
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

Catalyst Biosciences, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

56-2020050
(I.R.S. Employer
Identification No.)

260 Littlefield Ave.
South San Francisco, California 94080
(650) 266-8674

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

Nassim Usman, Ph.D.
Chief Executive Officer
Catalyst Biosciences, Inc.
260 Littlefield Ave.
South San Francisco, California 94080
(650) 266-8674

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

Copy to:

Stephen B. Thau
Morrison & Foerster LLP
755 Page Mill Road
Palo Alto, CA 94304
(650) 813-5600

Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this registration statement.

If the only securities being registered on this form are being offered pursuant to dividend or interest reinvestment plans, please check the following box:

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box:

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

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

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, please check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

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

Large accelerated filer
Non-accelerated filer (Do not check if a smaller reporting company)

Accelerated filer
Smaller reporting company

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered (1)	Amount to be Registered (1)(2)(3)(4)	Proposed Maximum Offering Price Per Unit (1)	Proposed Maximum Aggregate Offering Price (1)(2)(3)(4)	Amount of Registration Fee (5)
Common Stock, par value \$0.001 per share				
Preferred Stock, par value \$0.001 per share				
Debt Securities				
Warrants				
Units				
Total			\$50,000,000	\$5,035.00

- (1) Not specified as to each class of securities to be registered pursuant to General Instruction II.D of Form S-3 under the Securities Act of 1933, as amended, or the Securities Act.
- (2) The registrant is hereby registering an indeterminate amount and number of each identified class of the identified securities up to a proposed maximum aggregate offering price of \$50,000,000, which may be offered from time to time at indeterminate prices, including securities that may be purchased by underwriters. The registrant has estimated the proposed maximum aggregate offering price solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act. Securities registered hereunder may be sold separately, together or as units with other securities registered hereunder. For so long as the registrant's public float remains below \$75,000,000, the registrant will limit its issuance of securities in any twelve month calendar period to an aggregate market value (determined as of the time of issuance of that security) not in excess of one-third of the aggregate market value of all voting and non-voting common equity held by non-affiliates of the registrant in compliance with General Instruction I.B.6 of Form S-3.
- (3) The registrant is hereby registering an indeterminate amount and number of each identified class of the identified securities as may be issued upon conversion, exchange, exercise or settlement of any other securities that provide for such conversion, exchange, exercise or settlement.
- (4) Pursuant to Rule 429 under the Securities Act and as further described below under the heading "Statement Pursuant to Rule 429(b)," this registration statement covers up to a maximum aggregate offering price of \$50,000,000 of the registrant's common stock, preferred stock, debt securities, warrants and/or units, including \$50,000,000 of such securities registered on the registrant's Registration Statement on Form S-3 first filed on November 26, 2013 (File No. 333-192552) (the "Prior Registration Statement"), which was declared effective on December 11, 2013, that have not yet been sold and are included in this registration statement.
- (5) Calculated pursuant to Rule 457(o) under the Securities Act. Pursuant to Rule 457(p) under the Securities Act, the registrant is applying \$5,035 of the registration fee paid in connection with the Prior Registration Statement, representing a portion of the total amount of the filing fee associated with the unsold securities registered on the Prior Registration Statement, to offset \$5,035 of the registration fee due hereunder.

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

STATEMENT PURSUANT TO RULE 429(b)

The registrant is filing a base prospectus in this registration statement pursuant to Rule 429 under the Securities Act in order to satisfy the requirements of the Securities Act and the rules and regulations thereunder for the offering, issuance and sale by the registrant of up to a maximum aggregate offering price of \$50,000,000 of the registrant's common stock, preferred stock, debt securities, warrants and/or units registered in the Prior Registration Statement. The base prospectus in this registration statement, which is a new registration statement, also constitutes a post-effective amendment to the Prior Registration Statement. Such post-effective amendment shall hereafter become effective concurrently with the effectiveness of this registration statement and in accordance with Section 8(c) of, and Rule 429 under, the Securities Act.

EXPLANATORY NOTE

This registration statement contains two prospectuses:

- a base prospectus which covers the offering, issuance and sale by the registrant of up to a maximum aggregate offering price of \$50,000,000 of the registrant's common stock, preferred stock, debt securities, warrants and/or units; and
- a sales agreement prospectus supplement covering the offering, issuance and sale by the registrant of up to a maximum aggregate offering price of \$6,500,000 of the registrant's common stock that may be issued and sold under a Capital on Demand™ Sales Agreement dated March 16, 2016 with JonesTrading Institutional Services LLC.

The base prospectus immediately follows this explanatory note. The sales agreement prospectus supplement immediately follows the base prospectus. The common stock that may be offered, issued and sold by the registrant under the sales agreement prospectus supplement is included in the \$50,000,000 of securities that may be offered, issued and sold by the registrant under the base prospectus.

The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities, and we are not soliciting offers to buy these securities, in any state or other jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED March 16, 2016

\$50,000,000



**Common Stock
Preferred Stock
Debt Securities
Warrants
Units**

INVESTING IN OUR SECURITIES INVOLVES A HIGH DEGREE OF RISK. YOU SHOULD CAREFULLY READ AND CONSIDER THE RISK FACTORS DESCRIBED IN THIS PROSPECTUS, ANY ACCOMPANYING PROSPECTUS SUPPLEMENT AND IN THE DOCUMENTS INCORPORATED BY REFERENCE INTO THIS PROSPECTUS. SEE “[RISK FACTORS](#)” BEGINNING ON PAGE 2.

From time to time, we may offer and sell, in one or more offerings, in amounts, at prices and on terms determined at the time of any such offering, common stock, preferred stock, debt securities, warrants, either individually or in units, with a total value of up to \$50,000,000.

Our common stock trades on the NASDAQ Capital Market under the symbol “CBIO.” On March 1, 2016, the last reported sale price of the common stock on the NASDAQ Capital Market was \$2.15 per share.

As of January 26, 2016, the aggregate market value of our outstanding common stock held by non-affiliates, or the public float, was approximately \$20.8 million based on 11,430,104 shares of outstanding stock, of which 9,035,828 are held by non-affiliates, and a per share price of \$2.30, which was the closing sale price of our common stock on January 26, 2016. Pursuant to General Instruction I.B.6 of Form S-3, in no event will we sell our common stock in a public primary offering with a value exceeding more than one-third of our public float in any 12-month period so long as our public float remains below \$75,000,000. We have not offered any securities pursuant to General Instruction I.B.6 of Form S-3 during the prior 12 calendar month period that ends on and includes the date of this prospectus. As of January 26, 2016, one-third of our public float is equal to approximately \$6.9 million.

We will provide specific terms of these securities in supplements to this prospectus. The prospectus supplement will also describe the specific manner in which we will offer the securities and may also supplement, update or amend information contained in this document. You should read this prospectus and any supplement carefully before you purchase any of our securities.

THIS PROSPECTUS MAY NOT BE USED TO OFFER AND SELL SECURITIES UNLESS ACCOMPANIED BY A PROSPECTUS SUPPLEMENT.

We may offer the securities in amounts, at prices and on terms determined at the time of offering. We may sell the securities directly to you, through agents we select or through underwriters and dealers we select. If we use agents, underwriters or dealers to sell the securities, we will name them and describe their compensation in a prospectus supplement.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is _____, 2016

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No person has been authorized to give any information or make any representations in connection with this offering other than those contained or incorporated by reference in this prospectus and any accompanying prospectus supplement in connection with the offering described in this prospectus and any accompanying prospectus supplement, and, if given or made, such information or representations must not be relied upon as having been authorized by us. Neither this prospectus nor any prospectus supplement shall constitute an offer to sell or a solicitation of an offer to buy offered securities in any jurisdiction in which it is unlawful for such person to make such an offering or solicitation. Neither the delivery of this prospectus or any prospectus supplement nor any sale made hereunder shall under any circumstances imply that the information contained or incorporated by reference in this prospectus or in any prospectus supplement is correct as of any date subsequent to the date of this prospectus supplement or of any prospectus supplement.

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or SEC, using a “shelf” registration process. Under this shelf registration process, we may, from time to time, issue and sell to the public any part of the securities described in this prospectus in one or more offerings up to a total dollar amount of \$50,000,000.

This prospectus provides you with a general description of the securities we may offer. Each time we sell the securities, we will provide a prospectus supplement containing specific information about the terms of that offering. The prospectus supplement may also add, update or change information in this prospectus or in documents incorporated by reference in this prospectus. To the extent that any statement that we make in a prospectus supplement is inconsistent with statements made in this prospectus or in documents incorporated by reference in this prospectus, the statements made or incorporated by reference in this prospectus will be deemed modified or superseded by those made in the prospectus supplement. You should carefully read both this prospectus and any prospectus supplement together with the additional information described under the heading “Where You Can Find More Information” before buying any securities offered in this offering.

THIS PROSPECTUS MAY NOT BE USED TO OFFER AND SELL SECURITIES UNLESS IT IS ACCOMPANIED BY A PROSPECTUS SUPPLEMENT.

For purposes of this prospectus, references to the terms “Catalyst,” “the Company,” “we,” “us” and “our” refer to Catalyst Biosciences, Inc., unless the context otherwise requires.

The registration statement containing this prospectus, including exhibits to the registration statement, provides additional information about us and the securities offered under this prospectus. The registration statement can be read at the SEC’s website or at the SEC offices mentioned under the heading “Where You Can Find More Information.”

