UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 8-K

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

Date of Report (Date of earliest event reported): **October 15, 2019**

RHYTHM PHARMACEUTICALS, INC.

(Exact name of registrant as specified in its charter)

Delaware	**001-38223**	**46-2159271**
(State or other jurisdiction of incorporation)	(Commission File Number)	(IRS Employer Identification Number)

222 Berkeley Street
12th Floor
Boston, MA 02116
(Address of principal executive offices, including Zip Code)

Registrant's telephone number, including area code: **(857) 264-4280**

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, $0.001 par value per share	RYTM	The Nasdaq Stock Market LLC (Nasdaq Global Market)

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

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

Item 8.01. Other Events.

On October 15, 2019, the Company entered into an underwriting agreement (the "Underwriting Agreement") with Morgan Stanley & Co. LLC, Goldman Sachs & Co. LLC and Cowen and Company, LLC, as representatives of the several underwriters named therein (the "Underwriters"), relating to the issuance and sale of 8,108,108 shares (the "Shares") of the Company's common stock to the Underwriters (the "Offering"). The Shares were sold at a price to the public of $18.50 per Share and were purchased by the Underwriters from the Company at a price of $17.39 per Share. The Company also granted the Underwriters a 30-day option to purchase up to 1,216,216 additional shares of its common stock. The net proceeds to the Company from the Offering, excluding any exercise by the Underwriters of their 30-day option to purchase additional shares, are expected to be approximately $140.2 million after deducting the underwriting discounts and commissions and estimated offering expenses payable by the Company.

The Offering is expected to close on or about October 18, 2019, subject to the satisfaction of customary closing conditions. The Underwriting Agreement contains customary representations, warranties, covenants and agreements by the Company, indemnification obligations of the Company and the Underwriters, including for liabilities under the Securities Act of 1933, as amended, other obligations of the parties and termination provisions. The 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 Offering is being made by means of a written prospectus forming part of a shelf registration statement onForm S-3 (Registration Statement No. 333-228323), previously filed by the Company with the Securities and Exchange Commission, which automatically became effective upon filing on November 9, 2018, and a related prospectus supplement. The Underwriting Agreement is attached as Exhibit 1.1 hereto, and the description of the terms of the Underwriting Agreement is qualified in its entirety by reference to such exhibit. A copy of the opinion of Morgan, Lewis and Bockius LLP relating to the legality of the issuance and sale of the Shares in the Offering is attached as Exhibit 5.1 hereto.

On October 15, 2019, the Company issued a press release announcing that it had commenced the Offering. On October 15, 2019, the Company issued a press release announcing the pricing of the Offering. Copies of these press releases are attached as Exhibits 99.1 and 99.2 hereto, respectively.

Neither the disclosures on this Form 8-K nor the attached press releases shall constitute an offer to sell or the solicitation of an offer to buy these securities, nor shall there be any sale of these securities in any state or 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.

Exhibit No.	Description
1.1	Underwriting Agreement dated October 15, 2019
5.1	Opinion of Morgan, Lewis & Bockius LLP
23.1	Consent of Morgan, Lewis & Bockius LLP (included in Exhibit 5.1)
99.1	Press Release dated October 15, 2019
99.2	Press Release dated October 15, 2019

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.

RHYTHM PHARMACEUTICALS, INC.

Date: October 16, 2019

By: /s/ Hunter Smith
Hunter Smith
Chief Financial Officer

Exhibit 1.1

EXECUTION VERSION

8,108,108 Shares

Rhythm Pharmaceuticals, Inc.

Common Stock
($0.001 par value)

UNDERWRITING AGREEMENT

October 15, 2019

October 15, 2019

Morgan Stanley & Co. LLC
Goldman Sachs & Co. LLC
Cowen and Company, LLC

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

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

c/o Cowen and Company, LLC
599 Lexington Avenue
New York, New York 10022

Ladies and Gentlemen:

Rhythm Pharmaceuticals, Inc., a Delaware corporation (the "**Company**"), proposes to issue and sell to the several Underwriters named in Schedule I hereto (the "**Underwriters**"), for whom you (the "**Representatives**") are acting as representatives, 8,108,108 shares of its common stock, $0.001 par value per share (the "**Firm Shares**"). The Company also proposes to issue and sell to the several Underwriters not more than an additional 1,216,216 shares of its common stock, $0.001 par value per share (the "**Additional Shares**"), if and to the extent that the Representatives shall have determined to exercise, on behalf of the Underwriters, the right to purchase such shares of common stock granted to the Underwriters in Section 2 hereof. The Firm Shares and the Additional Shares are hereinafter collectively referred to as the "**Shares**." The shares of common stock, $0.001 par value per share, of the Company to be outstanding after giving effect to the sales contemplated hereby are hereinafter referred to as the "**Common Stock**."

The Company has filed with the Securities and Exchange Commission (the "**Commission**") a registration statement on Form S-3 (File No. 228323), including a prospectus, relating to certain securities of the Company to be issued from time to time by the Company (the "**Shelf Securities**"), including the Shares. The registration statement as amended at the time of effectiveness, including the information (if any) deemed to be part of the registration statement pursuant to Rule 430A or Rule 430B under the Securities Act of 1933, as amended (the "**Securities Act**"), is hereinafter referred to as the "**Registration Statement**" and the related prospectus covering the Shelf Securities is hereinafter referred to as the "**Base Prospectus**." The Base Prospectus, as supplemented by the prospectus supplement specifically related to the Shares in the form first used to confirm sales of the Shares (or in the form first made available to the Underwriters by the Company to meet requests of purchasers pursuant to Rule 173 under the Securities Act) is hereinafter referred to as the "**Prospectus**" and the term "**preliminary prospectus**" means any preliminary form of the Prospectus.

For purposes of this Agreement, "**free writing prospectus**" has the meaning set forth in Rule 405 under the Securities Act, "**Time of Sale Prospectus**" means the Base Prospectus and the preliminary prospectus together with the documents, pricing information and free writing prospectuses, if any, each as

set forth in Schedule II hereto, and "**broadly available road show**" means a "bona fide electronic road show" as defined in Rule 433(h)(5) under the Securities Act that has been made available without restriction to any person. As used herein, the terms "Registration Statement," "preliminary prospectus," "Time of Sale Prospectus" and "Prospectus" shall include the documents, if any, incorporated by reference therein as of the date hereof. The terms "supplement," "amendment" and "amend" as used herein with respect to the Registration Statement, the Prospectus or the Time of Sale Prospectus shall include all documents subsequently filed by the Company with the Commission pursuant to the Securities Exchange Act of 1934, as amended (the "**Exchange Act**"), that are deemed to be incorporated by reference therein.

1. *Representations and Warranties*. The Company represents and warrants to and agrees with each of the Underwriters that:

(a) The Registration Statement has become effective; no stop order suspending the effectiveness of the Registration Statement is in effect, and no proceedings for such purpose are pending before or threatened by the Commission.

(b) (i) Each document, if any, filed or to be filed pursuant to the Exchange Act and incorporated by reference in the Time of Sale Prospectus or the Prospectus complied or will comply when so filed in all material respects with the Exchange Act and the applicable rules and regulations of the Commission thereunder, (ii) the Registration Statement, when it became effective, did not contain and, as amended or supplemented, if applicable, will not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading, (ii) the Registration Statement and the Prospectus comply and, as amended or supplemented, if applicable, will comply in all material respects with the Securities Act and the applicable rules and regulations of the Commission thereunder, (iii) the Time of Sale Prospectus does not, and at the time of each sale of the Shares in connection with the offering when the Prospectus is not yet available to prospective purchasers and at the Closing Date (as defined in Section 4), the Time of Sale Prospectus, as then amended or supplemented by the Company, if applicable, will not, contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading, (iv) each broadly available road show, if any, when considered together with the Time of Sale Prospectus, does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading and (v) the Prospectus does not contain and, as amended or supplemented, if applicable, will not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading, except that the representations and warranties set forth in this paragraph do not apply to statements or omissions in the Registration Statement, the Time of Sale Prospectus or the Prospectus based upon information relating to any Underwriter furnished to the Company in writing by such Underwriter through you expressly for use therein.

(c) The Company is not an "ineligible issuer" in connection with the offering pursuant to Rules 164, 405 and 433 under the Securities Act. Any free writing prospectus that the Company is required to file pursuant to Rule 433(d) under the Securities Act has been, or will be, filed with the Commission in accordance with the requirements of the Securities Act and the applicable rules and regulations of the Commission thereunder. Each free writing prospectus that the Company has filed, or is required to file, pursuant to Rule 433(d) under the Securities Act or that was prepared by or on behalf of or used or referred to by the Company complies or will comply in all material respects with the requirements of the Securities Act and the applicable rules and regulations of the Commission thereunder. Except for the free writing prospectuses, if any, identified in Schedule II hereto, and electronic road

shows, if any, each furnished to you before first use, the Company has not prepared, used or referred to, and will not, without your prior consent, prepare, use or refer to, any free writing prospectus.

(d) From the time of the initial filing of the Registration Statement to the Commission (or, if earlier, the first date on which the Company engaged directly or through any person authorized to act on its behalf in any Testing-the-Waters Communication) 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 Section 5(d) of the Securities Act.

(e) The Company (i) has not alone engaged in any Testing-the-Waters Communication (other than Testing-the-Waters Communications with the consent of the Representatives with entities that are qualified institutional buyers within the meaning of Rule 144A under the Securities Act or institutions that are accredited investors within the meaning of Rule 501 under the Securities Act) and (ii) has not authorized anyone other than the Representatives to engage in Testing-the-Waters Communications. The Company reconfirms that the Representatives have been authorized to act on its behalf in undertaking Testing-the-Waters Communications. The Company has not distributed any Written Testing-the-Waters Communications. "**Written Testing-the-Waters Communication**" means any Testing-the-Waters Communication that is a written communication within the meaning of Rule 405 under the Securities Act.

(f) As of the time of each sale of the Shares in connection with the offering when the Prospectus is not yet available to prospective purchasers, none of (A) the Time of Sale Prospectus, (B) any free writing prospectus, when considered together with the Time of Sale Prospectus, and (C) any individual Written Testing-the-Waters Communication, when considered together with the Time of Sale Prospectus, included, includes or will include an untrue statement of a material fact or omitted, omits or will omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(g) The Company has been duly incorporated and is validly existing as a corporation in good standing under the laws of the jurisdiction in which it is chartered or organized with full corporate power and authority to own or lease, as the case may be, and to operate its properties and conduct its business as described in the Prospectus, any free writing prospectus and the Time of Sale Prospectus, and is duly qualified to do business as a foreign corporation and is in good standing under the laws of each jurisdiction which requires such qualification, except where the failure to be so qualified or in good standing would not reasonably be expected, individually or in the aggregate, to have a material adverse effect on the condition (financial or otherwise), prospects, earnings, business or properties of the Company and its subsidiaries, taken as a whole, whether or not arising from transactions in the ordinary course of business (a "**Material Adverse Effect**").

(h) Each subsidiary of the Company has been duly incorporated, is validly existing as a corporation in good standing under the laws of the jurisdiction of its incorporation, has the corporate power and authority to own its property and to conduct its business as described in the Time of Sale Prospectus and is duly qualified to transact business and is in good standing in each jurisdiction in which the conduct of its business or its ownership or leasing of property requires such qualification, except to the extent that the failure to be so qualified or be in good standing would not have a Material Adverse Effect; all of the issued shares of capital stock of each subsidiary of the Company have been duly and validly authorized and issued, are fully paid and non-assessable and are owned directly by the Company, free and clear of all liens, encumbrances, equities or claims.

(i) The outstanding shares of capital stock of the Company have been duly and validly authorized and issued and are fully paid and nonassessable; the Shares have been duly and validly

authorized and, when issued and delivered to and paid for by the Underwriters pursuant to this Agreement, will be fully paid and nonassessable; the holders of shares of capital stock of the Company are not entitled to preemptive or other rights to subscribe for the Shares; and, except as set forth in the Prospectus, any free writing prospectus and the Time of Sale Prospectus, no options, warrants or other rights to purchase, agreements or other obligations to issue, or rights to convert any obligations into or exchange any securities for, shares of capital stock of or ownership interests in the Company are outstanding. The authorized capital stock of the Company conforms as to legal matters to the description thereof contained in each of the Time of Sale Prospectus and the Prospectus.

(j) Neither the Company nor its subsidiaries currently own or control, directly or indirectly, any interest in any other corporation, partnership, trust, joint venture, limited liability company, association, or other business entity. Neither the Company nor its subsidiaries are a participant in any joint venture, partnership or similar arrangement.

(k) There is no contract or other document of a character required to be described in the Registration Statement or Time of Sale Prospectus, or to be filed as an exhibit thereto, which is not described or filed as required (and the preliminary prospectus contains in all material respects the same description of the foregoing matters contained in the Time of Sale Prospectus); and the statements contained or incorporated by reference in the Prospectus and the Time of Sale Prospectus under the headings "Material United States Federal Income and Estate Tax Consequences to Non-U.S. Holders of Our Common Stock," "Risk Factors —Risks Related to Our Intellectual Property Rights," "Risk Factors—Risks Related To Regulatory Approval and Marketing of Setmelanotide and Other Legal Compliance Matters," "Business—Patents and Proprietary Rights", and "Business—Regulatory Matters," insofar as such statements summarize legal matters, agreements, documents or proceedings discussed therein, are accurate and fair summaries of such legal matters, agreements, documents or proceedings.

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

(m) There has not occurred any material adverse change, or any development involving a prospective material adverse change, in the condition, financial or otherwise, or in the earnings, business or operations of the Company or its subsidiaries, taken as a whole, from that set forth in the Time of Sale Prospectus.

(n) The Company is not and, after giving effect to the offering and sale of the Shares and the application of the proceeds thereof as described in the Prospectus, any free writing prospectus and the Time of Sale Prospectus, will not be an "investment company" as defined in the Investment Company Act of 1940, as amended.

(o) No consent, approval, authorization, filing with or order of any court or governmental agency or body is required in connection with the transactions contemplated herein, except such as have been obtained under the Securities Act and such as may be required under the blue sky laws of any jurisdiction in connection with the purchase and distribution of the Shares by the Underwriters in the manner contemplated herein and in the Prospectus, any free writing prospectus and the Time of Sale Prospectus.

(p) [Reserved]

(q) Neither the issue and sale of the Shares nor the consummation of any other of the transactions herein contemplated nor the fulfillment of the terms hereof will conflict with, result in a breach or violation of, or imposition of any lien, charge or encumbrance upon any property or assets of the Company or its subsidiaries pursuant to, (i) the charter or by-laws of the Company and its

subsidiaries, (ii) the terms of any indenture, contract, lease, mortgage, deed of trust, note agreement, loan agreement or other agreement, obligation, condition, covenant or instrument to which the Company and its subsidiaries are a party or bound or to which its property is subject, or (iii) any statute, law, rule, regulation, judgment, order or decree applicable to the Company or any of its subsidiaries of any court, regulatory body, administrative agency, governmental body, arbitrator or other authority having jurisdiction over the Company or any of its properties, except in the case of clauses (ii) and (iii) as would not have a Material Adverse Effect.

