prospectus supplement relating to and describing the terms of the offering was filed with the Securities and Exchange Commission (the “SEC”) on June 8, 2020. The final prospectus supplement relating to the offering will be filed with the SEC. Copies of the final prospectus supplement and the accompanying prospectus relating to the offering may be obtained, when available, by visiting EDGAR on the SEC website at [www.sec.gov](http://www.sec.gov) or from: J.P. Morgan Securities LLC, Attention: Broadridge Financial Solutions, 1155 Long Island Avenue, Edgewood, NY 11717, by telephone at (866) 803-9204, or by e-mail at [prospectus-eg\\_fi@jpmorgan.com](mailto:prospectus-eg_fi@jpmorgan.com); SVB Leerink LLC, Attention: Syndicate Department, One Federal Street, 37th Floor, Boston, MA 02110, by telephone at (800) 808-7525, ext. 6218, or by e-mail at [syndicate@svbleerink.com](mailto:syndicate@svbleerink.com); or BMO Capital Markets Corp., Attention: Equity Syndicate Department, 3 Times Square, 25th Floor, New York, NY 10036, by telephone at (800) 414-3627 or by e-mail at [bmopropectus@bmo.com](mailto:bmopropectus@bmo.com). The final terms of the offering will be disclosed in a final prospectus supplement to be filed with the SEC.

The shares of common stock and the pre-funded warrants described above are being offered by Replimune pursuant to its shelf registration statement on Form S-3, including a base prospectus, that was previously filed by Replimune with the SEC on August 8, 2019 and declared effective by the SEC on August 15, 2019. This press release shall not constitute an offer to sell or the solicitation of an offer to buy, nor shall there be any sale of these securities, in any state or jurisdiction in which such an offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state or jurisdiction.

### About Replimune

Replimune Group, Inc., headquartered in Woburn, MA, was founded in 2015 to develop the next generation of oncolytic immuno-gene therapies for the treatment of cancer. Replimune is developing novel, proprietary therapeutics intended to improve the direct cancer-killing effects of selective virus replication and the potency of the immune response to the tumor antigens released. Replimune’s Immulytic™ platform is designed to maximize systemic immune activation, in particular to tumor neoantigens, through robust viral-mediated immunogenic tumor cell killing and the delivery of optimal combinations of immune-activating proteins to the tumor and draining lymph nodes.

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## **Forward-Looking Statements**

This press release contains forward looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, including statements regarding our public offering, our goals to develop and commercialize our product candidates, the gross proceeds we expect to receive from our public offering, and other statements identified by words such as “could,” “expects,” “intends,” “may,” “plans,” “potential,” “should,” “will,” “would,” or similar expressions and the negatives of those terms. Forward-looking statements are not promises or guarantees of future performance, and are subject to a variety of risks and uncertainties, many of which are beyond our control, and which could cause actual results to differ materially from those contemplated in such forward-looking statements. These factors include risks related to market conditions, the completion of our public offering on the anticipated terms or at all, our limited operating history, our ability to generate positive clinical trial results for our product candidates, the costs of operating our in-house manufacturing facility, the timing and scope of regulatory approvals, changes in laws and regulations to which we are subject, competitive pressures, our ability to identify additional product candidates, political and global macro factors including the impact of the coronavirus as a global pandemic and related public health issues, and other risks as may be detailed from time to time in our Annual Reports on Form 10-K and Quarterly Reports on Form 10-Q and other reports we file with the SEC, and in the preliminary prospectus supplement, the final prospectus supplement, once filed with the SEC, and the accompanying prospectus. Our actual results could differ materially from the results described in or implied by such forward-looking statements. Forward-looking statements speak only as of the date hereof, and, except as required by law, we undertake no obligation to update or revise these forward-looking statements.

## **Investor Inquiries**

Chris Brinzey  
Westwicke, an ICR Company  
339.970.2843  
[chris.brinzey@westwicke.com](mailto:chris.brinzey@westwicke.com)

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