ABOUT CATALYST

We are a clinical-stage biopharmaceutical company focused on creating and developing novel medicines to address serious medical conditions. To date, we have focused our product development efforts in the fields of hemostasis, including the treatment of hemophilia and surgical bleeding, and inflammation, including prevention of delayed graft function in renal transplants and the treatment of dry age-related macular degeneration, a condition that can cause visual impairment or blindness for which there are no approved treatments. Our most advanced program is an improved next-generation coagulation Factor VIIa variant, CB 813d, that has successfully completed a Phase 1 clinical trial in severe hemophilia A and B patients. In addition to our lead Factor VIIa program, we have two other next-generation coagulation factors, a Factor IX variant, CB 2679d/ISU 304, that is in advanced preclinical development, and a Factor Xa variant, that has reached the advanced lead preclinical stage of development. Proteases regulate several complex biological cascades, or sequenced biochemical reactions, including the coagulation cascade that controls bleeding (hemostasis) in hemophilia and non-hemophilia settings and the complement cascade that causes inflammation and tissue damage in certain diseases.

Additional details of these programs and related strategic agreements are contained in our Annual Report on Form 10-K for the year ended December 31, 2015.

We commenced operations in 2002 and are a Delaware corporation. On August 20, 2015, we completed our business combination with Targacept, Inc., which was incorporated in 1997. Following the completion of the merger, our business conducted became primarily the business conducted by Old Catalyst. We refer in this prospectus to the business combination as the “merger” to the Company prior to the merger as “Targacept” and to our subsidiary as “Old Catalyst,” and discussions of historical results reflect the results of Old Catalyst prior to the completion of the merger and do not include the historical results of Targacept prior to the completion of the Merger.

Our corporate headquarters are located at South San Francisco, California 94080. Our telephone number is (650) 266-8674, and our website address is www.catalystbiosciences.com. The information on or accessible through our website does not constitute part of this prospectus or any accompanying prospectus supplement and should not be relied upon in connection with making any investment in our securities. We make our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to these reports available free of charge on our website as soon as reasonably practicable after we file these reports with the Commission. Our Code of Ethics can be found on our website.

Securities We Are Offering

We may offer shares of common stock, shares of preferred stock, debt securities, warrants, either individually or in units, with a total value of up to \$50,000,000 from time to time under this prospectus at prices and on terms to be determined by market conditions at the time of the offering. Our common stock currently is quoted on the NASDAQ Capital Market under the symbol "CBIO." Shares of common stock that may be offered in this offering will, when issued and paid for, be fully paid and non-assessable.

We refer to our common stock, preferred stock, debt securities, warrants and units in this prospectus as "securities." This prospectus provides you with a general description of the securities we may offer. Each time we offer a type or series of securities, we will provide a prospectus supplement that will describe the specific amounts, prices and other important terms of the securities, as described below under "Plan of Distribution."

RISK FACTORS

Before you invest in our securities, in addition to the other information, documents or reports incorporated by reference in this prospectus and any prospectus supplement or other offering materials, you should carefully consider the risk factors in this section, the section entitled "Risk Factors" in any prospectus supplement as well as our most recent Annual Report on Form 10-K, and in our Quarterly Reports on Form 10-Q filed subsequent to the Annual Report on Form 10-K, which are incorporated by reference into this prospectus and any prospectus supplement in their entirety, as the same may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future. Each of the risks described in these sections and documents could materially and adversely affect our business, financial condition, results of operations and prospects, and could result in a partial or complete loss of your investment.

CAUTIONARY NOTE REGARDING FORWARD LOOKING INFORMATION

This prospectus and the documents we incorporate by reference in this prospectus contains forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. All statements, other than statements of historical facts, included or incorporated in this prospectus regarding our strategy, future operations, financial position, future revenues, projected costs, prospects, plans and objectives of management are forward-looking statements. We may, in some cases, use words such as "believe," "anticipate," "should," "intend," "plan," "will," "estimate," "project," "expect" and similar expressions, although not all forward-looking statements contain these identifying words. These statements are based on assumptions and assessments made by our management in light of its experience and its perception of historical trends, current conditions, expected future developments and other factors our management believes to be appropriate. These forward-looking statements are subject to a number of risks and uncertainties, including those risks described or incorporated by reference in this prospectus under "Risk Factors" above.

Forward-looking statements included or incorporated by reference in this prospectus include, for example, statements about:

- the strategies, prospects, plans, expectations or objectives of management for future operations;
- the progress, scope or duration of the development of product candidates or programs;
- the benefits that may be derived from product candidates or the commercial or market opportunity in any target indication;
- our ability to protect intellectual property rights;
- our anticipated operations, financial position, revenues, costs or expenses, statements regarding future economic conditions or performance;
- potential regulatory filings for or approval of any of our product candidates;
- the progress of our third-party collaborations, including estimated milestones;
- our intention to seek, and the ability to enter into strategic alliances and collaborations;
- the responsibilities of our collaborators, including the responsibility to make cost reimbursement, milestone, royalty and other payments to us, and our expectations regarding our collaborators' plans with respect to our products;

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- our responsibilities to our collaborators, including our responsibilities to conduct research and development, clinical trials and manufacture products;
- the results and timing of clinical trials and the possible commencement of future clinical trials;
- conditions for obtaining regulatory approval of our product candidates;
- submission and timing of applications for regulatory approval;
- the impact of FDA and other government regulations on our business;
- uncertainties associated with obtaining and protecting patents and other intellectual property rights, as well as avoiding the intellectual property rights of others;
- products and companies that will compete with the products we license to third-party collaborators;
- the possibility we may commercialize our own products and build up our commercial, sales and marketing capabilities and other required infrastructure;
- our employees, including the number of employees and the continued service of key management, technical and scientific personnel;
- our future performance and our expectations regarding our ability to achieve profitability;
- requirements for us to purchase supplies and raw materials from third parties, and the ability of third parties to provide us with required supplies and raw materials;
- sufficiency of our cash resources, anticipated capital requirements and capital expenditures and our need for additional financing, including potential sales under our shelf registration statement;
- the composition of future revenues;
- accounting policies and estimates, including revenue recognition policies; and
- statements of belief and any statement of assumptions underlying any of the foregoing.

Any such forward-looking statements are not guarantees of future performance and actual results, developments and business decisions may differ from those contemplated by such forward-looking statements. We disclaim any duty to update any forward-looking statements. You should also carefully consider other information set forth in reports or other documents that we file with the Commission.

RATIO OF EARNINGS TO FIXED CHARGES

The following table sets forth the ratio of our earnings or deficiency to fixed charges for the periods set forth below. Our earnings were insufficient to cover fixed charges for each of the years ended December 31, 2011, 2012, 2013, 2014 and 2015. The extent to which earnings were insufficient to cover fixed charges for those periods is also shown in the table. "Earnings" consist of net income (loss) from operations before income taxes less (plus) fixed charges. "Fixed charges" consist of interest expense and the estimated portion of operating lease expense that represents interest (the values are reflected in thousands, except for the ratio).

	Fiscal Year Ended December 31,				
	2015	2014	2013	2012	2011
Ratio of earnings to fixed charges	—	—	—	—	—
Deficiency of earnings to fixed charges	\$(13,051)	\$(6,272)	\$(9,631)	\$(18,750)	\$(5,571)

USE OF PROCEEDS

Unless otherwise indicated in a prospectus supplement, the net proceeds from the sale of securities offered by this prospectus will be used for general corporate purposes, which may include clinical trials, research and development activities, capital expenditures, selling, general and administrative costs, facilities expansion, and to meet working capital needs.

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We expect from time to time to evaluate the acquisition of businesses, products and technologies for which a portion of the net proceeds may be used, although we currently are not planning or negotiating any such transactions. Pending such uses, we may invest the net proceeds in investment grade interest-bearing securities.

The amounts actually expended for each purpose may vary significantly depending upon numerous factors, including the amount and timing of the proceeds from this offering and progress with the commercial development of our products as well as our clinical development programs. Expenditures will also depend upon the establishment of collaborative arrangements with other companies, the availability of additional financing and other factors. Investors will be relying on the judgment of our management regarding the application of the proceeds of any sale of securities.

DESCRIPTION OF CAPITAL STOCK

The following description of our common stock and preferred stock, together with the additional information we include in any applicable prospectus supplements, summarizes the material terms and provisions of the common stock and preferred stock that we may offer under this prospectus. It may not contain all the information that is important to you. For the complete terms of our common stock and preferred stock, please refer to our Fourth Amended and Restated Certificate of Incorporation, as amended (the “restated certificate of incorporation”) and our amended and restated bylaws, which are incorporated by reference into the registration statement which includes this prospectus. The Delaware General Corporation Law (“DGCL”) may also affect the terms of these securities. While the terms we have summarized below will apply generally to any future common stock and preferred stock that we may offer, we will describe the particular terms of these securities in more detail in the applicable prospectus supplement. If we so indicate in a prospectus supplement, the terms of any security we offer under that prospectus supplement may differ from the terms we describe below.

Common Stock

Under our restated certificate of incorporation, we have authority to issue 100,000,000 shares of our common stock, par value \$0.001 per share. As of March 1, 2016, 11,430,104 shares of our common stock were issued and outstanding. All shares of our common stock will, when issued, be duly authorized, fully paid and nonassessable.

Dividends. Subject to preferential dividend rights of any other class or series of stock, the holders of shares of our common stock are entitled to receive dividends, including dividends of our stock, as and when declared by our board of directors, subject to any limitations imposed by law and to the rights of the holders, if any, of our preferred stock. We have never paid cash dividends on our common stock, except with respect to a cash dividend paid in connection with the closing of the merger. We do not anticipate paying periodic cash dividends on our common stock for the foreseeable future. Any future determination about the payment of dividends will be made at the discretion of our board of directors and will depend upon our earnings, if any, capital requirements, operating and financial conditions and on such other factors as the board of directors deems relevant.

Liquidation. In the event we are liquidated, dissolved or our affairs are wound up, after we pay or make adequate provision for all of our known debts and liabilities, each holder of our common stock will be entitled to share ratably in all assets that remain, subject to any rights that are granted to the holders of any class or series of preferred stock.