(r) No holders of securities of the Company have rights to the registration of such securities under the Registration Statement, except such rights which have been duly waived in accordance with their terms and with the General Corporation Law of the State of Delaware.

(s) The consolidated historical financial statements and schedules of the Company included or incorporated by reference in the Prospectus, the Time of Sale Prospectus and the Registration Statement present fairly in all material respects the financial condition, results of operations and cash flows of the Company as of the dates and for the periods indicated, comply as to form in all material respects with the applicable accounting requirements of the Securities Act and have been prepared in conformity with generally accepted accounting principles applied on a consistent basis throughout the periods involved (except as otherwise noted therein). Except as included therein, no historical or pro forma financial statements or supporting schedules are required to be included or incorporated by reference in the Prospectus, the Time of Sale Prospectus and the Registration Statement under the Securities Act and the rules and regulations of the Commission thereunder. To the extent included or incorporated by reference in the Prospectus, the Time of Sale Prospectus and the Registration Statement, the pro forma financial statements included or incorporated by reference therein include assumptions that provide a reasonable basis for presenting the significant effects directly attributable to the transactions and events described therein, the related pro forma adjustments give appropriate effect to those assumptions, and the pro forma adjustments reflect the proper application of those adjustments to the historical financial statement amounts in the pro forma financial statements included or incorporated by reference in the Prospectus, the Time of Sale Prospectus and the Registration Statement. To the extent included or incorporated by reference in the Prospectus, the Time of Sale Prospectus and the Registration Statement, the pro forma financial statements included therein comply as to form in all material respects with the applicable accounting requirements of Regulation S-X under the Securities Act and the pro forma adjustments have been properly applied to the historical amounts in the compilation of those statements.

(t) 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 is subsidiaries or their property is pending or, to the knowledge of the Company, threatened that could reasonably be expected to have a Material Adverse Effect, except as set forth in or contemplated in the Prospectus, any free writing prospectus and the Time of Sale Prospectus (exclusive of any supplement thereto).

(u) The Company and its subsidiaries own or lease all such properties as are necessary to the conduct of its operations as presently conducted in all material respects.

(v) Neither the Company nor any of its subsidiaries is in violation or default of (i) its respective charter or bylaws, (ii) the terms of any indenture, contract, lease, mortgage, deed of trust, note agreement, loan agreement or other agreement, obligation, condition, covenant or instrument to which it or any of its subsidiaries is a party or bound or to which its or any of its subsidiaries property is subject, or (iii) any statute, law, rule, regulation, judgment, order or decree of any court, regulatory body, administrative agency, governmental body, arbitrator or other authority having jurisdiction over the Company or any of its subsidiaries or any of their properties, as applicable, except in the case of clauses

(ii) and (iii), for such breach or violation as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(w) Ernst & Young LLP, who have certified certain financial statements of the Company and delivered their report with respect to the audited financial statements and schedules included or incorporated by reference in the Prospectus, any free writing prospectus and the Time of Sale Prospectus, are independent public accountants with respect to the Company within the meaning of the Securities Act and the applicable published rules and regulations thereunder.

(x) There are no transfer taxes or other similar fees or charges under federal law or the laws of any state, or any political subdivision thereof, required to be paid in connection with the execution and delivery of this Agreement or the issuance by the Company or sale by the Company of the Shares.

(y) The Company and each of its subsidiaries has filed all tax returns that are required to be filed or has requested extensions thereof (except in any case in which the failure so to file would not have a Material Adverse Effect, except as set forth in or contemplated in the Prospectus, any free writing prospectus and the Time of Sale Prospectus (exclusive of any supplement thereto)) and has paid all taxes required to be paid by it and any other assessment, fine or penalty levied against it, to the extent that any of the foregoing is due and payable, except for any such assessment, fine or penalty that is currently being contested in good faith or as would not have a Material Adverse Effect.

(z) No labor problem or dispute with the employees of the Company or any of its subsidiaries exists or, to the knowledge of the Company, is threatened or imminent, and the Company is not aware of any existing or imminent labor disturbance by the employees of any of its principal suppliers, contractors or customers, that could have a Material Adverse Effect.

(aa) The Company and each of its subsidiaries are insured by insurers of recognized financial responsibility against such losses and risks and in such amounts as the Company reasonably believes are prudent and customary in the businesses in which they are engaged; all policies of insurance and fidelity or surety bonds insuring the Company and its subsidiaries or their business, assets, employees, officers and directors are in full force and effect; the Company and each of its subsidiaries are in compliance with the terms of such policies and instruments in all material respects; and there are no claims by the Company or any of its subsidiaries under any such policy or instrument as to which any insurance company is denying liability or defending under a reservation of rights clause; neither the Company nor any of its subsidiaries have been refused any insurance coverage sought or applied for; and neither the Company nor any of its subsidiaries have any reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue its business at a cost that would not have a Material Adverse Effect.

(bb) The Company and each of its subsidiaries possess all licenses, certificates, permits and other authorizations issued by all applicable authorities necessary to conduct its business, except in each case, the lack of which would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect, and neither the Company nor any of its subsidiaries have received any notice of proceedings relating to the revocation or modification of any such certificate, authorization or permit which, singly or in the aggregate, if the subject of an unfavorable decision, ruling or finding, would have a Material Adverse Effect.

(cc) The Company and each of its subsidiaries maintain a system of internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in accordance with management's general or specific authorizations; (ii) transactions are recorded as necessary to permit

preparation of financial statements in conformity with generally accepted accounting principles and to maintain asset accountability; (iii) access to assets is permitted only in accordance with management's general or specific authorization; and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. The Company's and its subsidiaries' internal controls over financial reporting are effective and the Company is not aware of any material weakness in its internal controls over financial reporting.

(dd) The Company and each of its subsidiaries maintain "disclosure controls and procedures" (as such term is defined in Rule 13a-15(e) under the Exchange Act) and such disclosure controls and procedures are effective.

(ee) Neither the Company nor any of its subsidiaries have taken, directly or indirectly, without giving effect to any activities of the Underwriters, any action designed to or that would constitute or that might reasonably be expected to cause or result in, under the Exchange Act or otherwise, stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Shares.

(ff) Except in each case as would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect, the Company and each of its subsidiaries (i) are in compliance with any and all applicable foreign, federal, state and local laws and regulations relating to the protection of human health and safety, the environment or hazardous or toxic substances or wastes, pollutants or contaminants ("**Environmental Laws**"), (ii) have received and is in compliance with all permits, licenses or other approvals required of it under applicable Environmental Laws to conduct its business and (iii) have not received notice of any actual or potential liability under any environmental law. Neither the Company nor any of its subsidiaries have been named as a "potentially responsible party" under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended.

(gg) None of the following events has occurred or exists: (i) a failure to fulfill the obligations, if any, under the minimum funding standards of Section 302 of the United States Employee Retirement Income Security Act of 1974, as amended ("**ERISA**"), and the regulations and published interpretations thereunder with respect to a Plan that is required to be funded, determined without regard to any waiver of such obligations or extension of any amortization period that would reasonably be expected to have a Material Adverse Effect; (ii) an audit or investigation by the Internal Revenue Service, the U.S. Department of Labor, the Pension Benefit Guaranty Corporation or any other federal or state governmental agency or any foreign regulatory agency with respect to the employment or compensation of employees by the Company or any of its subsidiaries that would reasonably be expected to have a Material Adverse Effect; (iii) any breach of any contractual obligation, or any violation of law or applicable qualification standards, with respect to the employment or compensation of employees by the Company or any of its subsidiaries that would reasonably be expected to have a Material Adverse Effect. None of the following events has occurred or is reasonably likely to occur: (i) a material increase in the aggregate amount of contributions required to be made to all Plans in the current fiscal year of the Company compared to the amount of such contributions made in the most recently completed fiscal year of the Company; (ii) a material increase in the "accumulated post-retirement benefit obligations" (within the meaning of Statement of Financial Accounting Standards 106) of the Company or any of its subsidiaries compared to the amount of such obligations in the most recently completed fiscal year of the Company; (iii) any event or condition giving rise to a liability under Title IV of ERISA that would reasonably be expected to have a Material Adverse Effect; or (iv) the filing of a claim by one or more employees or former employees of the Company or any of its subsidiaries related to their employment that would reasonably be expected to have a Material Adverse Effect. For purposes of this paragraph, the term "Plan" means a plan (within the meaning of Section 3(3) of ERISA) subject to Title IV of ERISA with respect to which the Company of any of its subsidiaries may have any liability.

(hh) There is and has been no failure on the part of the Company or any of its subsidiaries and any of their respective directors or officers, in their capacities as such, to comply with any provision of the Sarbanes-Oxley Act of 2002 and the rules and regulations promulgated in connection therewith (the "**Sarbanes-Oxley Act**"), including Section 402 relating to loans.

(ii) (i) None of the Company or its subsidiaries, or any director, officer, or employee thereof, or, to the Company's knowledge, any agent, controlled affiliate or representative of the Company or its subsidiaries, has taken or will take any action in furtherance of an offer, payment, promise to pay, or authorization or approval of the payment, giving or receipt of money, property, gifts or anything else of value, directly or indirectly, to any government official (including any officer or employee of a government or 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) in order to influence official action, or to any person in violation of any applicable anti-corruption laws; (ii) the Company and its subsidiaries and, to the Company's knowledge, each of its controlled affiliates, has conducted its business in compliance with applicable anti-corruption laws and has instituted and maintained and will continue to maintain policies and procedures reasonably designed to promote and achieve compliance with such laws and with the representations and warranties contained herein; and (iii) neither the Company nor its subsidiaries will use, directly or indirectly, the proceeds of the offering in furtherance of an offer, payment, promise to pay, or authorization of the payment or giving of money, or anything else of value, to any person in violation of any applicable anti-corruption laws.

(jj) The operations of the Company and its subsidiaries are and have been conducted at all times in material compliance with all applicable financial recordkeeping and reporting requirements, including those of the Bank Secrecy Act, as amended by Title III of the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001 (USA PATRIOT Act), and the applicable anti-money laundering statutes of jurisdictions where the Company and its subsidiaries conduct 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.

(kk) (i) None of the Company, any of its subsidiaries, or any director, officer, or employee thereof, or, to the Company's knowledge, any agent, affiliate or representative of the Company or any of its subsidiaries, is an individual or entity ("**Person**") that is, or is owned or controlled by one or more Persons that are

(A) the subject of any sanctions administered or enforced by the U.S. Department of Treasury's Office of Foreign Assets Control ("**OFAC**"), the United Nations Security Council ("**UNSC**"), the European Union ("**EU**"), Her Majesty's Treasury ("**HMT**"), or other relevant sanctions authority (collectively, "**Sanctions**"), or

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

(ii) The Company will not, directly or indirectly, use the proceeds of the offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other Person:

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

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

(iii) For the past 5 years, the Company and its subsidiaries have not knowingly engaged in, is not now knowingly engaged in, and will not engage in, any dealings or transactions with any Person, or in any country or territory, that at the time of the dealing or transaction is or was the subject of Sanctions.

(ll) The Company and its subsidiaries own, possess, license or have other rights to use, on reasonable terms, all patents, patent applications, trade and service marks, trade and service mark registrations, trade names, copyrights, licenses, inventions, trade secrets, technology, know-how and other intellectual property (collectively, the "**Intellectual Property**") necessary for the conduct of the their business in all material respects as now conducted or as proposed in the Prospectus to be conducted. Except as set forth in the Prospectus, any free writing prospectus and the Time of Sale Prospectus under the captions "Risk Factors—Risks Related to Our Intellectual Property Rights" and "Business—Patents and Proprietary Rights," (a) there are no rights of third parties to any such Intellectual Property; (b) to the Company's knowledge, there is no material infringement by third parties of any such Intellectual Property; (c) there is no pending or, to the Company's knowledge, threatened action, suit, proceeding or claim by others challenging the Company's or any of its subsidiaries' rights in or to any such Intellectual Property, and, except as would not reasonably be expected to have a Material Adverse Effect, the Company is unaware of any facts which would form a reasonable basis for any such claim; (d) there is no pending or, to the Company's knowledge, threatened action, suit, proceeding or claim by others challenging the validity or scope of any such Intellectual Property, and, except as would not reasonably be expected to have a Material Adverse Effect, the Company is unaware of any facts which would form a reasonable basis for any such claim; (e) there is no pending or, to the Company's knowledge, threatened action, suit, proceeding or claim by others that the Company or any of its subsidiaries infringes or otherwise violates any patent, trademark, copyright, trade secret or other proprietary rights of others, and, except as would not reasonably be expected to have a Material Adverse Effect, the Company is unaware of any other fact which would form a reasonable basis for any such claim; (f) there is no U.S. patent which contains claims that dominate any Intellectual Property described in the Prospectus, any free writing prospectus and the Time of Sale Prospectus as being owned by or licensed to the Company or its subsidiaries or that interferes with the issued claims of any such Intellectual Property; and (g) there is no prior art that may render any U.S. patent held by the Company and its subsidiaries invalid, and all prior art of which the Company is aware that may be material to the validity of a U.S. patent or to the patentability of a U.S. patent application has been disclosed to the U.S. Patent and Trademark Office.

(mm) The statements contained or incorporated by reference in the Prospectus and the Time of Sale Prospectus under the captions "Risk Factors — Risks Related to Our Intellectual Property Rights" and "Business — Patents and Proprietary Information," insofar as such statements summarize legal matters, agreements, documents, or proceedings discussed therein, are accurate and fair summaries of such legal matters, agreements, documents or proceedings.