Voting Rights. For all matters submitted to a vote of stockholders, each holder of our common stock is entitled to one vote for each share registered in his or her name. Except as may be required by law and in connection with some significant actions, such as mergers, consolidations, or amendments to our restated certificate of incorporation that affect the rights of stockholders, holders of our common stock vote together as a single class. There is no cumulative voting in the election of our directors, which means that, subject to any rights to elect directors that are granted to the holders of any class or series of preferred stock, a plurality of the votes cast at a meeting of stockholders at which a quorum is present is sufficient to elect a director.

Other Rights and Restrictions. Subject to the preferential rights of any other class or series of stock, all shares of our common stock have equal dividend, distribution, liquidation and other rights, and have no preference, appraisal or exchange rights, except for any appraisal rights provided by Delaware law. Furthermore, holders of our common stock have no conversion, sinking fund or redemption rights, or preemptive rights to subscribe for any of our securities. Our restated certificate of incorporation and our bylaws do not restrict the ability of a holder of our common stock to transfer his or her shares of our common stock.

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The rights, powers, preferences and privileges of holders of our common stock are subject to, and may be adversely affected by, the rights of holders of shares of any series of preferred stock which we may designate and issue in the future.

Listing. Our common stock is listed on the NASDAQ Capital Market under the symbol “CBIO.”

Transfer Agent and Registrar. The transfer agent for our common stock is American Stock Transfer & Trust Company, LLC. Its address is 6201 15th Avenue, Brooklyn, NY 11219.

Preferred Stock

Under our restated certificate of incorporation, we have authority, subject to any limitations prescribed by law and without further stockholder approval, to issue from time to time up to 5,000,000 shares of preferred stock, par value \$0.001 per share, in one or more series. As of March 1, 2016, no shares of preferred stock were issued and outstanding.

Pursuant to our restated certificate of incorporation, we are authorized to issue “blank check” preferred stock, which may be issued from time to time in one or more series upon authorization by our board of directors. Our board of directors, without further approval of the stockholders, is authorized to fix the designation, powers, preferences, relative, participating optional or other special rights, and any qualifications, limitations and restrictions applicable to each series of the preferred stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes could, among other things, adversely affect the voting power or rights of the holders of our common stock and, under certain circumstances, make it more difficult for a third party to gain control of us, discourage bids for our common stock at a premium or otherwise adversely affect the market price of the common stock.

The preferred stock will have the terms described below unless otherwise provided in the prospectus supplement relating to a particular series of the preferred stock. You should read the prospectus supplement relating to the particular series of the preferred stock being offered for specific terms, including:

- the designation and stated value per share of the preferred stock and the number of shares offered;
- the amount of liquidation preference per share;
- the price at which the preferred stock will be issued;
- the dividend rate, or method of calculation of any dividend, the dates on which dividends will be payable, whether dividends will be cumulative or noncumulative and, if cumulative, the dates from which dividends will accumulate;
- any redemption or sinking fund provisions;
- if other than the currency of the United States, the currency or currencies, including composite currencies, in which the preferred stock is denominated and/or in which payments will or may be payable;
- any conversion provisions; and
- any other rights, preferences, privileges, qualifications, limitations and restrictions on the preferred stock.

The preferred stock will, when issued, be duly authorized, fully paid and nonassessable. Unless otherwise specified in the prospectus supplement, each series of the preferred stock will rank equally as to dividends and liquidation rights in all respects with any other series of preferred stock. The rights of holders of shares of each series of preferred stock will be subordinate to those of our general creditors.

Rank. Unless otherwise specified in the prospectus supplement, the preferred stock will, with respect to dividend rights and rights upon our liquidation, dissolution or winding up of our affairs, rank:

- senior to all classes or series of our common stock and to all equity securities ranking junior to such preferred stock with respect to dividend rights or rights upon our liquidation, dissolution or winding up of our affairs;
- on a parity with all equity securities issued by us, the terms of which specifically provide that such equity securities rank on a parity with the preferred stock with respect to dividend rights or rights upon our liquidation, dissolution or winding up of our affairs; and
- junior to all equity securities issued by us, the terms of which specifically provide that such equity securities rank senior to the preferred stock with respect to dividend rights or rights upon our liquidation, dissolution or winding up of our affairs.

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The term “equity securities” does not include convertible debt securities.

Dividends. Holders of the preferred stock of each series will be entitled to receive, when, as and if declared by our board of directors, cash dividends at such rates and on such dates described in the prospectus supplement. Different series of preferred stock may be entitled to dividends at different rates or based on different methods of calculation. The dividend rate may be fixed or variable or both. Dividends will be payable to the holders of record as they appear on our stock books on record dates fixed by our board of directors, as specified in the applicable prospectus supplement.

Dividends on any series of the preferred stock may be cumulative or noncumulative, as described in the applicable prospectus supplement. If our board of directors does not declare a dividend payable on a dividend payment date on any series of noncumulative preferred stock, then the holders of that noncumulative preferred stock will have no right to receive a dividend for that dividend payment date, and we will have no obligation to pay the dividend accrued for that period, whether or not dividends on that series are declared payable on any future dividend payment dates. Dividends on any series of cumulative preferred stock will accrue from the date we initially issue shares of such series or such other date specified in the applicable prospectus supplement.

Liquidation Preference. Upon any voluntary or involuntary liquidation, dissolution or winding up of our affairs, before we make any distribution or payment to the holders of any common stock or any other class or series of our capital stock ranking junior to the preferred stock in the distribution of assets upon any liquidation, dissolution or winding up of our affairs, the holders of each series of preferred stock shall be entitled to receive out of assets legally available for distribution to stockholders, liquidating distributions in the amount of the liquidation preference per share set forth in the applicable prospectus supplement, plus any accrued and unpaid dividends thereon. Such dividends will not include any accumulation in respect of unpaid noncumulative dividends for prior dividend periods. Unless otherwise specified in the prospectus supplement, after payment of the full amount of their liquidating distributions, the holders of preferred stock will have no right or claim to any of our remaining assets. Upon any such voluntary or involuntary liquidation, dissolution or winding up, if our available assets are insufficient to pay the amount of the liquidating distributions on all outstanding preferred stock and the corresponding amounts payable on all other classes or series of our capital stock ranking on parity with the preferred stock and all other such classes or series of shares of capital stock ranking on parity with the preferred stock in the distribution of assets, then the holders of the preferred stock and all other such classes or series of capital stock will share ratably in any such distribution of assets in proportion to the full liquidating distributions to which they would otherwise be entitled.

Redemption. If so provided in the applicable prospectus supplement, the preferred stock will be subject to mandatory redemption or redemption at our option, as a whole or in part, in each case upon the terms, at the times and at the redemption prices set forth in such prospectus supplement.

Voting Rights. Holders of preferred stock will have voting rights as required by law or as indicated in the applicable prospectus supplement.

Conversion Rights. The terms and conditions, if any, upon which any series of preferred stock is convertible into common stock will be set forth in the applicable prospectus supplement relating thereto. Such terms will include the number of shares of common stock into which the shares of preferred stock are convertible, the conversion price, rate or manner of calculation thereof, the conversion period, provisions as to whether conversion will be at our option or at the option of the holders of the preferred stock, the events requiring an adjustment of the conversion price and provisions affecting conversion in the event of the redemption.

Transfer Agent and Registrar. Any transfer agent and registrar for the preferred stock will be set forth in the applicable prospectus supplement.

Certain Effects of Authorized but Unissued Stock

We have shares of common stock and preferred stock available for future issuance without stockholder approval. We may issue these additional shares for a variety of corporate purposes, including future public or private offerings to raise additional capital or to facilitate corporate acquisitions or for payment as a dividend on our capital stock. The existence of unissued and unreserved preferred stock may enable our board of directors to issue shares of preferred stock with terms that could render more difficult or discourage a third-party attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise, thereby protecting the continuity of our management. In addition, if we issue preferred stock, the issuance could adversely affect the voting power of holders of common stock and the likelihood that holders of common stock will receive dividend payments or payments upon liquidation.

ADDITIONAL INFORMATION CONCERNING OUR CAPITAL STOCK

Anti-Takeover Effects of Provisions of Our Charter Documents

Our restated certificate of incorporation provides for our board of directors to be divided into three classes serving staggered terms. Approximately one-third of our board of directors will be elected each year. The provision for a classified board could prevent a party who acquires control of a majority of the outstanding voting stock from obtaining control of the board of directors until the second annual stockholders meeting following the date the acquirer obtains the controlling stock interest. The classified board provision could discourage a potential acquirer from making a tender offer or otherwise attempting to obtain control of Catalyst and could increase the likelihood that incumbent directors will retain their positions. Our restated certificate of incorporation provides that directors may be removed with or without cause by the affirmative vote of the holders of at least 66 2/3% of the voting power of all outstanding stock.

Our restated certificate of incorporation requires that certain amendments to the restated certificate of incorporation and amendments by the stockholders of our bylaws require the affirmative vote of at least 66 2/3% of the voting power of all outstanding stock. These provisions could discourage a potential acquirer from making a tender offer or otherwise attempting to obtain control of the Company and could delay changes in management.

Our amended and restated bylaws establish an advance notice procedure for stockholder proposals to be brought before an annual stockholders meeting, including proposed nominations of persons for election to our board of directors. At an annual stockholders meeting, stockholders may only consider proposals or nominations specified in the notice of meeting or brought before the meeting by or at the direction of our board of directors. Stockholders may also consider a proposal or nomination by a person who was a stockholder of record on the record date for the meeting, who is entitled to vote at the meeting and who has given to the Secretary of the Company timely written notice, in proper form, of his or her intention to bring that business before the annual stockholders meeting. The amended and restated bylaws do not give our board of directors the power to approve or disapprove stockholder nominations of candidates or proposals regarding other business to be conducted at a special or annual meeting of the stockholders. However our bylaws may have the effect of precluding the conduct of business at a meeting if the proper procedures are not followed. These provisions may also discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of the Company.

Our amended and restated bylaws provide that only our board of directors, the chairperson of the board, the President or the Chief Executive Officer may call a special meeting of stockholders. Because our stockholders do not have the right to call a special meeting, a stockholder could not force stockholder consideration of a proposal over the opposition of our board of directors by calling a special meeting of stockholders prior to such time as a majority of our board of directors, the chairperson of the board, the President or the Chief Executive Officer believed the matter should be considered or until the next annual meeting provided that the requestor met the notice requirements. The restriction on the ability of stockholders to call a special meeting means that a proposal to replace the board also could be delayed until the next annual stockholders meeting.

Our restated certificate of incorporation does not allow stockholders to act by written consent without a meeting. Without the availability of stockholder's actions by written consent, a holder controlling a majority of our capital stock would not be able to amend our bylaws or remove directors without holding a stockholders' meeting.

Anti-Takeover Effects of Provisions of Delaware Law

We are subject to the provisions of Section 203 of the DGCL, or Section 203. Under Section 203, we would generally be prohibited from engaging in any business combination with any interested stockholder for a period of three years following the time that this stockholder became an interested stockholder unless:

- prior to this time, our board of directors approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding shares owned by persons who are directors and also officers, and by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or

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- at or subsequent to such time, the business combination is approved by our board of directors and authorized at a special or annual stockholders meeting, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock that is not owned by the interested stockholder.

Under Section 203, a “business combination” includes:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;
- any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder, subject to limited exceptions;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 defines an interested stockholder as an entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with or controlling or controlled by such entity or person.

Limitation of Liability and Indemnification

Our restated certificate of incorporation provides that our directors shall not be personally liable to us or our stockholders for monetary damages for any breach of fiduciary duty as a director, except for liability for breach of the director’s duty of loyalty to us or our stockholders, for acts or omissions not in good faith or involving intentional misconduct or a knowing violation of law, for payment of dividends or approval of stock purchases or redemptions that are prohibited by the DGCL, or for any transaction from which the director derived an improper personal benefit. Under the DGCL, our directors have a fiduciary duty to us that is not eliminated by this provision of the restated certificate of incorporation and, in appropriate circumstances, equitable remedies such as injunctive or other forms of non-monetary relief will remain available. This provision also does not affect our directors’ responsibilities under any other laws, such as federal securities laws or state or federal environmental laws.

Section 145 of the DGCL empowers a corporation to indemnify its directors and officers against expenses (including attorneys’ fees), judgments, fines and amounts paid in settlements actually and reasonably incurred by them in connection with any action, suit or proceeding brought by third parties by reason of the fact that they were or are directors or officers of the corporation, if they acted in good faith, in a manner they reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe that their conduct was unlawful. The DGCL provides further that the indemnification permitted thereunder shall not be deemed exclusive of any other rights to which the directors and officers may be entitled under the corporation’s bylaws, any agreement, a vote of stockholders or otherwise. Our restated certificate of incorporation provides that, to the fullest extent permitted by Section 145 of the DGCL, we shall indemnify any person who is or was a director or officer of us, or is or was serving at our request as a director, officer or trustee of another corporation, partnership, joint venture, trust, employee benefit plan or other enterprise, against the expenses, liabilities or other matters referred to in or covered by Section 145 of the DGCL. Our amended and restated bylaws provide that we will indemnify any person who was or is a party or threatened to be made a party to any proceeding by reason of the fact that such person is or was a director or officer of us or is or was serving at our request as a director, officer or trustee of another corporation, partnership, joint venture, trust, employee benefit plan or other enterprise to the fullest extent permitted by the DGCL.

In addition, we have entered into indemnification agreements with each of our directors and with certain of our executive officers. Pursuant to the indemnification agreements, we has agreed to indemnify and hold harmless these directors and officers to the fullest extent permitted by the DGCL. The agreements generally cover expenses that a director or officer incurs or amounts that a director or officer becomes obligated to pay because of any proceeding to which he or she is made or threatened to be made a party or participant by reason of his or her service as a current or former director, officer, employee or agent of the Company. The agreements also provide for the advancement of expenses to the directors and officers subject to specified conditions. There are certain exceptions to our obligation to indemnify the directors and officers, including any intentional malfeasance or act where the director or officer did not in good faith believe he or she was acting in our best interests, with respect to “short-swing” profit claims under Section 16(b) of the 1934 Act and, with certain exceptions, with respect to proceedings that he or she initiates.

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Section 145 of the DGCL also empowers a corporation to purchase insurance for its officers and directors for such liabilities. We maintain liability insurance for our officers and directors.

DESCRIPTION OF DEBT SECURITIES

The following description, together with the additional information we include in any applicable prospectus supplements, summarizes the material terms and provisions of the debt securities that we may offer under this prospectus. While the terms we have summarized below will apply generally to any future debt securities we may offer under this prospectus, we will describe the particular terms of any debt securities that we may offer in more detail in the applicable prospectus supplement. The terms of any debt securities we offer under a prospectus supplement may differ from the terms we describe below.

The following summary description, together with the additional information we may include in any applicable prospectus supplements does not purport to be complete and is subject to, and qualified in its entirety by reference to, the form of indenture filed as an exhibit to the registration statement of which this prospectus is part, as it may be supplemented, amended or modified from time to time, as well as the notes and supplemental agreements relating to each series of debt securities that will be incorporated by reference as exhibits to the registration statement that includes this prospectus or as exhibits to a current report on Form 8-K if we offer debt securities.

We will issue the senior debt securities under one or more senior indentures that we will enter into with a trustee named in the relevant senior indenture. We will issue subordinated debt securities under one or more subordinated indentures that we will enter into with a trustee named in the relevant subordinated indenture. We have filed a form of indenture as an exhibit to the registration statement of which this prospectus is a part. We use the terms “indenture” and “indentures” in this prospectus to refer to both the senior indenture and the subordinated indenture.

The indentures will be qualified under the Trust Indenture Act of 1939, as amended. We use the term “debenture trustee” to refer to either the trustee under the senior indenture or the trustee under the subordinated indenture, as applicable.

The following summaries of material provisions of the senior debt securities, the subordinated debt securities and the indentures are subject to, and qualified in their entirety by reference to, all the provisions of the indenture applicable to a particular series of debt securities. We urge you to read the applicable prospectus supplements related to the debt securities that we sell under this prospectus, as well as the indenture that would contain the terms of the debt securities. Except as we may otherwise indicate, the terms of the senior indenture and the subordinated indenture would be identical.

General

We will describe in each prospectus supplement the following terms relating to a series of debt securities:

- the title;
- the principal amount being offered, and if a series, the total amount authorized and the total amount outstanding;
- any limit on the amount that may be issued;
- whether or not we will issue the series of debt securities in global form, the terms and who the depositary will be;
- the maturity date;
- whether and under what circumstances, if any, we will pay additional amounts on any debt securities held by a person who is not a U.S. person for tax purposes, and whether we can redeem the debt securities if we have to pay such additional amounts;
- the annual interest rate, which may be fixed or variable, or the method for determining the rate and the date interest will begin to accrue, the dates interest will be payable and the regular record dates for interest payment dates or the method for determining such dates;
- whether or not the debt securities will be secured or unsecured, and the terms of any secured debt;
- the terms of the subordination of any series of subordinated debt;
- the place where payments will be payable;

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- restrictions on transfer, sale or other assignment, if any;
- our right, if any, to defer payment of interest and the maximum length of any such deferral period;
- the date, if any, after which, and the price at which, we may, at our option, redeem the series of debt securities pursuant to any optional or provisional redemption provisions and the terms of those redemptions provisions;
- the date, if any, on which, and the price at which we are obligated, pursuant to any mandatory sinking fund or analogous fund provisions or otherwise, to redeem, or at the holder's option to purchase, the series of debt securities and the currency or currency unit in which the debt securities are payable;
- whether the indenture will restrict our ability and/or the ability of our subsidiaries to:
 - incur additional indebtedness;
 - issue additional securities;
 - create liens;
 - pay dividends and make distributions in respect of our capital stock and the capital stock of our subsidiaries;
 - redeem capital stock;
 - place restrictions on our subsidiaries' ability to pay dividends, make distributions or transfer assets;
 - make investments or other restricted payments;
 - sell or otherwise dispose of assets;
 - enter into sale-leaseback transactions;
 - engage in transactions with stockholders and affiliates;
 - issue or sell stock of our subsidiaries; or
 - effect a consolidation or merger;
- whether the indenture will require us to maintain any interest coverage, fixed charge, cash flow-based, asset-based or other financial ratios;
- a discussion of any material or special U.S. federal income tax considerations applicable to the debt securities;
- information describing any book-entry features;
- provisions for a sinking fund purchase or other analogous fund, if any;
- whether the debt securities are to be offered at a price such that they will be deemed to be offered at an "original issue discount" as defined in paragraph (a) of Section 1273 of the Internal Revenue Code;
- the denominations in which we will issue the series of debt securities, if other than denominations of \$1,000 and any integral multiple thereof; and
- any other specific terms, preferences, rights or limitations of, or restrictions on, the debt securities, including any additional events of default or covenants provided with respect to the debt securities, and any terms that may be required by us or advisable under applicable laws or regulations.

Conversion or Exchange Rights

We will set forth in the prospectus supplement the terms on which a series of debt securities may be convertible into or exchangeable for our common stock or our other securities. We will include provisions as to whether conversion or exchange is mandatory, at the option of the holder or at our option. We may include provisions pursuant to which the number of shares of our common stock or our other securities that the holders of the series of debt securities receive would be subject to adjustment.

Consolidation, Merger or Sale

Any successor to or acquiror of the indentures must assume all of our obligations under the indentures or the debt securities, as appropriate. If the debt securities are convertible for our other securities or securities of other entities, the person

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with whom we consolidate or merge or to whom we sell all of our property must make provisions for the conversion of the debt securities into securities that the holders of the debt securities would have received if they had converted the debt securities before the consolidation, merger or sale.