(nn) Except as described in the Registration Statement, the Prospectus, any free writing prospectus and the Time of Sale Prospectus, as applicable, the Company and its subsidiaries (i) are and at all times have been in compliance with all local, state, federal, national, supranational and foreign statutes, rules and regulations applicable to the ownership, testing, development, manufacture, packaging, processing, use, storage, import, export or disposal of any product manufactured or distributed by the Company and its subsidiaries, including, without limitation, the Federal Food, Drug and Cosmetic Act (21 U.S.C. § 301 et seq.), and the federal Anti-kickback Statute (42 U.S.C. § 1320a-7b(b)), the regulations promulgated pursuant to such laws, and any successor government programs, and comparable state laws, regulations relating to Good Laboratory Practices and Good Clinical Practices (collectively, the "**Applicable Laws**"), except for such non-compliance as would not, individually or in the aggregate, have a Material Adverse Effect; (ii) have not received any notice from any court or arbitrator or governmental or regulatory authority alleging or asserting non-compliance with any Applicable Laws or any licenses, exemptions, certificates, approvals, clearances, authorizations, permits, registrations and supplements or amendments thereto required by any such Applicable Laws ("**Authorizations**"), except for such non- compliance as would not, individually or in the aggregate, have a Material Adverse Effect; (iii) possess all material Authorizations and such Authorizations are valid and in full force and effect and is not in violation of any term of any such Authorizations, except for such violations as would not, individually or in the aggregate, have a Material Adverse Effect; (iv) have not received written notice of any claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from any court or arbitrator or governmental or regulatory authority alleging that any product operation or activity is in violation of any Applicable Laws or Authorizations nor, to the Company's knowledge, is any such claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action threatened, except such as would not, individually or in the aggregate, have a Material Adverse Effect; (v) have not received written notice that any court or arbitrator or governmental or regulatory authority has taken, is taking or intends to take action to materially limit, suspend, materially modify or revoke any Authorizations nor, to the Company's knowledge, is any such limitation, suspension, modification or revocation threatened, except such as would not, individually or in the aggregate, have a Material Adverse Effect; (vi) have filed, obtained, maintained or submitted all material reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by any Applicable Laws or Authorizations and that all such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were complete and accurate on the date filed in all material respects (or were corrected or supplemented by a subsequent submission); and (vii) are not a party to any corporate integrity agreements, monitoring agreements, consent decrees, settlement orders, or similar agreements with or imposed by any governmental or regulatory authority.

(oo) Subsequent to the respective dates as of which information is given in each of the Registration Statement, the Time of Sale Prospectus and the Prospectus, (i) neither the Company nor its subsidiaries have incurred any material liability or obligation, direct or contingent, nor entered into any material transaction; (ii) neither the Company nor its subsidiaries have purchased any of its respective outstanding capital stock, nor declared, paid or otherwise made any dividend or distribution of any kind on its capital stock other than ordinary and customary dividends; and (iii) there has not been any material change in the capital stock, short-term debt or long-term debt of the Company or its subsidiaries, except in each case as described in each of the Registration Statement, the Time of Sale Prospectus and the Prospectus, respectively.

(pp) Except as described in the Time of Sale Prospectus, the Company has not sold, issued or distributed any shares of Common Stock during the six-month period preceding the date hereof, including any sales pursuant to Rule 144A under, or Regulation D or S of, the Securities Act, other than shares issued pursuant to employee benefit plans, qualified stock option plans or other employee compensation plans or pursuant to outstanding options, rights or warrants.

(qq) Any certificate signed by any officer of the Company and delivered to the Representatives or counsel for the Underwriters in connection with the offering of the Shares shall be deemed a representation and warranty by the Company, as to matters covered thereby, to each Underwriter.

(rr) (i) The Company and its subsidiaries have materially complied and are presently in material compliance with all of their internal and external privacy policies, contractual obligations, applicable laws, statutes, judgments, orders, rules and regulations of any court or arbitrator or other governmental or regulatory authority and any other legal obligations, in each case, relating to the collection, use, transfer, import, export, storage, protection, disposal and disclosure by the Company and its subsidiaries of personal data or personally identifiable information ("**Data Security Obligations**", and such data, "**Data**"); (ii) neither the Company nor any of its subsidiaries have received any written notification of or complaint regarding and, to the Company's knowledge, there are no other facts that, individually or in the aggregate, would reasonably indicate non-compliance with any Data Security Obligation; and (iii) there is no action, suit or proceeding by or before any court or governmental agency, authority or body pending or threatened alleging in writing non-compliance with any Data Security Obligation.

(ss) The Company and its subsidiaries have taken all commercially reasonable technical and organizational measures necessary to protect the information technology systems and Data used in connection with the operation of their business. Without limiting the foregoing, the Company and its subsidiaries have used commercially reasonable efforts to establish and maintain, and has established, maintained, implemented and complied with, commercially reasonable information technology, information security, cyber security and data protection controls, policies and procedures, including oversight, access controls, encryption, technological and physical safeguards and business continuity/disaster recovery and security plans that are designed to protect against and prevent unauthorized access to or acquisition of Data used in connection with the operation of the their business ("**Breach**"). To the Company's knowledge, there has been no such Breach, and neither the Company nor any of its subsidiaries have been notified in writing of and has no knowledge of any event or condition that would reasonably be expected to result in, any such Breach.

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

(uu) 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 Common Stock is registered pursuant to Section 12(b) or 12(g) of the Exchange Act and is listed on The Nasdaq Global Market (the "**Exchange**"), and the Company has taken no action designed to, or reasonably likely to have the effect of, terminating the registration of the Common Stock under the Exchange Act or delisting the Common Stock from the Exchange, nor has the Company received any notification that the Commission or the Exchange is contemplating terminating such registration or listing.

2. *Agreements to Sell and Purchase.* The Company hereby agrees to sell to the several Underwriters, and each Underwriter, upon the basis of the representations and warranties herein contained, but subject to the conditions hereinafter stated, agrees, severally and not jointly, to purchase from the Company the respective numbers of Firm Shares set forth in Schedule I hereto opposite its name at $17.39 a share (the "**Purchase Price**").

On the basis of the representations and warranties contained in this Agreement, and subject to its terms and conditions, the Company agrees to sell to the Underwriters the Additional Shares, and the Underwriters shall have the right to purchase, severally and not jointly, up to 1,216,216 Additional Shares at the Purchase Price, provided, however, that the amount paid by the Underwriters for any Additional Shares shall be reduced by an amount per share equal to any dividends declared by the Company and payable on the Firm Shares but not payable on such Additional Shares. You may exercise this right on behalf of the Underwriters in whole or from time to time in part by giving written notice to the Company not later than 30 days after the date of this Agreement. Any exercise notice shall specify the number of Additional Shares to be purchased by the Underwriters and the date on which such shares are to be purchased. Each purchase date must be at least one business day after the written notice is given and may not be earlier than the closing date for the Firm Shares nor later than ten business days after the date of such notice. Additional Shares may be purchased as provided in Section 4 hereof solely for the purpose of covering sales of shares in excess of the number of the Firm Shares. On each day, if any, that Additional Shares are to be purchased (an "**Option Closing Date**"), each Underwriter agrees, severally and not jointly, to purchase the number of Additional Shares (subject to such adjustments to eliminate fractional shares as you may determine) that bears the same proportion to the total number of Additional Shares to be purchased on such Option Closing Date as the number of Firm Shares set forth in Schedule I hereto opposite the name of such Underwriter bears to the total number of Firm Shares.

3. *Terms of Public Offering.* The Company is advised by you that the Underwriters propose to make a public offering of their respective portions of the Shares as soon after the Registration Statement and this Agreement have become effective as in your judgment is advisable. The Company is further advised by you that the Shares are to be offered to the public initially at $18.50 a share (the "**Public Offering Price**").

4. *Payment and Delivery.* Payment for the Firm Shares shall be made to the Company in federal or other funds immediately available in New York City against delivery of such Firm Shares for the respective accounts of the several Underwriters at 10:00 a.m., New York City time, on October 18, 2019, or at such other time on the same or such other date, not later than October 25, 2019 as shall be designated in writing by you. The time and date of such payment are hereinafter referred to as the "**Closing Date**."

Payment for any Additional Shares shall be made to the Company in federal or other funds immediately available in New York City against delivery of such Additional Shares for the respective accounts of the several Underwriters at 10:00 a.m., New York City time, on the date specified in the corresponding notice described in Section 2 or at such other time on the same or on such other date, in any event not later than December 2, 2019, as shall be designated in writing by you.

The Firm Shares and Additional Shares shall be registered in such names and in such denominations as you shall request in writing not later than one full business day prior to the Closing Date or the applicable Option Closing Date, as the case may be. The Firm Shares and Additional Shares shall be delivered to you on the Closing Date or an Option Closing Date, as the case may be, for the respective accounts of the several Underwriters, with any transfer taxes payable in connection with the transfer of the Shares to the Underwriters duly paid, against payment of the Purchase Price therefor.

5. *Conditions to the Underwriters' Obligations.* The obligations of the several Underwriters hereunder are subject to the accuracy of the representations and warranties of the Company contained herein or in certificates of any officer of the Company delivered pursuant to the provisions hereof, to the performance by the Company of its covenants and other obligations hereunder, and to the following further conditions:

(a) Subsequent to the execution and delivery of this Agreement and prior to the Closing Date:

(i) there shall not have occurred any downgrading, nor shall any notice have been given of any intended or potential downgrading or of any review for a possible change that does not indicate the direction of the possible change, in the rating accorded any of the securities of the Company by any "nationally recognized statistical rating organization," as such term is defined in Section 3(a)(62) of the Exchange Act; and

(ii) there shall not have occurred any change, or any development involving a prospective change, in the condition, financial or otherwise, or in the earnings, business or operations of the Company, taken as a whole, from that set forth in the Time of Sale Prospectus that, in your judgment, is material and adverse and that makes it, in your judgment, impracticable to market the Shares on the terms and in the manner contemplated in the Time of Sale Prospectus.

(b) The Underwriters shall have received on the Closing Date a certificate, dated the Closing Date and signed by an executive officer of the Company, to the effect set forth in Section 5(a)(i) above and to the effect that the representations and warranties of the Company contained in this Agreement are true and correct as of the Closing Date and that the Company has complied with all of the agreements and satisfied all of the conditions on its part to be performed or satisfied hereunder on or before the Closing Date.

The officer signing and delivering such certificate may rely upon the best of his or her knowledge as to proceedings threatened.

(c) The Underwriters shall have received on the Closing Date an opinion of Morgan, Lewis & Bockius LLP, outside counsel for the Company, substantially in the form attached hereto as Exhibit A-1.

(d) The Underwriters shall have received on the Closing Date opinions of Hogan Lovells LLP and Hogan Lovells International LLP, special regulatory counsel for the Company, each substantially in the form attached hereto as Exhibit A-2.

(e) The Underwriters shall have received on the Closing Date an opinion of Kendall Square IP Strategies, LLC, special intellectual property counsel for the Company, substantially in the form attached hereto as Exhibit A-3.

(f) The Underwriters shall have received on the Closing Date an opinion of Lando & Anastasi, LLP, special intellectual property counsel for the Company, substantially in the form attached hereto as Exhibit A-4.

(g) The Underwriters shall have received on the Closing Date an opinion of Ropes & Gray LLP, counsel for the Underwriters, dated the Closing Date, with respect to the issuance and sale of the Shares, the Registration Statement, the Prospectus and any free writing prospectus, the Time of Sale Prospectus (together with any supplement thereto) and other related matters as the Representatives may reasonably require, and the Company shall have furnished to such counsel such documents as they request for the purpose of enabling them to pass upon such matters.

The opinion of Morgan, Lewis & Bockius LLP described in Section 5(c) above shall be rendered to the Underwriters at the request of the Company and shall so state therein.

(h) The Underwriters shall have received, on each of the date hereof and the Closing Date, a letter dated the date hereof or the Closing Date, as the case may be, in form and substance satisfactory to the Underwriters, from Ernst & Young LLP, independent public accountants, containing statements and information of the type ordinarily included in accountants' "comfort letters" to underwriters with respect to the financial statements and certain financial information contained or incorporated by reference in the Registration Statement, the Time of Sale Prospectus and the Prospectus; *provided* that the letter delivered on the Closing Date shall use a "cut-off date" not earlier than the date hereof.

(i) The Underwriters shall have received, on each of the date hereof and the Closing Date, a certificate dated the date hereof or the Closing Date, as the case may be, in form and substance satisfactory to the Representatives, from the Chief Financial Officer of the Company.

(j) The "lock-up" agreements, each substantially in the form of Exhibit B hereto, between you and each officer, director and specified stockholders of the Company as set forth in Schedule III relating to sales and certain other dispositions of shares of Common Stock or certain other securities, delivered to you on or before the date hereof, shall be in full force and effect on the Closing Date.

(k) [Reserved]

(l) The Company will deliver to each Underwriter (or its agent), on the date of execution of this Agreement, a properly completed and executed Certification Regarding Beneficial Owners of Legal Entity Customers (the "Certification"), together with copies of identifying documentation, and the Company undertakes to provide such additional supporting documentation as each Underwriter may reasonably request in connection with the verification of the Certification.

(m) The several obligations of the Underwriters to purchase Additional Shares hereunder are subject to the delivery to you on the applicable Option Closing Date of the following:

(i) a certificate, dated the Option Closing Date and signed by an executive officer of the Company, confirming that the certificate delivered on the Closing Date pursuant to Section 5(b) hereof remains true and correct as of such Option Closing Date;

(ii) an opinion of Morgan, Lewis & Bockius LLP, outside counsel for the Company, dated the Option Closing Date, relating to the Additional Shares to be purchased on such Option Closing Date and otherwise to the same effect as the opinion required by Section 5(c) hereof;

(iii) opinions of Hogan Lovells LLP and Hogan Lovells International LLP, special regulatory counsel for the Company, dated the Option Closing Date, relating to the Additional Shares to be purchased on such Option Closing Date and otherwise to the same effect as the opinion required by Section 5(d) hereof;

(iv) an opinion of Kendall Square IP Strategies, LLC, special intellectual property counsel for the Company, dated the Option Closing Date, relating to the Additional Shares to be purchased on such Option Closing Date and otherwise to the same effect as the opinion required by Section 5(e) hereof;

(v) an opinion of Lando & Anastasi, LLP, special intellectual property counsel for the Company, dated the Option Closing Date, relating to the Additional Shares to be

purchased on such Option Closing Date and otherwise to the same effect as the opinion required by Section 5(f) hereof;

(vi) an opinion of Ropes & Gray LLP, counsel for the Underwriters, dated the Option Closing Date, relating to the Additional Shares to be purchased on such Option Closing Date and otherwise to the same effect as the opinion required by Section 5(g) hereof;

(vii) a letter dated the Option Closing Date, in form and substance satisfactory to the Underwriters, from Ernst & Young LLP, independent public accountants, substantially in the same form and substance as the letter furnished to the Underwriters pursuant to Section 5(h) hereof; *provided* that the letter delivered on the Option Closing Date shall use a "cut-off date" not earlier than three business days prior to such Option Closing Date;

(viii) a certificate dated the Option Closing Date, in form and substance satisfactory to the Underwriters, from the Chief Financial Officer of the Company; and

(ix) such other documents as you may reasonably request with respect to the good standing of the Company, the due authorization and issuance of the Additional Shares to be sold on such Option Closing Date and other matters related to the issuance of such Additional Shares.

6. *Covenants of the Company*. The Company covenants with each Underwriter as follows:

(a) To furnish to you, without charge, five signed copies of the Registration Statement (including exhibits thereto and documents incorporated by reference) and for delivery to each other Underwriter a conformed copy of the Registration Statement (without exhibits thereto but including documents incorporated by reference) and to furnish to you in New York City, without charge, prior to 10:00 a.m. New York City time on the business day next succeeding the date of this Agreement and during the period mentioned in Section 6(e) or 6(f) below, as many copies of the Time of Sale Prospectus, the Prospectus, any documents incorporated by reference therein and any supplements and amendments thereto or to the Registration Statement as you may reasonably request.