Events of Default Under the Indenture

Unless otherwise provided in any applicable prospectus supplement, documents incorporated by reference or free writing prospectus, the following will be events of default under the indenture with respect to each series of debt securities issued thereunder:

- (a) if we fail to pay interest when due and payable and our failure continues for 30 days, or within such other time period as may be specified in the applicable indenture, and the time for payment has not been extended or deferred;
- (b) if we fail to pay the principal, premium or sinking fund payment, if any, when due and payable and the time for payment has not been extended or delayed;
- (c) if specified events of bankruptcy, insolvency or reorganization occur; and
- (d) if we fail to observe or perform any other covenant contained in the debt securities or the indentures, other than a covenant specifically relating to another series of debt securities, and our failure continues for 60 days, or within such other time period as may be specified in the applicable indenture, after we receive notice from the debenture trustee or holders of at least a majority in principal amount of the outstanding debt securities of an affected series, or such other percentage as may be specified in the applicable indenture, in aggregate principal amount of the outstanding debt securities of the applicable series.

If an event of default with respect to debt securities of any series occurs and is continuing, other than an event of default specified in the last bullet point above, the debenture trustee or the holders of at least 25%, or such other percentage as may be specified in the applicable indenture, in aggregate principal amount of the outstanding debt securities of that series, by notice to us in writing, and to the debenture trustee if notice is given by such holders, may declare the unpaid principal of, premium, if any, and accrued interest, if any, due and payable immediately. If an event of default specified in the last bullet point above occurs with respect to us, the principal amount of and accrued interest, if any, of each issue of debt securities then outstanding shall be due and payable without any notice or other action on the part of the debenture trustee or any holder.

The holders of a majority in principal amount of the outstanding debt securities of an affected series may waive any default or event of default with respect to the series and its consequences, except defaults or events of default regarding payment of principal, premium, if any, or interest, unless we have cured the default or event of default in accordance with the indenture. Any waiver shall cure the default or event of default.

Subject to the terms of the indentures, if an event of default under an indenture shall occur and be continuing, the debenture trustee will be under no obligation to exercise any of its rights or powers under such indenture at the request or direction of any of the holders of the applicable series of debt securities, unless such holders have offered the debenture trustee reasonable indemnity. The holders of a majority in principal amount of the outstanding debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the debenture trustee, or exercising any trust or power conferred on the debenture trustee, with respect to the debt securities of that series, provided that:

- the direction so given by the holder is not in conflict with any law or the applicable indenture; and
- subject to its duties under the Trust Indenture Act of 1939, the debenture trustee need not take any action that might involve it in personal liability or might be unduly prejudicial to the holders not involved in the proceeding.

A holder of the debt securities of any series will only have the right to institute a proceeding under the indentures or to appoint a receiver or trustee, or to seek other remedies if:

- the holder has given written notice to the debenture trustee of a continuing event of default with respect to that series;
- the holders of at least 25% (or, in the case of a default of the type described under subsection (d), above, a majority in principal amount of the outstanding debt securities of an affected series), or such other percentage as may be specified in the applicable indenture, in aggregate principal amount of the outstanding debt securities of that series have made written request, and such holders have offered reasonable indemnity to the debenture trustee to institute the proceeding as trustee; and

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- the debenture trustee does not institute the proceeding, and does not receive from the holders of a majority in aggregate principal amount of the outstanding debt securities of that series other conflicting directions within 60 days, or within such other time period as may be specified in the applicable indenture, after the notice, request and offer of indemnity.

These limitations do not apply to a suit instituted by a holder of debt securities if we default in the payment of the principal, premium, if any, or interest on, the debt securities.

We will periodically file statements with the debenture trustee regarding our compliance with specified covenants in the indentures.

Modification of Indenture; Waiver

We and the debenture trustee may change an indenture without the consent of any holders with respect to specific matters:

- to evidence the succession of another corporation to us and the assumption by any such successor of our covenants in such indenture and in the debt securities issued thereunder;
- to add to our covenants or to surrender any right or power conferred on us pursuant to the indenture;
- to establish the form and terms of debt securities issued thereunder;
- to evidence and provide for a successor trustee under such indenture with respect to one or more series of debt securities issued thereunder or to provide for or facilitate the administration of the trusts under such indenture by more than one trustee;
- to cure any ambiguity, to correct or supplement any provision in the indenture that may be defective or inconsistent with any other provision of the indenture or to make any other provisions with respect to matters or questions arising under such indenture; provided that no such action adversely affects the interests of the holders of any series of debt securities issued thereunder in any material respect;
- to add to, delete from or revise the conditions, limitations and restrictions on the authorized amount, terms or purposes of issue, authentication and delivery of securities under the indenture;
- to add any additional events of default with respect to all or any series of debt securities;
- to supplement any of the provisions of the indenture as may be necessary to permit or facilitate the defeasance and discharge of any series of debt securities, provided that such action does not adversely affect the interests of any holder of an outstanding debt security of such series or any other security in any material respect;
- to make provisions with respect to the conversion or exchange rights of holders of debt securities of any series;
- to pledge to the trustee as security for the debt securities of any series any property or assets;
- to add guarantees in respect of the debt securities of one or more series;
- to change or eliminate any of the provisions of the indenture, provided that any such change or elimination becomes effective only when there is no security of any series outstanding created prior to the execution of such supplemental indenture which is entitled to the benefit of such provision;
- to provide for certificated securities in addition to or in place of global securities;
- to qualify such indenture under the Trust Indenture Act of 1939, as amended;
- with respect to the debt securities of any series, to conform the text of the indenture or the debt securities of such series to any provision of the description thereof in our offering memorandum or prospectus relating to the initial offering of such debt securities, to the extent that such provision, in our good faith judgment, was intended to be a verbatim recitation of a provision of the indenture or such securities; or
- to make any other change that does not adversely affect the rights of holders of any series of debt securities issued thereunder in any material respect.

In addition, under the indentures, the rights of holders of a series of debt securities may be changed by us and the debenture trustee with the written consent of the holders of at least a majority in aggregate principal amount of the outstanding debt securities of each series that is affected. However, we and the debenture trustee may only make the following changes with the consent of each holder of any outstanding debt securities affected:

- extending the fixed maturity of the series of debt securities; or

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- reducing the principal amount, reducing the rate of or extending the time of payment of interest, or reducing any premium payable upon the redemption of any debt securities; or
- reducing the percentage of debt securities, the holders of which are required to consent to any amendment, supplement, modification or waiver; or
- make any change that adversely affects the right to convert or exchange any security into or for common stock or other securities, cash or other property in accordance with the terms of the applicable debt security.

Each indenture provides that we can elect to be discharged from our obligations with respect to one or more series of debt securities, except for specified obligations, including obligations to:

- register the transfer or exchange of debt securities of the series;
- replace stolen, lost or mutilated debt securities of the series;
- maintain paying agencies;
- hold monies for payment in trust;
- recover excess money held by the debenture trustee;
- compensate and indemnify the debenture trustee; and
- appoint any successor trustee.

In order to exercise our rights to be discharged, we must deposit with the debenture trustee money or government obligations sufficient to pay all the principal of, any premium, if any, and interest on, the debt securities of the series on the dates payments are due.

Form, Exchange and Transfer

We will issue the debt securities of each series only in fully registered form without coupons and, unless we otherwise specify in the applicable prospectus supplement, in denominations of \$1,000 and any integral multiple thereof. The indentures provide that we may issue debt securities of a series in temporary or permanent global form and as book-entry securities that will be deposited with, or on behalf of, the American Stock Transfer & Trust Company, LLC or another depository named by us and identified in a prospectus supplement with respect to that series. See “Legal Ownership of Securities” for a further description of the terms relating to any book-entry securities.

At the option of the holder, subject to the terms of the indentures and the limitations applicable to global securities described in the applicable prospectus supplement, the holder of the debt securities of any series can exchange the debt securities for other debt securities of the same series, in any authorized denomination and of like tenor and aggregate principal amount.

Subject to the terms of the indentures and the limitations applicable to global securities set forth in the applicable prospectus supplement, holders of the debt securities may present the debt securities for exchange or for registration of transfer, duly endorsed or with the form of transfer endorsed thereon duly executed if so required by us or the security registrar, at the office of the security registrar or at the office of any transfer agent designated by us for this purpose. Unless otherwise provided in the debt securities that the holder presents for transfer or exchange, we will make no service charge for any registration of transfer or exchange, but we may require payment of any taxes or other governmental charges.

We will name in the applicable prospectus supplement the security registrar, and any transfer agent in addition to the security registrar, that we initially designate for any debt securities. We may at any time designate additional transfer agents or rescind the designation of any transfer agent or approve a change in the office through which any transfer agent acts, except that we will be required to maintain a transfer agent in each place of payment for the debt securities of each series.

If we elect to redeem the debt securities of any series, we will not be required to:

- issue, register the transfer of, or exchange any debt securities of that series during a period beginning at the opening of business 15 days, or within such other time period as may be specified in the applicable indenture, before the day of mailing of a notice of redemption of any debt securities that may be selected for redemption and ending at the close of business on the day of the mailing; or

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- register the transfer of or exchange any debt securities so selected for redemption, in whole or in part, except the unredeemed portion of any debt securities we are redeeming in part.

Repurchases on the Open Market

We, or an affiliate of ours, may at any time or from time to time repurchase any debt security in the open market or otherwise. Such debt securities may, at our option (or our affiliate's option), be held, resold or surrendered to the trustee for cancellation.

Information Concerning the Debenture Trustee

The debenture trustee, other than during the occurrence and continuance of an event of default under an indenture, undertakes to perform only those duties as are specifically set forth in the applicable indenture. Upon an event of default under an indenture, the debenture trustee must use the same degree of care as a prudent person would exercise or use in the conduct of his or her own affairs. Subject to this provision, the debenture trustee is under no obligation to exercise any of the powers given him or her by the indentures at the request of any holder of debt securities unless he or she is offered reasonable security and indemnity against the costs, expenses and liabilities that he or she might incur.

Payment and Paying Agents

Unless we otherwise indicate in the applicable prospectus supplement, we will make payment of the interest on any debt securities on any interest payment date to the person in whose name the debt securities, or one or more predecessor securities, are registered at the close of business on the regular record date for the interest.

We will pay principal of and any premium and interest on the debt securities of a particular series at the office of the paying agents designated by us, except that unless we otherwise indicate in the applicable prospectus supplement, we will make interest payments by check that we will mail to the holder or by wire transfer to certain holders. Unless we otherwise indicate in a prospectus supplement, we will designate the corporate trust office of the debenture trustee in the City of New York as our sole paying agent for payments with respect to debt securities of each series. We will name in the applicable prospectus supplement any other paying agents that we initially designate for the debt securities of a particular series. We will maintain a paying agent in each place of payment for the debt securities of a particular series.

All money we pay to a paying agent or the debenture trustee for the payment of the principal of or any premium or interest on any debt securities that remains unclaimed at the end of two years after such principal, premium or interest has become due and payable will be repaid to us, and the holder of the debt security thereafter may look only to us for payment thereof.

Governing Law

The indentures and the debt securities will be governed by and construed in accordance with the laws of the State of New York, except to the extent that the Trust Indenture Act of 1939 is applicable.

Subordination of Subordinated Debt Securities

The subordinated debt securities will be unsecured and will be subordinate and junior in priority of payment to certain of our other indebtedness to the extent described in a prospectus supplement. The subordinated indenture does not limit the amount of subordinated debt securities that we may issue. It also does not limit us from issuing any other secured or unsecured debt.

Outstanding Debt Securities

On August 19, 2015, we issued to our stockholders non-interest bearing redeemable convertible notes (the "Convertible Notes") in the aggregate principal amount of \$37.0 million. The Convertible Notes do not bear interest. The principal amounts under the Convertible Notes are convertible, at the option of each noteholder, into cash or into shares of the Company's common stock at a conversion rate of \$9.19 per share, and are payable in cash, if not previously redeemed or converted, at maturity on February 19, 2018, the 30-month anniversary of the closing of the issuance of the Convertible Notes.

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On August 19, 2015, Targacept entered into an indenture (the “Convertible Notes Indenture”) with American Stock Transfer & Trust Company, LLC, as trustee, and an escrow agreement with American Stock Transfer & Trust Company, LLC and Delaware Trust Company, LLC, as escrow agent, under which \$37.0 million, which represents the initial principal amount of the Convertible Notes, was deposited in a segregated escrow account for the benefit of the holders of the notes in order to facilitate the payment of the Convertible Notes upon redemption or at maturity. The Convertible Notes are our secured obligation, and the Convertible Notes Indenture does not limit its other indebtedness, secured or unsecured.

Holders of the Convertible Notes may submit conversion notices, which are irrevocable, instructing the trustee to convert such the Convertible Notes into shares of the common stock at a conversion price of \$9.19 per share. Following each conversion date, we will issue the number of whole shares of common stock issuable upon conversion as promptly as practicable (and in any event within 10 business days). The trustee will in turn release to us the respective amount of restricted cash to cover the stock issuance.

As of March 1, 2016, Convertible Notes in an aggregate principal amount of approximately \$31.3 million remained outstanding, and there are no outstanding debt securities under the indenture filed herewith.

DESCRIPTION OF WARRANTS

The following description, together with the additional information we may include in any applicable prospectus supplements, summarizes the material terms and provisions of the warrants that we may offer under this prospectus and the related warrant agreements and warrant certificates. While the terms summarized below will apply generally to any warrants that we may offer, we will describe the particular terms of any series of warrants in more detail in the applicable prospectus supplement. The terms of any warrants offered under that prospectus supplement may differ from the terms described below.

The following summary description, together with the additional information we may include in any applicable prospectus supplements does not purport to be complete and is subject to, and qualified in its entirety by reference to, the form of warrant agreement and form of warrant certificate relating to each series of warrants that will be incorporated by reference as an exhibit to the registration statement that includes this prospectus or as an exhibit to a current report on Form 8-K if we offer warrants.

General

We will describe in the applicable prospectus supplement the terms of the series of warrants, including:

- the offering price and aggregate number of warrants offered;
- the currency for which the warrants may be purchased;
- if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each such security or each principal amount of such security;
- if applicable, the date on and after which the warrants and the related securities will be separately transferable;
- in the case of warrants to purchase common stock, the number of shares of common stock purchasable upon the exercise of one warrant and the price at which these shares may be purchased upon such exercise;
- the effect of any merger, consolidation, sale or other disposition of our business on the warrant agreements and the warrants;
- the terms of any rights to redeem or call the warrants;
- any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the warrants;
- the dates on which the right to exercise the warrants will commence and expire;
- the manner in which the warrant agreements and warrants may be modified;
- federal income tax consequences of holding or exercising the warrants;
- the terms of the securities issuable upon exercise of the warrants; and
- any other specific terms, preferences, rights or limitations of or restrictions on the warrants.

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Before exercising their warrants, holders of warrants will not have any of the rights of holders of the securities purchasable upon such exercise, including the right to receive dividends, if any, or, payments upon our liquidation, dissolution or winding up or to exercise voting rights, if any.

Exercise of Warrants

Each warrant will entitle the holder to purchase the securities that we specify in the applicable prospectus supplement at the exercise price that we describe in the applicable prospectus supplement. Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants at any time up to 5:00 P.M. Eastern Time on the expiration date that we set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

Holders of the warrants may exercise the warrants by delivering the warrant certificate representing the warrants to be exercised together with specified information, and paying the required amount to the warrant agent in immediately available funds, as provided in the applicable prospectus supplement. We will set forth on the reverse side of the warrant certificate and in the applicable prospectus supplement the information that the holder of the warrant will be required to deliver to the warrant agent.

Upon receipt of the required payment and the warrant certificate properly completed and duly executed at the corporate trust office of the warrant agent or any other office indicated in the applicable prospectus supplement, we will issue and deliver the securities purchasable upon such exercise. If fewer than all of the warrants represented by the warrant certificate are exercised, then we will issue a new warrant certificate for the remaining amount of warrants. If we so indicate in the applicable prospectus supplement, holders of the warrants may surrender securities as all or part of the exercise price for warrants.

Enforceability of Rights by Holders of Warrants

Any warrant agent will act solely as our agent under the applicable warrant agreement and will not assume any obligation or relationship of agency or trust with any holder of any warrant. A single bank or trust company may act as warrant agent for more than one issue of warrants. A warrant agent will have no duty or responsibility in case of any default by us under the applicable warrant agreement or warrant, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a warrant may, without the consent of the related warrant agent or the holder of any other warrant, enforce by appropriate legal action its right to exercise, and receive the securities purchasable upon exercise of, its warrants.

Outstanding Warrants

Old Catalyst previously issued (i) warrants to purchase shares of Series A convertible preferred stock in 2005 in connection with a loan, (ii) warrants to purchase shares of Series E convertible preferred stock in 2014 in connection with the issuance of Series E convertible preferred stock, and (iii) warrants to purchase shares of Series F convertible preferred stock in 2015 in connection with the issuance of convertible promissory notes. In connection with the merger, such warrants were assumed by us and are now exercisable, respectively, (i) at any time until the 7-year anniversary of the merger for an aggregate of 1,289 shares of our common stock at an exercise price of \$26.18 per share, (ii) at any time until the 5-year anniversary of the original date of issuance for an aggregate of 37,554 shares of our common stock at an exercise price of \$33.27 per share, and (iii) at any time until the 5-year anniversary of the original date of issuance for an aggregate of 142,111 shares of our common stock at an exercise price of for \$3.33 per share.

DESCRIPTION OF UNITS

The following description, together with the additional information we may include in any applicable prospectus supplements, summarizes the material terms and provisions of the units that we may offer under this prospectus. While the terms we have summarized below will apply generally to any units that we may offer under this prospectus, we will describe the particular terms of any series of units in more detail in the applicable prospectus supplement. The terms of any units offered under a prospectus supplement may differ from the terms described below.

The following summary description, together with the additional information we may include in any applicable prospectus supplements does not purport to be complete and is subject to, and qualified in its entirety by reference to, the form of unit agreement and form of unit certificate relating to each series of units that will be incorporated by reference as an exhibit to the registration statement that includes this prospectus or as an exhibit to a current report on Form 8-K if we offer units.

General

We may issue units comprised of common stock, preferred stock, debt securities, debt obligations of third parties, including U.S. treasury securities, warrants or any combination thereof. Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit. Thus, the holder of a unit will have the rights and obligations of a holder of each included security. The unit agreement under which a unit is issued may provide that the securities included in the unit may not be held or transferred separately, at any time or at any time before a specified date.

We will describe in the applicable prospectus supplement the terms of the series of units, including:

- the designation and terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- any provisions of the governing unit agreement that differ from those described below; and
- any provisions for the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units.

The provisions described in this section, as well as those described under “Description of Capital Stock,” “Description of Debt Securities” and “Description of Warrants” will apply to each unit and to any common stock, preferred stock, debt security or warrants included in each unit, respectively.

Issuance in Series

We may issue units in such amounts and in such numerous distinct series as we determine.

Enforceability of Rights by Holders of Units

Any unit agent will act solely as our agent under the applicable unit agreement and will not assume any obligation or relationship of agency or trust with any holder of any unit. A single bank or trust company may act as unit agent for more than one series of units. A unit agent will have no duty or responsibility in case of any default by us under the applicable unit agreement or unit, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a unit may, without the consent of the related unit agent or the holder of any other unit, enforce by appropriate legal action its rights as holder under any security included in the unit.

Title

We, any unit agents and any of their agents may treat the registered holder of any unit certificate as an absolute owner of the units evidenced by that certificate for any purpose and as the person entitled to exercise the rights attaching to the units so requested, despite any notice to the contrary. See “Legal Ownership of Securities” below.