(b) Before amending or supplementing the Registration Statement, the Time of Sale Prospectus or the Prospectus, to furnish to you a copy of each such proposed amendment or supplement and not to file any such proposed amendment or supplement to which you reasonably object, and to file with the Commission within the applicable period specified in Rule 424(b) under the Securities Act any prospectus required to be filed pursuant to such rule.

(c) To furnish to you a copy of each proposed free writing prospectus to be prepared by or on behalf of, used by, or referred to by the Company and not to use or refer to any proposed free writing prospectus to which you reasonably object.

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

(e) If the Time of Sale Prospectus is being used to solicit offers to buy the Shares at a time when the Prospectus is not yet available to prospective purchasers and any event shall occur or condition

exist as a result of which it is necessary to amend or supplement the Time of Sale Prospectus in order to make the statements therein, in the light of the circumstances, not misleading, or if any event shall occur or condition exist as a result of which the Time of Sale Prospectus conflicts with the information contained or incorporated by reference in the Registration Statement then on file, or if, in the opinion of counsel for the Underwriters, it is necessary to amend or supplement the Time of Sale Prospectus to comply with applicable law, forthwith to prepare, file with the Commission and furnish, at its own expense, to the Underwriters and to any dealer upon request, either amendments or supplements to the Time of Sale Prospectus so that the statements in the Time of Sale Prospectus as so amended or supplemented will not, in the light of the circumstances when the Time of Sale Prospectus is delivered to a prospective purchaser, be misleading or so that the Time of Sale Prospectus, as amended or supplemented, will no longer conflict with the Registration Statement, or so that the Time of Sale Prospectus, as amended or supplemented, will comply with applicable law.

(f) If, during such period after the first date of the public offering of the Shares as in the opinion of counsel for the Underwriters the Prospectus (or in lieu thereof the notice referred to in Rule 173(a) of the Securities Act) is required by law to be delivered in connection with sales by an Underwriter or dealer, any event shall occur or condition exist as a result of which it is necessary to amend or supplement the Prospectus in order to make the statements therein, in the light of the circumstances when the Prospectus (or in lieu thereof the notice referred to in Rule 173(a) of the Securities Act) is delivered to a purchaser, not misleading, or if, in the opinion of counsel for the Underwriters, it is necessary to amend or supplement the Prospectus to comply with applicable law, forthwith to prepare, file with the Commission and furnish, at its own expense, to the Underwriters and to the dealers (whose names and addresses you will furnish to the Company) to which Shares may have been sold by you on behalf of the Underwriters and to any other dealers upon request, either amendments or supplements to the Prospectus so that the statements in the Prospectus as so amended or supplemented will not, in the light of the circumstances when the Prospectus (or in lieu thereof the notice referred to in Rule 173(a) of the Securities Act) is delivered to a purchaser, be misleading or so that the Prospectus, as amended or supplemented, will comply with applicable law.

(g) To endeavor to qualify the Shares for offer and sale under the securities or Blue Sky laws of such jurisdictions as you shall reasonably request; provided, that in no event shall the Company be obligated to qualify to do business in any jurisdiction where it is not now so qualified or to take any action that would subject it to service of process in suits, other than those arising out of the offering or sale of the Shares, in any jurisdiction where it is now so subject.

(h) To make generally available to the Company's security holders and to you as soon as practicable an earnings statement covering a period of at least twelve months beginning with the first fiscal quarter of the Company occurring after the date of this Agreement which shall satisfy the provisions of Section 11(a) of the Securities Act and the rules and regulations of the Commission thereunder.

(i) Whether or not the transactions contemplated in this Agreement are consummated or this Agreement is terminated, to pay or cause to be paid all expenses incident to the performance of its obligations under this Agreement, including: (i) the fees, disbursements and expenses of the Company's counsel and the Company's accountants in connection with the registration and delivery of the Shares under the Securities Act and all other fees or expenses in connection with any preliminary prospectus, the Time of Sale Prospectus, the Prospectus, any free writing prospectus prepared by or on behalf of, used by, or referred to by the Company and amendments and supplements to any of the foregoing, including all printing costs associated therewith, and the mailing and delivering of copies thereof to the Underwriters and dealers, in the quantities hereinabove specified, (ii) all costs and expenses related to the transfer and delivery of the Shares to the Underwriters, including any transfer or other taxes payable thereon, (iii) the cost of printing or producing any Blue Sky or Legal Investment memorandum in connection with the

offer and sale of the Shares under state securities laws and all expenses in connection with the qualification of the Shares for offer and sale under state securities laws as provided in Section 6(g) hereof, including filing fees and the reasonable fees and disbursements of counsel for the Underwriters (with such fees and disbursements not to exceed $5,000) in connection with such qualification and in connection with the Blue Sky or Legal Investment memorandum, (iv) all filing fees and the reasonable fees and disbursements of counsel to the Underwriters (with such fees and disbursements not to exceed $40,000) incurred in connection with the review and qualification of the offering of the Shares by the Financial Industry Regulatory Authority, (v) all costs and expenses incident to listing the Shares on the Nasdaq Global Market, (vi) the cost of printing certificates representing the Shares, (vii) the costs and charges of any transfer agent, registrar or depositary, (viii) the costs and expenses of the Company relating to investor presentations on any "road show" undertaken in connection with the marketing of the offering of the Shares, including, without limitation, expenses associated with the preparation or dissemination of any electronic road show, expenses associated with the production of road show slides and graphics, fees and expenses of any consultants engaged in connection with the road show presentations with the prior approval of the Company, travel and lodging expenses of the representatives and officers of the Company and any such consultants, and 50% of the cost of any aircraft chartered in connection with the road show, provided that no aircraft shall be chartered without the prior consent of the Company, and provided further that, for the avoidance of doubt, the Underwriters shall pay their own travel expenses (including lodging, transportation, meals and entertainment), (ix) the document production charges and expenses associated with printing this Agreement and (x) all other costs and expenses incident to the performance of the obligations of the Company hereunder for which provision is not otherwise made in this Section. It is understood, however, that except as provided in this Section, Section 8 entitled "Indemnity and Contribution" and the last paragraph of Section 10 below, the Underwriters will pay all of their costs and expenses, including fees and disbursements of their counsel, stock transfer taxes payable on resale of any of the Shares by them and any advertising expenses connected with any offers they may make.

(j) 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 (a) completion of the distribution of the Shares within the meaning of the Securities Act and (b) completion of the Restricted Period (as defined in this Section 6).

(k) If at any time following the distribution of any Written Testing-the-Waters Communication there occurred or occurs an event or development as a result of which such Written Testing-the-Waters Communication included or would include an untrue statement of a material fact or omitted or would omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances existing at that subsequent time, not misleading, the Company will promptly notify the Representatives and will promptly amend or supplement, at its own expense, such Written Testing-the-Waters Communication to eliminate or correct such untrue statement or omission.

The Company also covenants with each Underwriter that, without the prior written consent of the Representatives on behalf of the Underwriters, it will not, during the period ending 90 days after the date of the Prospectus (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, lend, or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into or exercisable or exchangeable for Common Stock or (2) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of the Common Stock, 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) except as otherwise permitted herein, file any registration statement with the Commission relating to the offering of any shares of Common Stock or any securities convertible into or exercisable or exchangeable for Common Stock.

The restrictions contained in the preceding paragraph shall not apply to (1) the Shares to be sold hereunder, (2) the issuance by the Company of shares of Common Stock, or any securities convertible into, or exercisable for, shares of Common Stock, pursuant to any employee stock option plan, incentive plan, employee stock purchase plan or stock ownership plan of the Company in effect on the date hereof and disclosed in the Prospectus, provided that the underlying equity securities shall continue to be subject to the restrictions on transfer set forth in the preceding paragraph during the Restricted Period, (3) the issuance by the Company of shares of Common Stock issuable upon the conversion of securities outstanding on the date hereof, (4) the filing of one or more registration statements on Form S-8, or (5) the offer, issuance and sale of shares of Common Stock or any securities convertible into, or exercisable, or exchangeable for, shares of Common Stock in connection with any acquisition or strategic investment (including any joint venture, strategic alliance or partnership) so long as (x) the aggregate number of shares of Common Stock issued or issuable does not exceed 5% of the number of shares of Common Stock outstanding immediately after the issuance and sale of the securities, and (y) each recipient of any such shares or other securities agrees to restrictions on the resale of securities that are consistent with the lock-up letters described in Section 5(h) hereof for the remainder of the Restricted Period.

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

8. *Indemnity and Contribution.* (a) The Company agrees to indemnify and hold harmless each Underwriter, each person, if any, who controls any Underwriter within the meaning of either Section 15 of the Securities Act or Section 20 of the Exchange Act and each affiliate of any Underwriter within the meaning of Rule 405 under the Securities Act from and against any and all losses, claims, damages and liabilities (including, without limitation, any legal or other expenses reasonably incurred in connection with defending or investigating any such action or claim) caused by any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement or any amendment thereof, any preliminary prospectus, the Time of Sale Prospectus or any amendment or supplement thereto, any issuer free writing prospectus as defined in Rule 433(h) under the Securities Act, any Company information that the Company has filed, or is required to file, 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"), the Prospectus or any amendment or supplement thereto, or any Written Testing-the-Waters Communication, or caused by any omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading, except insofar as such losses, claims, damages or liabilities are caused by any such untrue statement or omission or alleged untrue statement or omission based upon information relating to any Underwriter furnished to the Company in writing by such Underwriter through you expressly for use therein. The Company agrees and confirms that references to "affiliates" of Morgan Stanley that appear in this Agreement shall be understood to include Mitsubishi UFJ Morgan Stanley Securities Co., Ltd.

(b) 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 either Section 15 of the Securities Act or Section 20 of the Exchange Act to the same extent as the foregoing indemnity from the Company to such Underwriter, but only with reference to information relating to such Underwriter furnished to the Company in writing by such Underwriter through you expressly for use in the Registration Statement, any preliminary prospectus, the Time of Sale Prospectus, any issuer free writing prospectus, road show or the Prospectus or any amendment or supplement thereto, it being understood and agreed that the only such information consists of the following information in the Prospectus: the concession figures appearing in the 3rd

paragraph under the caption "Underwriters" and the information relating to stabilizing transactions and passive market making contained in the 12th paragraph under the caption "Underwriters."

(c) In case any proceeding (including any governmental investigation) shall be instituted involving any person in respect of which indemnity may be sought pursuant to Section 8(a) or 8(b), such person (the "**indemnified party**") shall promptly notify the person against whom such indemnity may be sought (the "**indemnifying party**") in writing and the indemnifying party, upon request of the indemnified party, shall retain counsel reasonably satisfactory to the indemnified party to represent the indemnified party and any others the indemnifying party may designate in such proceeding and shall pay the fees and disbursements of such counsel related to such proceeding. In any such proceeding, any indemnified party 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 party unless (i) the indemnifying party and the indemnified party shall have mutually agreed to the retention of such counsel or (ii) the named parties to any such proceeding (including any impleaded parties) include both the indemnifying party and the indemnified party and representation of both parties by the same counsel would be inappropriate due to actual or potential differing interests between them. It is understood that the indemnifying party shall not, in respect of the legal expenses of any indemnified party in connection with any proceeding or related proceedings 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 such indemnified parties and that all such fees and expenses shall be reimbursed as they are incurred. Such firm shall be designated in writing by the Representatives, in the case of parties indemnified pursuant to Section 8(a), and by the Company, in the case of parties indemnified pursuant to Section 8(b). The indemnifying party shall not be liable for any settlement of any proceeding effected without its written consent, but if settled with such consent or if there be a final judgment for the plaintiff, the indemnifying party agrees to indemnify the indemnified party from and against any loss or liability by reason of such settlement or judgment. Notwithstanding the foregoing sentence, if at any time an indemnified party shall have requested an indemnifying party to reimburse the indemnified party for fees and expenses of counsel as contemplated by the second and third sentences of this paragraph, the indemnifying party agrees that it shall be liable for any settlement of any proceeding effected without its written consent if (i) such settlement is entered into more than 30 days after receipt by such indemnifying party of the aforesaid request and (ii) such indemnifying party shall not have reimbursed the indemnified party in accordance with such request prior to the date of such settlement. No indemnifying party shall, without the prior written consent of the indemnified party, effect any settlement of any pending or threatened proceeding in respect of which any indemnified party is or could have been a party and indemnity could have been sought hereunder by such indemnified party, unless such settlement includes an unconditional release of such indemnified party from all liability on claims that are the subject matter of such proceeding and does not include a statement as to or an admission of fault, culpability or a failure to act by or on behalf of any indemnified party.

(d) To the extent the indemnification provided for in Section 8(a) or 8(b) is unavailable to an indemnified party or insufficient in respect of any losses, claims, damages or liabilities referred to therein, then each indemnifying party under such paragraph, in lieu of indemnifying such indemnified party thereunder, shall contribute to the amount paid or payable by such indemnified party 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 hand from the offering of the Shares or (ii) if the allocation provided by clause 8(d)(i) above is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause 8(d)(i) above but also the relative fault of the Company on the one hand and of the Underwriters on the other hand 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 hand in connection with the offering of the Shares shall be deemed to be in the same respective proportions as the net proceeds from the offering of the Shares

(before deducting expenses) received by the Company and the total underwriting discounts and commissions received by the Underwriters, in each case as set forth in the table on the cover of the Prospectus, bear to the aggregate Public Offering Price of the Shares. The relative fault of the Company on the one hand and the Underwriters on the other hand shall be determined by reference to, among other things, whether 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. The Underwriters' respective obligations to contribute pursuant to this Section 8 are several in proportion to the respective number of Shares they have purchased hereunder, and not joint.

(e) The Company and the Underwriters agree that it would not be just or equitable if contribution pursuant to this Section 8 were determined by *pro rata* allocation (even if the Underwriters were treated as one entity for such purpose) or by any other method of allocation that does not take account of the equitable considerations referred to in Section 8(d). The amount paid or payable by an indemnified party as a result of the losses, claims, damages and liabilities referred to in Section 8(d) shall be deemed to include, subject to the limitations set forth above, any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending any such action or claim. Notwithstanding the provisions of this Section 8, no Underwriter shall be required to contribute any amount in excess of the amount by which the total price at which the Shares underwritten by it and distributed to the public were offered to the public exceeds the amount of any damages 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 remedies provided for in this Section 8 are not exclusive and shall not limit any rights or remedies which may otherwise be available to any indemnified party at law or in equity.