Outstanding Units

We have no outstanding units.

LEGAL OWNERSHIP OF SECURITIES

We can issue securities in registered form or in the form of one or more global securities. We describe global securities in greater detail below. We refer to those persons who have securities registered in their own names on the books that we or any applicable trustee, depositary or warrant agent maintain for this purpose as the “holders” of those securities. These persons are the legal holders of the securities. We refer to those persons who, indirectly through others, own beneficial interests in securities that are not registered in their own names, as “indirect holders” of those securities. As we discuss below, indirect holders are not legal holders, and investors in securities issued in book-entry form or in street name will be indirect holders.

Book-Entry Holders

We may issue securities in book-entry form only, as we will specify in the applicable prospectus supplement. This means securities may be represented by one or more global securities registered in the name of a financial institution that holds them as depository on behalf of other financial institutions that participate in the depository's book-entry system. These participating institutions, which are referred to as participants, in turn, hold beneficial interests in the securities on behalf of themselves or their customers.

Only the person in whose name a security is registered is recognized as the holder of that security. Securities issued in global form will be registered in the name of the depository or its participants. Consequently, for securities issued in global form, we will recognize only the depository as the holder of the securities, and we will make all payments on the securities to the depository. The depository passes along the payments it receives to its participants, which in turn pass the payments along to their customers who are the beneficial owners. The depository and its participants do so under agreements they have made with one another or with their customers; they are not obligated to do so under the terms of the securities.

As a result, investors in a book-entry security will not own securities directly. Instead, they will own beneficial interests in a global security, through a bank, broker or other financial institution that participates in the depository's book-entry system or holds an interest through a participant. As long as the securities are issued in global form, investors will be indirect holders, and not holders, of the securities.

Street Name Holders

We may terminate a global security or issue securities in non-global form. In these cases, investors may choose to hold their securities in their own names or in "street name." Securities held by an investor in street name would be registered in the name of a bank, broker or other financial institution that the investor chooses, and the investor would hold only a beneficial interest in those securities through an account he or she maintains at that institution.

For securities held in street name, we will recognize only the intermediary banks, brokers and other financial institutions in whose names the securities are registered as the holders of those securities, and we will make all payments on those securities to them. These institutions pass along the payments they receive to their customers who are the beneficial owners, but only because they agree to do so in their customer agreements or because they are legally required to do so. Investors who hold securities in street name will be indirect holders, not holders, of those securities.

Legal Holders

Our obligations, as well as the obligations of any applicable trustee and of any third parties employed by us or a trustee, run only to the legal holders of the securities. We do not have obligations to investors who hold beneficial interests in global securities, in street name or by any other indirect means. This will be the case whether an investor chooses to be an indirect holder of a security or has no choice because we are issuing the securities only in global form.

For example, once we make a payment or give a notice to the holder, we have no further responsibility for the payment or notice even if that holder is required, under agreements with depository participants or customers or by law, to pass it along to the indirect holders but does not do so. Similarly, we may want to obtain the approval of the holders to amend an indenture, to relieve us of the consequences of a default or of our obligation to comply with a particular provision of the indenture or for other purposes. In such an event, we would seek approval only from the holders, and not the indirect holders, of the securities. Whether and how the holders contact the indirect holders is up to the holders.

Special Considerations for Indirect Holders

If you hold securities through a bank, broker or other financial institution, either in book-entry form or in street name, you should check with your own institution to find out:

- how it handles securities payments and notices;
- whether it imposes fees or charges;
- how it would handle a request for the holders' consent, if ever required;
- whether and how you can instruct it to send you securities registered in your own name so you can be a holder, if that is permitted in the future;

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- how it would exercise rights under the securities if there were a default or other event triggering the need for holders to act to protect their interests; and
- if the securities are in book-entry form, how the depository's rules and procedures will affect these matters.

Global Securities

A global security is a security that represents one or any other number of individual securities held by a depository. Generally, all securities represented by the same global securities will have the same terms.

Each security issued in book-entry form will be represented by a global security that we deposit with and register in the name of a financial institution or its nominee that we select. The financial institution that we select for this purpose is called the depository. Unless we specify otherwise in the applicable prospectus supplement, American Stock Transfer and Trust Company, LLC, New York, New York, will be the depository for all securities issued in book-entry form.

A global security may not be transferred to or registered in the name of anyone other than the depository, its nominee or a successor depository, unless special termination situations arise. We describe those situations below under "Special Situations When a Global Security Will Be Terminated." As a result of these arrangements, the depository, or its nominee, will be the sole registered owner and holder of all securities represented by a global security, and investors will be permitted to own only beneficial interests in a global security. Beneficial interests must be held by means of an account with a broker, bank or other financial institution that in turn has an account with the depository or with another institution that does. Thus, an investor whose security is represented by a global security will not be a holder of the security, but only an indirect holder of a beneficial interest in the global security.

If the prospectus supplement for a particular security indicates that the security will be issued in global form only, then the security will be represented by a global security at all times unless and until the global security is terminated. If termination occurs, we may issue the securities through another book-entry clearing system or decide that the securities may no longer be held through any book-entry clearing system.

Special Considerations for Global Securities

As an indirect holder, an investor's rights relating to a global security will be governed by the account rules of the investor's financial institution and of the depository, as well as general laws relating to securities transfers. We do not recognize an indirect holder as a holder of securities and instead deal only with the depository that holds the global security.

If securities are issued only in the form of a global security, an investor should be aware of the following:

- An investor cannot cause the securities to be registered in his or her name, and cannot obtain non-global certificates for his or her interest in the securities, except in the special situations we describe below;
- An investor will be an indirect holder and must look to his or her own bank or broker for payments on the securities and protection of his or her legal rights relating to the securities, as we describe above;
- An investor may not be able to sell interests in the securities to some insurance companies and to other institutions that are required by law to own their securities in non-book-entry form;
- An investor may not be able to pledge his or her interest in a global security in circumstances where certificates representing the securities must be delivered to the lender or other beneficiary of the pledge in order for the pledge to be effective;
- The depository's policies, which may change from time to time, will govern payments, transfers, exchanges and other matters relating to an investor's interest in a global security. We and any applicable trustee have no responsibility for any aspect of the depository's actions or for its records of ownership interests in a global security. We and the trustee also do not supervise the depository in any way;
- The depository may, and we understand that AST will, require that those who purchase and sell interests in a global security within its book-entry system use immediately available funds, and your broker or bank may require you to do so as well; and
- Financial institutions that participate in the depository's book-entry system, and through which an investor holds its interest in a global security, may also have their own policies affecting payments, notices and other matters relating to the securities.

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There may be more than one financial intermediary in the chain of ownership for an investor. We do not monitor and are not responsible for the actions of any of those intermediaries.

Special Situations When a Global Security Will Be Terminated

In a few special situations described below, the global security will terminate and interests in it will be exchanged for physical certificates representing those interests. After that exchange, the choice of whether to hold securities directly or in street name will be up to the investor. Investors must consult their own banks or brokers to find out how to have their interests in securities transferred to their own name, so that they will be direct holders. We have described the rights of holders and street name investors above.

The global security will terminate when the following special situations occur:

- if the depositary notifies us that it is unwilling, unable or no longer qualified to continue as depositary for that global security and we do not appoint another institution to act as depositary within 90 days;
- if we notify any applicable trustee that we wish to terminate that global security; or
- if an event of default has occurred with regard to securities represented by that global security and has not been cured or waived.

The prospectus supplement may also list additional situations for terminating a global security that would apply only to the particular series of securities covered by the prospectus supplement. When a global security terminates, the depositary, and not we or any applicable trustee, is responsible for deciding the names of the institutions that will be the initial direct holders.

PLAN OF DISTRIBUTION

We may sell the securities being offered by this prospectus separately or together through any of the following methods:

- to or through one or more underwriters or dealers in a public offering and sale by them;
- directly to investors;
- through agents;
- through block trades in which the broker or dealer engaged to handle the block trade will attempt to sell the securities as agent, but may position and resell a portion of the block as principal to facilitate the transaction;
- through any combination of these methods of sale; or
- in any manner, as provided in the applicable prospectus supplement.

We may distribute securities from time to time in one or more transactions:

- at a fixed price or prices, which may be changed;
- at market prices prevailing at the times of sale;
- at prices related to such prevailing market prices; or
- at negotiated prices.

We will describe the method of distribution of the securities in the applicable prospectus supplement. We may also determine the price or other terms of the securities offered under this prospectus by use of an electronic auction. We will describe how any auction will determine the price or any other terms, how potential investors may participate in the auction and the nature of the obligations of the underwriter, dealer or agent in the applicable prospectus supplement.

Unless otherwise specified in the applicable prospectus supplement, each class or series of securities will be a new issue with no established trading market, other than our common stock, which is traded on the NASDAQ Capital Market. We may elect to list any other class or series of securities on any exchange, but we are not obligated to do so. It is possible that one or more underwriters may make a market in a class or series of securities, but the underwriters will not be obligated to do so and may discontinue any market making at any time without notice. We cannot give any assurance as to the liquidity of the trading market for any of the securities.

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Underwriters, dealers or agents may receive compensation in the form of discounts, concessions or commissions from us or our purchasers (as their agents in connection with the sale of the securities). In addition, underwriters may sell the securities to or through dealers, and those dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters and/or commissions from the purchasers for whom they act as agent. These underwriters, dealers or agents may be considered to be underwriters under the Securities Act. As a result, discounts, commissions, or profits on resale received by the underwriters, dealers or agents may be treated as underwriting discounts and commissions. The prospectus supplement will identify any such underwriter, dealer or agent, and describe any compensation received by them from us. Only underwriters named in the prospectus supplement are underwriters of the securities offered by the prospectus supplement. Any initial public offering price and any discounts or concessions allowed or reallocated or paid to dealers may be changed from time to time.