(f) The indemnity and contribution provisions contained in this Section 8 and the representations, warranties and other statements of the Company contained in this Agreement shall remain operative and in full force and effect regardless of (i) any termination of this Agreement, (ii) any investigation made by or on behalf of any Underwriter, any person controlling any Underwriter or any affiliate of any Underwriter or by or on behalf of the Company, its officers or directors or any person controlling the Company and (iii) acceptance of and payment for any of the Shares.

9. *Termination*. The Underwriters may terminate this Agreement by notice given by you to the Company, if after the execution and delivery of this Agreement and prior to the Closing Date (i) trading generally shall have been suspended or materially limited on, or by, as the case may be, any of the New York Stock Exchange, the NYSE American, the Nasdaq Global Market, the Chicago Board of Options Exchange, the Chicago Mercantile Exchange or the Chicago Board of Trade, (ii) trading of any securities of the Company shall have been suspended on any exchange or in any over-the-counter market, (iii) a material disruption in securities settlement, payment or clearance services in the United States shall have occurred, (iv) any moratorium on commercial banking activities shall have been declared by Federal or New York State authorities or (v) there shall have occurred any outbreak or escalation of hostilities, or any change in financial markets or any calamity or crisis that, in your judgment, is material and adverse and which, singly or together with any other event specified in this clause (v), makes it, in your judgment, impracticable or inadvisable to proceed with the offer, sale or delivery of the Shares on the terms and in the manner contemplated in the Time of Sale Prospectus or the Prospectus.

10. *Effectiveness; Defaulting Underwriters*. This Agreement shall become effective upon the execution and delivery hereof by the parties hereto.

If, on the Closing Date or an Option Closing Date, as the case may be, any one or more of the Underwriters shall fail or refuse to purchase Shares that it has or they have agreed to purchase hereunder on such date, and the aggregate number of Shares which such defaulting Underwriter or Underwriters agreed but failed or refused to purchase is not more than one-tenth of the aggregate number of the Shares to be purchased on such date, the other Underwriters shall be obligated severally in the proportions that the number of Firm Shares set forth opposite their respective names in Schedule I bears to the aggregate number of Firm Shares set forth opposite the names of all such non-defaulting Underwriters, or in such other proportions as you may specify, to purchase the Shares which such defaulting Underwriter or Underwriters agreed but failed or refused to purchase on such date; *provided* that in no event shall the number of Shares that any Underwriter has agreed to purchase pursuant to this Agreement be increased pursuant to this Section 10 by an amount in excess of one-ninth of such number of Shares without the written consent of such Underwriter. If, on the Closing Date, any Underwriter or Underwriters shall fail or refuse to purchase Firm Shares and the aggregate number of Firm Shares with respect to which such default occurs is more than one-tenth of the aggregate number of Firm Shares to be purchased on such date, and arrangements satisfactory to you and the Company for the purchase of such Firm Shares are not made within 36 hours after such default, this Agreement shall terminate without liability on the part of any non-defaulting Underwriter or the Company. In any such case either you or the Company shall have the right to postpone the Closing Date, but in no event for longer than seven days, in order that the required changes, if any, in the Registration Statement, in the Time of Sale Prospectus, in the Prospectus or in any other documents or arrangements may be effected. If, on an Option Closing Date, any Underwriter or Underwriters shall fail or refuse to purchase Additional Shares and the aggregate number of Additional Shares with respect to which such default occurs is more than one-tenth of the aggregate number of Additional Shares to be purchased on such Option Closing Date, the non-defaulting Underwriters shall have the option to (i) terminate their obligation hereunder to purchase the Additional Shares to be sold on such Option Closing Date or (ii) purchase not less than the number of Additional Shares that such non-defaulting Underwriters would have been obligated to purchase in the absence of such default. Any action taken under this paragraph shall not relieve any defaulting Underwriter from liability in respect of any default of such Underwriter under this Agreement.

If this Agreement shall be terminated by the Underwriters, or any of them, because of any failure or refusal on the part of the Company to comply with the terms or to fulfill any of the conditions of this Agreement, or if for any reason the Company shall be unable to perform its obligations under this Agreement, the Company will reimburse the Underwriters or such Underwriters as have so terminated this Agreement with respect to themselves, severally, for all out-of-pocket expenses (including the fees and disbursements of their counsel) reasonably incurred by such Underwriters in connection with this Agreement or the offering contemplated hereunder.

11. *Entire Agreement.* (a) This Agreement, together with any contemporaneous written agreements and any prior written agreements (to the extent not superseded by this Agreement) that relate to the offering of the Shares, represents the entire agreement between the Company and the Underwriters with respect to the preparation of any preliminary prospectus, the Time of Sale Prospectus, the Prospectus, the conduct of the offering, and the purchase and sale of the Shares.

(b) The Company acknowledges that in connection with the offering of the Shares: (i) the Underwriters have acted at arm's length, are not agents of, and owe no fiduciary duties to, the Company or any other person, (ii) the Underwriters owe the Company only those duties and obligations set forth in this Agreement and prior written agreements (to the extent not superseded by this Agreement), if any, (iii) the Underwriters may have interests that differ from those of the Company and (iv) the Underwriters are not advising the Company or any other person as to any legal, tax, investment, accounting or regulatory matters in any jurisdiction. The Company waives to the full extent permitted by applicable law any

claims it may have against the Underwriters arising from an alleged breach of fiduciary duty in connection with the offering of the Shares.

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

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

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

13. *Counterparts*. This Agreement may be signed in two or more counterparts, each of which shall be an original, with the same effect as if the signatures thereto and hereto were upon the same instrument.

14. *Applicable Law.* This Agreement shall be governed by and construed in accordance with the internal laws of the State of New York.

15. *Headings*. The headings of the sections of this Agreement have been inserted for convenience of reference only and shall not be deemed a part of this Agreement.

16. *Notices*. All communications hereunder shall be in writing and effective only upon receipt and if to the Underwriters shall be delivered, mailed or sent to you in care of Morgan Stanley & Co. LLC, 1585 Broadway, New York, New York 10036, Attention: Equity Syndicate Desk, with a copy to the Legal Department; Goldman Sachs & Co. LLC, 200 West Street, New York, New York 10282-2198, Attention Registration Department; and Cowen and Company, LLC, Attention: Head of Equity Capital Markets, Fax 646-562-1249, with a copy to the General Counsel, Fax: 646-562-1124; and, in each case, with a copy (which copy shall not constitute notice) to Ropes & Gray LLP, Prudential Tower, 800 Boylston Street, Boston, Massachusetts 02199, Attention: Patrick O'Brien; and if to the Company, shall be delivered, mailed or sent to 500 Boylston Street, 11th Floor, Boston, Massachusetts 02116, attention of the Legal Department, with a copy (which copy shall not constitute notice) to Morgan, Lewis & Bockius LLP, Boston, Massachusetts 02110, Attention: Julio E. Vega.

[*Remainder of page intentionally left blank*]

Very truly yours,

RHYTHM PHARMACEUTICALS, INC.

By: /s/Keith Gottesdiener
Name: Keith Gottesdiener
Title: Chief Executive Officer and President

Accepted as of the date hereof

Morgan Stanley & Co. LLC
Goldman Sachs & Co. LLC
Cowen and Company, LLC

Acting severally on behalf of themselves and the several Underwriters named in Schedule I hereto.

By: Morgan Stanley & Co. LLC

By: /s/Kalli Dircks
Name: Kalli Dircks
Title: Executive Director

By: Goldman Sachs & Co. LLC

By: /s/Raffael Fiumara
Name: Raffael Fiumara
Title: Vice President

By: Cowen and Company, LLC

By: /s/David Bohn
Name: David Bohn
Title: Managing Director

SCHEDULE I

Underwriter	Number of Firm Shares To Be Purchased
Morgan Stanley & Co. LLC	2,837,838
Goldman Sachs & Co. LLC	2,837,838
Cowen and Company, LLC	1,783,784
Needham & Company, LLC	567,568
Ladenburg Thalmann & Co. Inc.	81,081
Total:	8,108,108

SCHEDULE II

Time of Sale Prospectus

1. Base Prospectus dated November 9, 2018

2. Preliminary Prospectus Supplement dated October 15, 2019

3. The information set forth on the pricing term sheet attached hereto as Exhibit C

SCHEDULE III

New Enterprise Associates 13, L.P.

NEA Ventures 2009 Limited Partnership

MPM BioVentures V, L.P.

MPM Asset Management Investors BV5 LLC

Keith Gottesdiener

Hunter Smith

Murray Stewart

Simon Kelner

Nithya Desikan

Jennifer Good

Ed Mathers

Todd Foley

Christophe Jean

David McGirr

David Meeker

Stuart Arbuckle

EXHIBIT A-1

FORM OF OPINION OF COMPANY COUNSEL

We have acted as counsel to Rhythm Pharmaceuticals, Inc., a Delaware corporation (the "Company"), in connection with the issuance and sale by the Company of [•] shares (the "Shares") of Common Stock, par value $0.001 per share, of the Company (the "Common Stock") pursuant to the Underwriting Agreement dated October [•], 2019 (the "Underwriting Agreement") by and among the Company and Morgan Stanley & Co. LLC, Goldman Sachs & Co. LLC and Cowen and Company, LLC, as representatives of the several underwriters named in Schedule I therein (the "Underwriters"). This opinion is furnished to you pursuant to Section 5(c) of the Underwriting Agreement. Capitalized terms used and not otherwise defined herein have the respective meanings ascribed thereto in the Underwriting Agreement.

Although we act as outside counsel to the Company, our representation is limited to matters individually referred to us by the Company. Accordingly, there may be matters affecting the Company as to which we have not been consulted.

We have examined such documents as we have considered necessary for purposes of rendering our opinions set forth in this letter, including originals or copies of the following documents:

(i) the Registration Statement on Form S-3 (Registration No. 333-228323) (the "Shelf Registration Statement"), first filed with the Securities and Exchange Commission (the "Commission"), pursuant to the Securities Act of 1933, as amended (the 'Securities Act"), on November 9, 2018;

(ii) the preliminary prospectus supplement, dated October [•], 2019, including the accompanying base prospectus, dated November 9, 2018 (the "Base Prospectus"), which was filed with the Commission, pursuant to Rule 424(b)(5) promulgated under the Securities Act, on October [•], 2019 (the "Preliminary Prospectus Supplement");

(iii) the "Time of Sale Prospectus" as of [•] p.m., on October [•], 2019 (which, for purposes of this letter, includes only the Preliminary Prospectus Supplement);

(iv) the final prospectus supplement, dated October [•], 2019, including the accompanying Base Prospectus, which was filed with the Commission, pursuant to Rule 424(b)(5) promulgated under the Securities Act, on October [•], 2019 (the "Prospectus");

(v) the Underwriting Agreement;

(vi) the Amended and Restated Certificate of Incorporation of the Company, as certified by the Secretary of the State of the State of Delaware and attached hereto as Exhibit A (the "Certificate of Incorporation");

(vii) the Amended and Restated By-laws of the Company, as in effect on the date hereof, as certified by the Secretary of the Company (the "By-Laws");

(viii) copies certified by the Secretary of the Company of certain resolutions adopted by each of the board of directors and the stockholders of the Company;

(ix) the certificates of public officials attached hereto as Exhibit B; and

(x) the certificate of the Company, attached hereto as Exhibit C (the "Company Certificate").

As used herein, the term "Registration Statement" means the Shelf Registration Statement, as of its most recent effective date, including the information deemed at such time to be included in the part of the Shelf Registration Statement relating to the Shares pursuant to Rule 430B(f)(2) under the Securities Act. References to the Preliminary Prospectus Supplement and the Prospectus shall be deemed to include the documents incorporated by reference therein.

As to all matters of fact (including factual matters underlying our opinions contained herein, and factual conclusions and characterizations and descriptions of purpose, intention or other state of mind), we have relied, with your permission, entirely upon (i) the representations and warranties of the Company set forth in the Underwriting Agreement and (ii) representations made to us by officers of the Company and certificates delivered contemporaneously to us by officers of the Company, including the Company Certificate, and have assumed, without independent inquiry, check or verification, the accuracy of all of such representations, assertions and statements and of such certificates.

We have assumed the genuineness of all signatures, the conformity to the originals of all documents reviewed by us as copies, the authenticity and completeness of all original documents reviewed by us in original or copy form and the legal capacity and competence of each individual executing any document.

When an opinion or statement set forth below is given to the best of our knowledge, or to our knowledge, or with reference to matters of which we are aware or which are known to us, or with another similar qualification, the relevant knowledge or awareness is limited to the actual knowledge or awareness of the individual lawyers in the firm who participated directly in the specific transactions to which this opinion relates, and who charged time to matters for the Company in the period commencing November 24, 2014 (on which date certain of the lawyers, formerly with Bingham McCutchen LLP, joined this firm).

For purposes of our opinions rendered in paragraph 1 below, with respect to the incorporation, existence, qualification, and standing of the Company, our opinions rely entirely upon and are limited by those certificates of public officials attached hereto as Exhibit B, and each such opinion shall be solely as of the date of the relevant certificate.

For purposes of our opinion set forth in paragraph 3 below with respect to the issued and outstanding Common Stock, we have relied solely upon our review of the stock records and minutes of the meetings and actions of the board of directors and stockholders of the Company as certified to us by an officer of the Company.

In rendering the opinion in paragraph 6 below, we express no opinion as to noncontravention of financial covenants or other provisions requiring financial calculations or determinations.

Subject to the limitations set forth below, for purposes of this opinion, we have made such examination of law as we have deemed necessary. This opinion is limited solely to the federal laws of the United States of America (except for federal tax, antitrust, national security, anti-money laundering, utilities and securities laws, as to which we express no opinion in this letter, except to the limited extent set forth in paragraph 9 below as to federal income and estate tax laws and paragraphs 10, 11, 12 and 13 below as to securities laws), the Delaware General Corporation Law (the "DGCL") and, with respect to paragraph 6, the laws (except securities or Blue Sky laws) of the Commonwealth of Massachusetts and the State of New York, and we express no opinion as to the laws of any other jurisdiction. We have not conducted any

special review of statutes, rules or regulations for purposes of this opinion, and our opinions are limited to such laws, rules and regulations as in our experience are normally applicable to transactions of the type contemplated by the Underwriting Agreement.

Our opinion in paragraph 9 below relating to the statements in the Prospectus under the caption "Material United States Federal Income and Estate Tax Consequences to Non-U.S. Holders of our Common Stock" is limited solely to the federal income and estate tax laws of the United States, does not cover matters arising under the laws of any other jurisdiction, and is based on our analysis of the current provisions of the Internal Revenue Code of 1986, as amended, existing case law, existing Treasury Regulations and existing published revenue rulings and procedures of the Internal Revenue Service that are in effect as of the date hereof, all of which are subject to change and new interpretation, both prospectively and retroactively. Any such changes or new interpretations, as well as changes in the facts as they are reflected in the Prospectus, could affect our analysis and conclusions and we assume no obligation to update our opinion to reflect any facts or circumstances that hereafter may come to our attention or any changes in the law that hereafter may occur.

We understand that all of the foregoing assumptions, limitations and qualifications are acceptable to you.

Based upon and subject to the foregoing, we are of the opinion that:

1. The Company is a corporation validly existing and in good standing under the laws of the State of Delaware. The Company is qualified to do business as a foreign corporation in the Commonwealth of Massachusetts. The Company has the corporate power and authority to carry on its business and to own, lease and operate its properties, as such business and properties are described in the Registration Statement and the Prospectus.

2. The Company has the corporate power to enter into the Underwriting Agreement and to perform its obligations thereunder.

3. The shares of capital stock issued and outstanding prior to the issuance of the Shares have been duly authorized and are validly issued, fully paid and nonassessable.

4. All of the Shares have been duly authorized, and when issued, delivered and paid for in accordance with the terms of the Underwriting Agreement will be validly issued, fully paid and nonassessable, and such Shares, when issued and delivered in accordance with the Underwriting Agreement, will be free of preemptive rights that exist under the DGCL, the Certificate of Incorporation, the By-Laws or any document filed as an exhibit to the Registration Statement.

5. The Underwriting Agreement has been duly authorized by all necessary corporate action on behalf of the Company, and has been duly executed and delivered on behalf of the Company.

6. The execution and delivery by the Company of the Underwriting Agreement and the performance by the Company of its obligations thereunder will not (a) violate (i) any law, rule or regulation of the Commonwealth of Massachusetts, the State of New York, or any federal law of the United States of America that in our experience is normally applicable to general business corporations in relation to transactions of the type contemplated by the Underwriting Agreement or the DGCL, provided that we express no opinion as to federal or state securities laws, or (ii) any existing provision of the Certificate of Incorporation or By-Laws or (b) result

in a breach of, or constitute a default under, any of the documents filed as an exhibit to the Registration Statement.

7. No consent, approval, authorization or order of, or filing with, any court or governmental agency or body is required for the performance by the Company of its obligations under the Underwriting Agreement, except such as may be required under the Securities Act or state securities laws and any consents, approvals, authorizations, orders or filings as may be required under the rules and regulations of The Nasdaq Stock Market LLC or the Financial Industry Regulatory Authority, Inc.

8. The statements in each of the Registration Statement and the Prospectus under the caption "Description of Capital Stock" (including the number of shares of authorized capital stock), insofar as such statements constitute summaries of the legal matters or documents referred to therein, in each case fairly summarize in all material respects such legal matters or documents.

9. The statements included in the Prospectus under the caption "Material United States Federal Income and Estate Tax Consequences to Non-U.S. Holders of our Common Stock", insofar as such statements constitute summaries of matters of United States federal income and estate tax law, are accurate in all material respects.

10. The Registration Statement has become effective under the Securities Act and, to our knowledge, no stop order suspending its effectiveness has been issued by the Commission nor, to our knowledge, is a proceeding for that purpose pending before or contemplated by the Commission. The Preliminary Prospectus has been filed in accordance with Rule 424(b) under the Securities Act. Any required filing of the Prospectus pursuant to Rule 424 under the Securities Act has been made in the manner and within the time period required by such Rule 424.

11. The Company is not, and after giving effect to the offering and sale of the Shares and the application of the proceeds thereof as described in the Prospectus will not be, required to register as an investment company under the Investment Company Act of 1940, as amended.

12. We are not aware of any action, proceeding or litigation pending or threatened against the Company before any court or governmental or administrative agency or body that is required by the Securities Act and the applicable rules and regulations of the Commission thereunder to be described in the Registration Statement or the Prospectus that is not so described.

13. Except as described in the Registration Statement and the Prospectus, no contract or agreement that has been filed as an exhibit to the Registration Statement grants any person a right to require the Company to register pursuant to the Registration Statement any securities other than the Shares, except for any such right as has been waived.

This opinion speaks as of the date hereof and we assume no obligation to update this opinion or inform you in the future of any facts or circumstances that occur after the date hereof and that may affect our opinion in any way.

This opinion has been delivered solely for your use in connection with the transactions contemplated by the Underwriting Agreement and may not be referred to or used for any other purpose, or relied upon by any person other than the Underwriters, without our prior written consent.

EXHIBIT A-2

FORM OF OPINION OF SPECIAL REGULATORY COUNSEL

This letter is furnished to you pursuant to Section 5(d) of the Underwriting Agreement dated October [ ], 2019 (the "Underwriting Agreement") between you, as underwriters (the "Underwriters"), and Rhythm Pharmaceuticals, Inc., a Delaware Corporation (the "Company"), relating to the issuance and sale by the Company of [ ] shares of common stock, par value $0.001 per share of the Company (the "Shares") pursuant to the terms of the Underwriting Agreement.

Hogan Lovells US LLP ("we" or the "firm") has acted in the limited role of regulatory counsel to the Company only on U.S. Food and Drug Administration ("FDA"), healthcare fraud and abuse, and certain Medicare, Medicaid and third party reimbursement matters (collectively the "FDA and Healthcare Regulatory Matters"). In such capacity, we have reviewed certain information relating to the FDA and Healthcare Regulatory Matters under the captions listed on Schedule A hereto (the "Regulatory Captions") in the Company's base Prospectus dated November 9, 2018 (the "Prospectus") and the Company's preliminary Prospectus Supplement dated [•], 2019 and final Prospectus Supplement dated [•], 2019 (collectively with the preliminary Prospectus Supplement, the "Prospectus Supplements"), forming a part of the Company's Registration Statement on Form S-3, as amended (the "Registration Statement"), or incorporated by reference therein from the Form 10-K or Form 10-Q as defined on Schedule A. We have not been retained or engaged by the Company to perform, nor have we performed, any review of any other information in the Registration Statement, the Prospectus, or the Prospectus Supplements, or incorporated therein from the Form 10-K or Form 10-Q. Additionally, we have not been retained or engaged to provide advice with respect to United States securities laws or the rules or regulations of the Securities and Exchange Commission (the "Commission") thereunder (the "Rules"), nor have we been retained or engaged by the Company to provide advice as to whether any information or any statement, opinion or other writing is required under the United States securities laws or the Rules to be filed with or submitted to, or incorporated into any document that will be filed with or submitted to, the Commission, and the matters addressed herein should not be construed as such advice. Capitalized terms not otherwise defined herein shall have the meanings set forth in the Underwriting Agreement.

For purposes of our opinion, we have examined copies of the following (the "Documents"):

1. An executed copy of the Underwriting Agreement.

2. The information regarding FDA and Healthcare Regulatory Matters contained in the Prospectus, and the Prospectus Supplements, or incorporated by reference therein from the Form 10-K or Form 10-Q, under the Regulatory Captions.

3. A certificate of certain officers of the Company dated the date hereof as to certain facts relating to the Company.

In our examination of the Underwriting Agreement and the other Documents, we have assumed the genuineness of all signatures, the legal capacity of all natural persons, the accuracy and completeness of all of the Documents, the authenticity of all originals of the Documents and the conformity to authentic originals of all of the Documents submitted to us as copies (including telecopies). Further, for purposes of

our opinion, we have not independently verified nor do we take any responsibility for nor are we addressing in any way any statements of fact; any statements concerning state or foreign law; any legal conclusions or any statements of belief attributable to the Company; any statement regarding or referring to clinical or pre-clinical studies, the data relating thereto, or the results thereof; or whether or not the Company is in compliance with applicable FDA requirements. Our opinion is given in the context of the foregoing.

This letter is based, as to matters of law, solely on the described portions of (i) the Federal Food, Drug, and Cosmetic Act, as amended (the "FDCA"), and the regulations promulgated thereunder, (ii) the Medicare and Medicaid reimbursement, and anti-kickback provisions of the Social Security Act, as amended (the "Social Security Act Provisions"), and the regulations promulgated thereunder, (iii) the Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Health Act, (iv) the federal Civil False Claims Act (the "False Claims Act"), (v) the Clinical Laboratory Improvement Amendments of 1988 (42 U.S.C. § 263a *et seq.*), and (vii) the Affordable Care Act (collectively, the "Covered Laws").

Based upon, subject to and limited by the assumptions, qualifications, exceptions, and limitations set forth in this opinion letter, we are of the opinion that the statements under the Regulatory Captions listed in Schedule A, insofar as such statements purport to describe applicable provisions of the Covered Laws, are accurate descriptions in all material respects of the provisions purported to be described under such Regulatory Captions.

Nothing herein shall be construed to cause us to be considered "experts" within the meaning of Section 11 of the Securities Act of 1933, as amended.

We express no opinion in this letter as to any other statutes, rules and regulations not specifically identified above as being covered hereby (and in particular, we express no opinion as to any effect that such other statutes, rules and regulations may have on the opinions expressed herein). We express no opinion in this letter as to federal or state securities, antitrust, unfair competition, banking, or tax statutes, rules or regulations, or statutes, rules or regulations of any political subdivision below the state level.

We assume no obligation to advise you of any changes in the foregoing subsequent to the delivery of this letter. This letter has been prepared solely for your use in connection with the Closing under the Underwriting Agreement on the date hereof, and it should not be quoted in whole or in part or otherwise be referred to, and should not be filed with or furnished to any governmental agency or other person or entity, without the prior written consent of this firm. In no event may this letter or any other communication or document referring to the contents hereof or any other advice we have given to the Company be submitted to or filed with the Commission without our prior written consent.

This letter is furnished to you pursuant to Section 5(d) of the Underwriting Agreement dated October [ ], 2019 (the "Underwriting Agreement") between you, as underwriters (the "Underwriters"), and Rhythm Pharmaceuticals, Inc., a Delaware Corporation (the "Company"), relating to the issuance and sale by the Company of shares of common stock, par value $ [***] per share of the Company (the "Shares") pursuant to the terms of the Underwriting Agreement.

Hogan Lovells International LLP ("we" or the "firm") has acted in the limited role of regulatory counsel to the Company only with respect to the regulation of medicinal products and *in vitro* diagnostic medical devices in the European Union (the "European Union Regulatory Matters"). In such capacity, we have reviewed certain information (the "European Union Regulatory Statements") under the captions listed on Schedule A hereto (the "Regulatory Captions") in the Company's base Prospectus dated November 9, 2018 (the "Prospectus") and in the Company's preliminary Prospectus Supplement dated [DATE] and final Prospectus Supplement dated [DATE] (collectively with the preliminary Prospectus Supplement, the "Prospectus Supplements"), forming a part of the Company's Registration Statement on Form S-3, as amended (the "Registration Statement"), or incorporated by reference therein from the Form 10-K or Form 10-Qs (as defined on Schedule A). We have not been retained or engaged by the Company to perform, nor have we performed, any review of any other information in the Registration Statement, the Prospectus, or the Prospectus Supplements, or incorporated therein from the Form 10-K or Form 10-Qs.

For purposes of our opinion, we have examined copies of the following (the "Documents"):

1. An executed copy of the Underwriting Agreement.

2. The information regarding European Union Regulatory Matters contained in the Prospectus and the Prospectus Supplements, or incorporated by reference therein from the Form 10-K or Form 10-Qs, under the Regulatory Captions.

3. A certificate of certain officers of the Company dated the date hereof as to certain facts relating to the Company.

In our examination of the Underwriting Agreement and the other Documents, we have assumed the genuineness of all signatures, the legal capacity of all natural persons, the accuracy and completeness of all of the Documents, the authenticity of all originals of the Documents and the conformity to authentic originals of all of the Documents submitted to us as copies (including telecopies). Further, for purposes of our opinion, we have not independently verified nor do we take any responsibility for nor are we addressing in any way any statements of fact; any statements concerning state or foreign law; any legal conclusions or any statements of belief attributable to the Company; any statement regarding or referring to clinical or pre-clinical studies, the data relating thereto, or the results thereof; or whether or not the Company is in compliance with applicable requirements concerning the regulation of medicinal products and *in vitro* diagnostic medical devices in the European Union. Our opinion is given in the context of the foregoing.

This letter is based, as to matters of law, solely on Directive 2001/83/EC of the European Parliament and of the Council of 6 November 2001 on the Community code relating to medicinal products for human use, Regulation 726/2004/EC of the European Parliament and of the Council of 31 March 2004 laying down Community procedures for the authorisation and supervision of medicinal products for human and veterinary use and establishing a European Medicines Agency, Directive 2001/20/EC of the European

Parliament and of the Council of 4 April 2001 on the approximation of the laws, regulations and administrative provisions of the Member States relating to the implementation of good clinical practice in the conduct of clinical trials on medicinal products for human use, Commission Directive 2005/28/EC of 8 April 2005 laying down principles and detailed guidelines for good clinical practice as regards investigational medicinal products for human use, as well as the requirements for authorisation of the manufacturing or importation of such products, Commission Directive 2003/94/EC of 8 October 2003 laying down the principles and guidelines of good manufacturing practice in respect of medicinal products for human use and investigational medicinal products for human use, Regulation 536/2014/EU of the European Parliament and of the Council of 16 April 2014 on clinical trials on medicinal products for human use, and repealing Directive 2001/20/EC, Regulation No 141/2000/EC of the European Parliament and of the Council of 16 December 1999 on orphan medicinal products, Regulation 1901/2006/EC of the European Parliament and of the Council of 12 December 2006 on medicinal products for paediatric use and amending Regulation (EEC) No 1768/92, Directive 98/79/EC of the European Parliament and of the Council of 27 October 1998 on in vitro diagnostic medical devices, Directive 2011/24/EU of the European Parliament and of the Council of 9 March 2011 on the application of patients' rights in cross-border healthcare and Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (collectively, the "Covered Laws").

Based upon, subject to and limited by the assumptions, qualifications, exceptions, and limitations set forth in this opinion letter, we are of the opinion that the statements under the Regulatory Captions in the Prospectus, and in the Prospectus Supplements, or incorporated therein from the Form 10-K or Form 10-Qs, insofar as such statements purport to describe applicable provisions of the Covered Laws, are accurate descriptions in all material respects of the provisions purported to be described under such Regulatory Captions in the Prospectus, and the Prospectus Supplements, or incorporated by reference therein from the Form 10-K or Form 10-Qs.

Nothing herein shall be construed to cause us to be considered "experts" within the meaning of Section 11 of the Securities Act of 1933, as amended, or any equivalent laws of individual European Union Member States.

We express no opinion in this letter as to any other statutes, rules and regulations not specifically identified above as being covered hereby (and in particular, we express no opinion as to any effect that such other statutes, rules and regulations may have on the opinions expressed herein). We express no opinion in this letter as to national securities, antitrust, unfair competition, banking, or tax statutes, rules or regulations, or statutes, rules or regulations of any political subdivision below the national level of individual European Union Member States.

We assume no obligation to advise you of any changes in the foregoing subsequent to the delivery of this letter. This letter has been prepared solely for your use in connection with the Closing under the Underwriting Agreement on the date hereof, and it should not be quoted in whole or in part or otherwise be referred to, and should not be filed with or furnished to any governmental agency or other person or entity, without the prior written consent of this firm. In no event may this letter or any other communication or document referring to the contents hereof or any other advice we have given to the Company be submitted to or filed with the Commission without our prior written consent.

EXHIBIT A-3

FORM OF OPINION OF SPECIAL INTELLECTUAL PROPERTY COUNSEL

We are furnishing this opinion letter to you pursuant to Section 5(f) of the Underwriting Agreement dated as of October 16, 2019 (the "Underwriting Agreement"), between Rhythm Pharmaceuticals, Inc., a corporation organized under the laws of Delaware (the "Company") and Morgan Stanley & Co. LLC, Goldman Sachs & Co., LLC, and Cowen and Company, LLC, as representatives of the several underwriters named in Schedule I therein, in connection with the offering of $125,000,000 shares (the "Shares") of the Company's common stock, $0.001 par value per share (the "Common Stock"), pursuant to the Underwriting Agreement. Capitalized terms used but not defined herein shall have the respective meanings ascribed to them in the Underwriting Agreement.

This law firm has served as intellectual property counsel and has rendered general intellectual property advice to the Company under United States law with respect to U.S. patents and U.S. patent applications owned by or licensed to the Company. Our representation is limited to matters individually referred to us by the Company and there are matters involving or impacting the Company of which we are unaware. Our opinions set forth below, except where indicated otherwise, are limited only to those matters where we have been engaged by the Company to represent or advise it; and we have devoted substantive attention to such matters in the form of legal representation or consultation. Accordingly, the opinions contained herein are limited in their entirety to the specific scope of our engagement.

In giving this opinion letter we have relied on the following assumptions:

1. All copies of documents, and all records and letters examined by us, are accurate, true, complete and correct copies of the originals thereof (the "Documents").

2. Each of the individuals executing the Documents has requisite legal capacity and all the signatures on the Documents are genuine.

3. The execution and delivery of each and all of the Documents are free from any form of fraud, misrepresentation, mistake of fact, duress, or criminal activity, none of which has occurred to our knowledge.

We have made no investigation of the facts or law underlying the foregoing assumptions, and you have not requested us to do so, but we wish to advise you that nothing has come to our attention which would provide us with actual knowledge that we are not justified in making such assumptions.

Whenever our opinions herein are qualified by the phrase, "to the best of our knowledge," "known to us," "come to our attention," "caused us to believe that," or a similar phrase, except as may be further qualified below, such language means that the opinions are based solely upon (1) the conscious awareness of facts or other information, at the time of delivery of this opinion letter, by the attorneys within our firm, who have had direct involvement in the intellectual property representation of the Company (excluding matters as to which such attorneys could be deemed to have constructive knowledge and excluding knowledge of attorneys or patent agents outside of this firm who, at any time, may have had responsibility

for the Company matters), and (2) all records pertaining to the Company's intellectual property in the possession of this law firm as of the date hereof. Except to the extent expressly set forth herein, we have not undertaken any independent investigation to determine the existence or absence of any facts or other information, and no inference as to our knowledge or the existence or absence of any such facts or other information should be drawn from the fact of our representation of the Company as intellectual property counsel. We have not searched any computer databases or the dockets of any court, administrative body, agency or other filing office in any jurisdiction or made any other independent investigation.

We have read the Prospectus to the extent that it refers to intellectual property matters. For purposes of our opinions, we have reviewed this document and made such other investigations as we have deemed appropriate. As to matters of fact, we have relied on the representations and warranties relating to intellectual property made by the Company in the Underwriting Agreement and on certificates of public officials and officers of the Company and we have reviewed our records. We have made no independent investigation of the accuracy or completeness of such matters of fact.

Based upon and subject to, the foregoing, and subject to the limitations, qualifications, exclusions, and exceptions set forth herein, we express the following opinions:

1. The statements contained in the Prospectus and Underwriting Agreement (the "Covered Intellectual Property Disclosure") insofar as they describe the Company Patents or purport to constitute summaries of the terms of statutes, rules or regulations or legal and governmental proceedings, constitute an accurate description of the Company Patents or accurate summaries of the terms of such statutes, rules and regulations, legal and governmental proceedings, in each case, and in all material respects.

2. To our knowledge, there are no currently asserted or unasserted claims of any persons disputing the inventorship or ownership of any of the patents and patent applications that are described in the attached Schedule of Company Patents (the "Company Patents"). There are no liens which have been filed against any of the Company Patents owned by the Company except as disclosed in the Disclosure Package and the Prospectus. To our knowledge, there are no liens which have been filed against any of the Company Patents except as disclosed in the Prospectus.

3. To our knowledge, (i) the Company is the exclusive licensee or exclusive owner of all right, title and interest in the Company Patents, except as disclosed in the Covered Intellectual Property Disclosure; (ii) there are no material defects in the preparation or filing of the Company Patents; (iii) the assignments that have been obtained with respect to the Company Patents are valid and have been recorded in the U.S. Patent and Trademark Office ("USPTO"); (iv) assignments not yet filed are being properly prepared and will be properly recorded; and (v) the patent applications within the Company Patents are pending and being prosecuted so as to avoid abandonment thereof.

4. To our knowledge, except as disclosed in the Covered Intellectual Property Disclosure, no actions, suits, claims or proceedings have been asserted or threatened in writing against the Company alleging that the operation of the Company's business conflicts with or infringes the patent rights of any third party, nor are we aware of any facts that lead us to believe that any such actions, suits, claims, or proceedings are imminent or likely.

5. To our knowledge, no court has issued any order, judgment, decree or injunction restricting the operation of the Company's business on the basis of a conflict with or infringement of the patent rights of any third party.

6. To our knowledge, except as disclosed in the Covered Intellectual Property Disclosure, we are not aware of any third party patents that would be infringed by the Company's manufacture, use or sale of products described in the Prospectus.

7. We are not aware of any facts that lead us to believe that any U.S. patents in the Company Patents were not prosecuted, or any U.S. patent applications in the Company Patents are not being prosecuted, in compliance with the duty of disclosure under 37 C.F.R. §1.56.

8. We have complied and are continuing to comply, on an ongoing basis, with the required duty of candor and good faith in dealing with the USPTO, including the duty to disclose to the USPTO all information actually known by us to be material to the patentability of each Company Patent.

Nothing has come to our attention which causes us to believe that the Covered Intellectual Property Disclosure included in the Registration Statement, the Underwriting Agreement, and the Prospectus, insofar as they contain statements pertaining to U.S. federal intellectual property laws, at the time the Registration Statement became effective and at all times subsequent thereto up to (including, without limitation, as of the Execution Time) and on the Date of Delivery, contained any untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading.

Our opinion on each legal issue addressed herein represents our opinion concerning how that issue would be resolved by a court of competent jurisdiction provided the issue is properly presented to the court. The manner in which any particular issue would be treated in any actual court case would depend in part on facts and circumstances peculiar to the case, and our opinions are not a guaranty of an outcome of any legal dispute that may arise.

This letter speaks as of the date hereof. We disclaim any obligation to provide you with any subsequent opinion or advice by reason of any future changes or events that may affect or alter any opinion rendered herein.

This opinion has been provided solely for the benefit of Morgan Stanley & Co., LLC; Goldman Sachs & Co., LLC; and Cowen and Company, LLC, and no other person or entity shall be entitled to rely hereon without the express written consent of Kendall Square IP Strategies, LLC. As such, this opinion shall not be quoted from in whole or in part, used, published or otherwise referred to or relied upon in any manner, including, without limitation, in any financial statement or other document, nor filed with or furnished to any government agency unless required by law, without the prior written consent of the undersigned.

EXHIBIT A-4

FORM OF OPINION OF SPECIAL INTELLECTUAL PROPERTY COUNSEL

We are furnishing this opinion letter to you pursuant to Section 5(f) of the Underwriting Agreement dated as of October 16, 2019 (the "Underwriting Agreement"), between Rhythm Pharmaceuticals, Inc., a corporation organized under the laws of Delaware (the "Company") and Morgan Stanley & Co. LLC, Goldman Sachs & Co., LLC, and Cowen and Company LLC, as representatives of the several underwriters named in Schedule I therein, in connection with the offering of $125,000,000 shares (the "Shares") of the Company's common stock, $0.001 par value per share (the "Common Stock"), pursuant to the Underwriting Agreement. Capitalized terms used but not defined herein shall have the respective meanings ascribed to them in the Underwriting Agreement.

This law firm has served as intellectual property counsel and has rendered general intellectual property advice to the Company under United States law with respect to U.S. patents and U.S. patent applications owned by or licensed to the Company. Our representation is limited to matters individually referred to us by the Company and there are matters involving or impacting the Company of which we are unaware. Our opinions set forth below, except where indicated otherwise, are limited only to those matters where we have been engaged by the Company to represent or advise it; and we have devoted substantive attention to such matters in the form of legal representation or consultation. Accordingly, the opinions contained herein are limited in their entirety to the specific scope of our engagement.

In giving this opinion letter we have relied on the following assumptions:

1. All copies of documents, and all records and letters examined by us, are accurate, true, complete and correct copies of the originals thereof (the "Documents").

2. Each of the individuals executing the Documents has requisite legal capacity and all the signatures on the Documents are genuine.

3. The execution and delivery of each and all of the Documents are free from any form of fraud, misrepresentation, mistake of fact, duress, or criminal activity, none of which has occurred to our knowledge.

We have made no investigation of the facts or law underlying the foregoing assumptions, and you have not requested us to do so, but we wish to advise you that nothing has come to our attention which would provide us with actual knowledge that we are not justified in making such assumptions.

Whenever our opinions herein are qualified by the phrase, "to the best of our knowledge," "known to us," "come to our attention," "caused us to believe that," or a similar phrase, except as may be further qualified below, such language means that the opinions are based solely upon (1) the conscious awareness of facts or other information, at the time of delivery of this opinion letter, by the attorneys within our firm, who have had direct involvement in the intellectual property representation of the Company (excluding matters as to which such attorneys could be deemed to have constructive knowledge and excluding knowledge of attorneys or patent agents outside of this firm who, at any time, may have had responsibility

for the Company matters), and (2) all records pertaining to the Company's intellectual property in the possession of this law firm as of the date hereof. Except to the extent expressly set forth herein, we have not undertaken any independent investigation to determine the existence or absence of any facts or other information, and no inference as to our knowledge or the existence or absence of any such facts or other information should be drawn from the fact of our representation of the Company as intellectual property counsel. We have not searched any computer databases or the dockets of any court, administrative body, agency or other filing office in any jurisdiction or made any other independent investigation.

We have read the Prospectus to the extent that it refers to intellectual property matters. For purposes of our opinions, we have reviewed this document and made such other investigations as we have deemed appropriate. As to matters of fact, we have relied on the representations and warranties relating to intellectual property made by the Company in the Underwriting Agreement and on certificates of public officials and officers of the Company and we have reviewed our records. We have made no independent investigation of the accuracy or completeness of such matters of fact.

Based upon and subject to, the foregoing, and subject to the limitations, qualifications, exclusions, and exceptions set forth herein, we express the following opinions:

1. The statements contained in the Prospectus and Underwriting Agreement (the "Covered Intellectual Property Disclosure") insofar as they describe the Company Patents or purport to constitute summaries of the terms of statutes, rules or regulations or legal and governmental proceedings, constitute an accurate description of the Company Patents or accurate summaries of the terms of such statutes, rules and regulations, legal and governmental proceedings, in each case, and in all material respects.

2. To our knowledge, there are no currently asserted or unasserted claims of any persons disputing the inventorship or ownership of any of the patents and patent applications that are described in the attached Schedule of Company Patents (the "Company Patents"). There are no liens which have been filed against any of the Company Patents owned by the Company except as disclosed in the Prospectus. To our knowledge, there are no liens which have been filed against any of the Company Patents except as disclosed in the Prospectus.

3. To our knowledge, (i) the Company is the exclusive licensee or exclusive owner of all right, title and interest in the Company Patents, except as disclosed in the Covered Intellectual Property Disclosure; (ii) there are no material defects in the preparation or filing of the Company Patents; (iii) the assignments that have been obtained with respect to the Company Patents are valid and have been recorded in the U.S. Patent and Trademark Office ("USPTO"); (iv) assignments not yet filed are being properly prepared and will be properly recorded; and (v) the patent applications within the Company Patents are pending and being prosecuted so as to avoid abandonment thereof.

4. To our knowledge, except as disclosed in the Covered Intellectual Property Disclosure, no actions, suits, claims or proceedings have been asserted or

threatened in writing against the Company alleging that the operation of the Company's business conflicts with or infringes the patent rights of any third party, nor are we aware of any facts that lead us to believe that any such actions, suits, claims, or proceedings are imminent or likely.

5. To our knowledge, no court has issued any order, judgment, decree or injunction restricting the operation of the Company's business on the basis of a conflict with or infringement of the patent rights of any third party.

6. To our knowledge, except as disclosed in the Covered Intellectual Property Disclosure, we are not aware of any third party patents that would be infringed by the Company's manufacture, use or sale of products described in the Prospectus.

7. We are not aware of any facts that lead us to believe that any U.S. patents in the Company Patents were not prosecuted, or any U.S. patent applications in the Company Patents are not being prosecuted, in compliance with the duty of disclosure under 37 C.F.R. §1.56.

8. We have complied and are continuing to comply, on an ongoing basis, with the required duty of candor and good faith in dealing with the USPTO, including the duty to disclose to the USPTO all information actually known by us to be material to the patentability of each Company Patent.

Nothing has come to our attention which causes us to believe that the Covered Intellectual Property Disclosure included in the Registration Statement, the Underwriting Agreement, and the Prospectus, insofar as they contain statements pertaining to U.S. federal intellectual property laws, at the time the Registration Statement became effective and at all times subsequent thereto up to (including, without limitation, as of the Execution Time) and on the Date of Delivery, contained any untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading.

Our opinion on each legal issue addressed herein represents our opinion concerning how that issue would be resolved by a court of competent jurisdiction provided the issue is properly presented to the court. The manner in which any particular issue would be treated in any actual court case would depend in part on facts and circumstances peculiar to the case, and our opinions are not a guaranty of an outcome of any legal dispute that may arise.

This letter speaks as of the date hereof. We disclaim any obligation to provide you with any subsequent opinion or advice by reason of any future changes or events that may affect or alter any opinion rendered herein.

This opinion has been provided solely for the benefit of Morgan Stanley & Co., LLC; Goldman Sachs & Co., LLC; and Cowen and Company, LLC, and no other person or entity shall be entitled to rely hereon without the express written consent of Lando & Anastasi LLP. As such, this opinion shall not be quoted from in whole or in part, used, published or otherwise referred to or relied upon in any manner, including, without limitation, in any financial statement or other document, nor filed with or furnished to any government agency unless required by law, without the prior written consent of the undersigned.

EXHIBIT B

FORM OF LOCK-UP LETTER

This letter is being delivered to you in connection with the proposed Underwriting Agreement (the "Underwriting Agreement"), between Rhythm Pharmaceuticals, Inc., a Delaware corporation, including any predecessor or successor company, as the case may be (the "Company"), and each of you as representatives of a group of Underwriters named therein (the "Underwriters"), relating to an underwritten public offering of shares of common stock ("Common Stock"), of the Company (the "Offering").

In order to induce you and the other Underwriters to enter into the Underwriting Agreement, the undersigned will not, without the prior written consent of the Representatives, offer, sell, contract to sell, pledge or otherwise dispose of, (or enter into any transaction which is designed to, or might reasonably be expected to, result in the disposition (whether by actual disposition or effective economic disposition due to cash settlement or otherwise) by the undersigned or any affiliate of the undersigned or any person in privity with the undersigned or any affiliate of the undersigned), directly or indirectly, including the filing (or participation in the filing) of a registration statement (other than a registration statement on Form S-8) with the Securities and Exchange Commission (the "SEC") in respect of, or establish or increase a put equivalent position or liquidate or decrease a call equivalent position within the meaning of Section 16 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and the rules and regulations of the SEC promulgated thereunder with respect to, any capital stock of the Company or any securities convertible into, or exercisable or exchangeable for such capital stock, or publicly announce an intention to effect any such transaction, for a period from the date hereof until 90 days after the date of the Underwriting Agreement (the "Lock-up Period"). If the undersigned is an officer or director of the Company, the undersigned further agrees that the foregoing restrictions shall be equally applicable to any issuer-directed shares of Common Stock the undersigned may purchase in the Offering.

The provisions of the immediately preceding paragraph shall not apply to (i) the sale of shares of Common Stock by the undersigned to the Underwriters pursuant to the Underwriting Agreement, (ii) transfers of shares of capital stock of the Company or any securities convertible into, or exercisable or exchangeable for such capital stock as a bona fide gift or gifts, (iii) transfers or dispositions of shares of capital stock of the Company or any securities convertible into, or exercisable or exchangeable for such capital stock to any trust for the direct or indirect benefit of the undersigned or the immediate family of the undersigned in transactions not involving a disposition for value; (iv) transfers or dispositions of shares of capital stock of the Company or any securities convertible into, or exercisable or exchangeable for such capital stock to any corporation, partnership, limited liability company or other entity all of the beneficial ownership interests of which are held by the undersigned or the immediate family of the undersigned in a transaction not involving a disposition for value; (v) transfers or dispositions of shares of capital stock of the Company or any securities convertible into, or exercisable or exchangeable for such capital stock by will, other testamentary document or intestate succession to the legal representative, heir, beneficiary or a member of the immediate family of the undersigned; or (vi) distributions of shares of capital stock of the Company or any securities convertible into, or exercisable or exchangeable for such capital stock to partners, members or stockholders of the undersigned; *provided*, that in the case of any transfer, disposition or distribution pursuant to clause (ii), (iii), (iv), (v) or (vi), each transferee, donee or distributee shall execute and deliver to the Representatives a lock-up letter in the form of this letter; *and provided further*, that in the case of any transfer, disposition or distribution pursuant to clause (ii), (iii), (iv) or (vi), 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 of Common Stock held by the

undersigned shall be required or shall be made voluntarily in connection with such transfer, disposition or distribution (other than a filing on a Form 5 made after the expiration of the 90-day period referred to in the immediately preceding paragraph). For purposes of this letter, "immediate family" shall mean any relationship by blood, marriage, domestic partnership, or adoption, not more remote than first cousin. Furthermore, notwithstanding the restrictions imposed by this letter, the undersigned may, without the prior written consent of the Representatives, (a) exercise an option to purchase shares of Common Stock granted under any equity incentive plan or equity purchase plan of the Company which is described in the registration statement relating to the Offering, *provided* that the underlying equity securities shall continue to be subject to the restrictions on transfer set forth in this letter, (b) establish a trading plan pursuant to Rule 10b5-1 under the Exchange Act for the transfer of shares of Common Stock, *provided* that such plan does not provide for any transfers of Common Stock, and no filing with the SEC or other public announcement shall be required or voluntarily made by the undersigned or any other person in connection therewith, in each case during the 90-day period referred to in the immediately preceding paragraph, (c) transfer shares of Common Stock to the Company in connection with the termination of the undersigned's employment with the Company, and (d) transfer or dispose of shares of Common Stock purchased in the Offering from the Underwriters (other than any issuer-directed shares of Common Stock purchased in the Offering by an officer or director of the Company) or on the open market following the Offering; *provided* that, in the case of clauses (b), (c) and (d) above, no filing with the SEC or other public announcement shall be required or voluntarily made by the undersigned or any other person in connection therewith, in each case during the 90-day period referred to in the immediately preceding paragraph, other than in the case of clause (c) to the extent such filing is required and the employment termination is footnoted or otherwise disclosed therein.

This letter shall automatically terminate and the undersigned shall be released from all obligations under this letter upon the earliest to occur, if any, of (i) either the Company, on the one hand, or the Representatives, on the other hand, advising the other in writing, prior to the execution of the Underwriting Agreement, that they have determined not to proceed with the Offering, (ii) the Underwriting Agreement being terminated prior to the Closing Date (as defined in the Underwriting Agreement), (iii) the registration statement filed with the SEC with respect to the Offering being withdrawn and (iv) October 31, 2019, in the event that the Underwriting Agreement has not been executed by such date.

Exhibit C

Rhythm Pharmaceuticals, Inc.
8,108,108 Shares

Issuer:	Rhythm Pharmaceuticals, Inc.
Symbol:	RYTM
Size (Pre-Greenshoe):	$149,999,998
Total Firm Shares Offered by Issuer:	8,108,108
Greenshoe Shares Offered by Issuer:	1,216,216
Price to Public:	$18.50
Trade Date:	October 16, 2019
Closing Date:	October 18, 2019
CUSIP No:	76243J105
Underwriters:	Morgan Stanley & Co. LLC Goldman Sachs & Co. LLC Cowen and Company, LLC Needham & Company, LLC Ladenburg Thalmann & Co. Inc.

The issuer has filed a registration statement (and a preliminary prospectus supplement) with the Securities and Exchange Commission (the "SEC") for the offering to which this communication relates, which has become effective by rule of the SEC. A final prospectus supplement relating to the offering will be filed with the SEC. Copies of the final prospectus supplement may be obtained, when available from Morgan Stanley & Co. LLC, Attention: Prospectus Department, 180 Varick Street, 2nd Floor, New York, New York 10014; Goldman Sachs & Co. LLC, Attention: Prospectus Department, 200 West Street, New York, New York 10282, by telephone at 866-471-2526, by facsimile at 212-902-9316 or be e-mail at prospectusgroup-ny@ny.email.gs.com; or Cowen and Company, LLC, Attention: Prospectus Department, c/o Broadridge Financial Services, 1155 Long Island Avenue, Edgewood, NY 11717.

This communication shall not constitute an offer to sell or the solicitation of any offer to buy, nor shall there be any sale of the securities in any jurisdiction in which such offer, solicitation or sale would be unlawful prior to the registration or qualification under the securities law of any such jurisdiction.

Exhibit 5.1

Morgan Lewis

October 16, 2019

Rhythm Pharmaceuticals, Inc.
222 Berkeley Street, 12th Floor
Boston, MA 02116

RE: Rhythm Pharmaceuticals, Inc. Registration Statement on Form S-3 (File No. 333-228323)

Ladies and Gentlemen:

We have acted as counsel to Rhythm Pharmaceuticals, Inc., a Delaware corporation (the "Company"), in connection with the offering by the Company of up to 9,324,324 shares of the Company's common stock, par value $0.001 per share (the "Shares"), including up to 1,216,216 shares that may be sold pursuant to the exercise of an option by the underwriters, pursuant to the Registration Statement on Form S-3 (File No. 333-228323), filed with the Securities and Exchange Commission (the "SEC") under the Securities Act of 1933, as amended (the "Act"), on November 9, 2018, which automatically became effective upon filing (the "Registration Statement"), the related base prospectus, dated November 9, 2018 (the "Base Prospectus"), and the preliminary prospectus supplement, dated October 15, 2019 (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 October 15, 2019, by and between the Company and Morgan Stanley & Co. LLC, Goldman Sachs & Co. LLC and Cowen and Company, LLC, as representatives of the several underwriters named on Schedule I therein (the "Underwriting Agreement").

In connection with this opinion letter, we have examined the Registration Statement, the Prospectus, the Underwriting Agreement, and originals, or copies certified or otherwise identified to our satisfaction, of the Amended and Restated Certificate of Incorporation 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.

Based upon the foregoing, we are of the opinion that 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.

The opinions expressed herein are limited to Delaware General Corporation Law.

Morgan, Lewis & Bockius LLP

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Boston, MA 02110-1726
United States

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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

Exhibit 99.1

Rhythm Pharmaceuticals, Inc. Announces Proposed Public Offering

Boston, MA — October 15, 2019 — Rhythm Pharmaceuticals, Inc. (Nasdaq:RYTM), a biopharmaceutical company focused on the development and commercialization of therapeutics for the treatment of rare genetic disorders of obesity, today announced a proposed public offering of up to $150 million of shares of its common stock. All shares in the offering are expected to be offered by Rhythm. In addition, Rhythm intends to grant the underwriters a 30-day option to purchase up to an additional $22.5 million of shares of common stock at the public offering price, less the underwriting discount.

Morgan Stanley & Co. LLC, Goldman Sachs & Co. LLC, and Cowen and Company, LLC will act as the lead book-running managers for the proposed offering. Needham & Company, LLC will act as a co-manager for the proposed offering. The offering is subject to market and other customary closing conditions, and there can be no assurance as to whether or when the offering may be completed.

This proposed offering will be made only by means of a preliminary prospectus supplement and the accompanying prospectus. A copy of the preliminary prospectus supplement relating to this offering, when available, may be obtained from: Morgan Stanley & Co. LLC, Attention: Prospectus Department, 180 Varick Street, Second Floor, New York, New York 10014; Goldman Sachs & Co. LLC, Attention: Prospectus Department, 200 West Street, New York, New York 10282, email: prospectus-ny@ny.email.gs.com, telephone: 1-866-471-2526, fax: 1-212-902-9316; or Cowen and Company, LLC, c/o Broadridge Financial Solutions, 1155 Long Island Avenue, Edgewood, New York 11717, Attention: Prospectus Department, email: PostSaleManualRequests@broadridge.com, telephone: 1-833-297-2926. The final terms of the offering will be disclosed in a final prospectus supplement to be filed with the Securities and Exchange Commission (SEC).

The shares of common stock described above are being offered by Rhythm Pharmaceuticals pursuant to its automatic shelf registration statement on Form S-3, including a base prospectus, that was previously filed by Rhythm with the SEC and automatically became effective upon filing on November 9, 2018. 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 Rhythm Pharmaceuticals

Rhythm is a biopharmaceutical company focused on the development and commercialization of therapies for the treatment of rare genetic disorders of obesity. The company recently announced positive topline results from pivotal Phase 3 clinical trials of setmelanotide, its MC4R agonist, in patients with POMC deficiency obesity and LEPR deficiency obesity. Rhythm is also evaluating setmelanotide in a pivotal Phase 3 study in patients with Bardet-Biedl syndrome and Alström syndrome. The company is based in Boston, MA.

Forward-Looking Statements

This press release contains certain statements that are forward-looking 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 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. Statements using words such as “expect”, “goal”, “anticipate”, “believe”, “may”, “will”, “plan” and similar terms are also forward-looking statements. Such statements are subject to numerous risks and uncertainties, including but not limited to, uncertainties related to market conditions and the completion of the public offering on the anticipated terms or at all, and other risks as may be detailed from time to time in our Annual Report on Form 10-K and quarterly reports on Form 10-Q and other reports

we file with the Securities and Exchange Commission. Except as required by law, we undertake no obligations to make any revisions to the forward-looking statements contained in this release or to update them to reflect events or circumstances occurring after the date of this release, whether as a result of new information, future developments or otherwise.

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Media Contact:

Adam Daley
Berry & Company Public Relations
212-253-8881
adaley@berrypr.com

Exhibit 99.2

Rhythm Pharmaceuticals, Inc. Announces Pricing of Public Offering

Boston, MA — October 15, 2019 — Rhythm Pharmaceuticals, Inc. (Nasdaq:RYTM), a biopharmaceutical company focused on the development and commercialization of therapeutics for the treatment of rare genetic disorders of obesity, today announced the pricing of its public offering of 8,108,108 shares of its common stock at a public offering price of $18.50 per share. All of the shares are being offered by Rhythm. In addition, Rhythm has granted the underwriters a 30-day option to purchase up to an additional 1,216,216 shares of common stock at the public offering price, less the underwriting discounts. The offering is expected to close on October 18, 2019, subject to the satisfaction of customary closing conditions.

Morgan Stanley & Co. LLC, Goldman Sachs & Co. LLC, and Cowen and Company, LLC are acting as the joint book-running managers for the offering. Needham & Company, LLC is acting as a 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 (SEC) on October 15, 2019. The final prospectus supplement relating to the offering will be filed with the SEC. Copies of the final prospectus supplement relating to this offering may be obtained, when available, from: Morgan Stanley & Co. LLC, Attention: Prospectus Department, 180 Varick Street, Second Floor, New York, New York 10014; Goldman Sachs & Co. LLC, Attention: Prospectus Department, 200 West Street, New York, New York 10282, email: prospectus-ny@ny.email.gs.com, telephone: 1-866-471-2526, fax: 1-212-902-9316; or Cowen and Company, LLC, c/o Broadridge Financial Solutions, 1155 Long Island Avenue, Edgewood, New York 11717, Attention: Prospectus Department, email: PostSaleManualRequests@broadridge.com, telephone: 1-833-297-2926.

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Forward-Looking Statements

This press release contains certain statements that are forward-looking 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 our public offering. Statements using words such as “expect”, “goal”, “anticipate”, “believe”, “may”, “will”, “plan” and similar terms are also forward-looking statements. Such statements are subject to numerous risks and uncertainties, including but not limited to, uncertainties related to market conditions and the completion of the public offering on the anticipated terms or at all, and other risks as may be detailed from time to time in our Annual Report on Form 10-K and quarterly reports on Form 10-Q and other reports we file with the Securities and Exchange Commission. Except as required by law, we undertake no obligations to

make any revisions to the forward-looking statements contained in this release or to update them to reflect events or circumstances occurring after the date of this release, whether as a result of new information, future developments or otherwise.

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