We may sell the securities directly or through agents we designate from time to time. We will name any agent involved in the offering and sale of securities and we will describe any commissions we will pay the agent in the prospectus supplement. Unless the prospectus supplement states otherwise, our agent will act on a best-efforts basis for the period of its appointment.

We may authorize agents or underwriters to solicit offers by certain types of institutional investors to purchase securities from us at the public offering price set forth in the prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on a specified date in the future. We will describe the conditions to these contracts and the commissions we must pay for solicitation of these contracts in the prospectus supplement.

Underwriters, dealers and agents may be entitled to indemnification by us against certain civil liabilities, including liabilities under the Securities Act, or to contribution with respect to payments made by the underwriters, dealers or agents, under agreements between us and the underwriters, dealers and agents.

Any person participating in the distribution of common stock registered under the registration statement that includes this prospectus will be subject to applicable provisions of the Exchange Act, and the applicable SEC rules and regulations, including, among others, Regulation M, which may limit the timing of purchases and sales of any of our common stock by any such person. Furthermore, Regulation M may restrict the ability of any person engaged in the distribution of our common stock to engage in market-making activities with respect to our common stock. These restrictions may affect the marketability of our common stock and the ability of any person or entity to engage in market-making activities with respect to our common stock.

We may grant underwriters who participate in the distribution of the securities an option to purchase additional securities to cover overallocments, if any, in connection with the distribution. Any underwriter may engage in overallocation, stabilizing transactions, short-covering transactions and penalty bids in accordance with Regulation M that stabilize, maintain or otherwise affect the price of the offered securities. Overallocation involves sales in excess of the offering size, which create a short position. Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum. Short covering transactions involve purchases of the common stock in the open market after the distribution is completed to cover short positions. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the common stock originally sold by the dealer is purchased in a covering transaction to cover short positions. Those activities may cause the price of the common stock to be higher than it would otherwise be. If commenced, the underwriters may discontinue any of the activities at any time. If any such activities will occur, they will be described in the applicable prospectus supplement.

Underwriters or agents and their associates may be customers of, engage in transactions with or perform services for us in the ordinary course of business and any such relationships will be described in the applicable prospectus supplement.

If more than 10% of the net proceeds of any offering of securities made under this prospectus will be received by the Financial Industry Regulatory Authority ("FINRA") members participating in the offering or affiliates or associated persons of such FINRA members, the offering will be conducted in accordance with FINRA Conduct Rule 5110(h).

To the extent required, this prospectus may be amended or supplemented from time to time to describe a specific plan of distribution.

LEGAL MATTERS

The validity of the securities being offered by this prospectus will be passed upon by Morrison & Foerster LLP of Palo Alto, CA. Additional legal matters may be passed upon for us or any underwriters, dealers or agents, by counsel that we will name in an applicable prospectus supplement.

EXPERTS

The consolidated balance sheets of Catalyst Biosciences, Inc. as of December 31, 2015 and 2014, and the related consolidated statements of operations, comprehensive loss, convertible preferred stock and stockholders' equity (deficit) and cash flows for each of the years in the three-year period ended December 31, 2015, have been audited by EisnerAmper LLP, independent registered public accounting firm, as stated in their report which is incorporated herein by reference. Such financial statements have been incorporated herein by reference in reliance on the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We are a reporting company and file annual, quarterly and current reports, proxy statements and other information with the Securities and Exchange Commission, or the SEC. You may read and copy these reports, proxy statements and other information at the SEC's public reference rooms at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You can request copies of these documents by writing to the SEC and paying a fee for the copying cost. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the public reference rooms. Our SEC filings are also available at the SEC's website at www.sec.gov and our website at www.durect.com. We have not incorporated by reference into this prospectus the information contained on our website and you should not consider it to be part of this prospectus. In addition, you can read and copy our SEC filings at the office of the National Association of Securities Dealers, Inc. at 1735 K Street, Washington, D.C. 20006.

We have filed a registration statement on Form S-3 with the SEC relating to the securities covered by this prospectus. This prospectus is a part of the registration statement and does not contain all of the information in the registration statement. You may review a copy of the registration statement at the SEC's public reference room in Washington, D.C., as well as through the SEC's Internet site at www.sec.gov.

The SEC allows us to "incorporate by reference" the information we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus. In addition, information we file with the SEC in the future will automatically update and supersede information contained in this prospectus and any accompanying prospectus supplement.

This prospectus incorporates by reference the documents set forth below that we have previously filed with the SEC:

- our Annual Report on Form 10-K for the year ended December 31, 2015 filed with the SEC on March 9, 2016; and
- our Current Report on Form 8-K filed with the SEC on January 29, 2016.

We also incorporate by reference into this prospectus additional documents that we may file with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, excluding, in each case, information deemed furnished and not filed until we sell all of the securities we are offering. Any statements contained in a previously filed document incorporated by reference into this prospectus is deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus, or in a subsequently filed document also incorporated by reference herein, modifies or supersedes that statement.

We will provide to you at no cost a copy of any and all of the information incorporated by reference into the registration statement of which this prospectus is a part. You may make a request for copies of this information in writing or by telephone. Requests should be directed to:

Catalyst Biosciences, Inc.
260 Littlefield Ave.
South San Francisco, CA 94080
Attn: Fletcher Payne, Chief Financial Officer
(650) 871-0761

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The information in this prospectus supplement is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus supplement is not an offer to sell these securities, and we are not soliciting offers to buy these securities, in any state or other jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED MARCH 16, 2016

PROSPECTUS SUPPLEMENT



**Up to \$6,500,000
Common Stock**

Catalyst Biosciences, Inc. ("Catalyst") has entered into a Capital on Demand™ Sales Agreement with JonesTrading Institutional Services LLC ("JonesTrading"), or the sales agreement, relating to shares of our common stock, par value \$0.001, offered by this prospectus supplement. In accordance with the terms of the sales agreement, we may offer and sell shares of our common stock having an aggregate offering price of up to \$6,500,000 from time to time through JonesTrading, acting as agent. Sales of our common stock, if any, under this prospectus supplement may be made in sales deemed to be "at-the-market" equity offerings as defined in Rule 415 promulgated under the Securities Act of 1933, as amended, or the Securities Act, including sales made directly on or through the NASDAQ Capital Market, the existing trading market for our common stock, sales made to or through a market maker other than on an exchange or otherwise, in negotiated transactions at market prices prevailing at the time of sale or at prices related to such prevailing market prices, and/or any other method permitted by law, including in privately negotiated transactions.

Our common stock trades on the NASDAQ Capital Market under the symbol "CBIO." On March 1, 2016, the last reported sale price of the common stock on the NASDAQ Capital Market was \$2.15 per share.

JonesTrading will act as sales agent and use commercially reasonable efforts consistent with its normal trading and sales practices to sell on our behalf all of the shares of common stock requested to be sold by us, on mutually agreed terms between JonesTrading and us. There is no arrangement for funds to be received in any escrow, trust or similar arrangement. JonesTrading will be entitled to compensation at a fixed commission rate of 3% of the gross sales price per share sold. In connection with the sale of our common stock on our behalf, JonesTrading will be deemed to be an "underwriter" within the meaning of the Securities Act and the compensation of JonesTrading will be deemed to be underwriting commissions or discounts.

As of January 26, 2016, the aggregate market value of our outstanding common stock held by non-affiliates, or the public float, was approximately \$20.8 million based on 11,430,104 shares of outstanding stock, of which 9,035,828 are held by non-affiliates, and a per share price of \$2.30, which was the closing sale price of our common stock on January 26, 2016. Pursuant to General Instruction I.B.6 of Form S-3, in no event will we sell our common stock in a public primary offering with a value exceeding more than one-third of our public float in any 12-month period so long as our public float remains below \$75,000,000. We have not offered any securities pursuant to General Instruction I.B.6 of Form S-3 during the prior 12 calendar month period that ends on and includes the date of this prospectus. As of January 26, 2016, one-third of our public float is equal to approximately \$6.9 million.

INVESTING IN OUR SECURITIES INVOLVES A HIGH DEGREE OF RISK. YOU SHOULD CAREFULLY READ AND CONSIDER THE RISK FACTORS DESCRIBED IN THIS PROSPECTUS SUPPLEMENT, THE ACCOMPANYING PROSPECTUS AND IN THE DOCUMENTS INCORPORATED BY REFERENCE INTO THIS PROSPECTUS SUPPLEMENT. SEE "[RISK FACTORS](#)" BEGINNING ON PAGE S-4.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement is truthful or complete. Any representation to the contrary is a criminal offense.



The date of this prospectus supplement is _____, 2016

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we have filed with the Securities and Exchange Commission, or SEC, utilizing a “shelf” registration process. Under the shelf registration process, we may offer shares of our common stock having an aggregate offering price of up to \$50,000,000 from time to time under this prospectus supplement at prices and on terms to be determined by market conditions at the time of offering.

We provide information to you about this offering of shares of our common stock in two separate documents that are bound together: (1) this sales agreement prospectus supplement, which describes the specific details regarding this offering; and (2) the accompanying base prospectus, which provides general information, some of which may not apply to this offering. Generally, when we refer to this “prospectus,” we are referring to both documents combined. If information in this sales agreement prospectus supplement is inconsistent with the accompanying base prospectus, you should rely on this prospectus supplement. However, if any statement in one of these documents is inconsistent with a statement in another document having a later date—for example, a document incorporated by reference in this prospectus—the statement in the document having the later date modifies or supersedes the earlier statement as our business, financial condition, results of operations and prospects may have changed since the earlier dates.

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference herein were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreement, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

You should rely only on the information contained in, or incorporated by reference into, this prospectus and in any free writing prospectus that we may authorize for use in connection with this offering. We have not, and JonesTrading has not, authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. We are not, and JonesTrading is not, making an offer to sell or soliciting an offer to buy our securities in any jurisdiction in which an offer or solicitation is not authorized or in which the person making that offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make an offer or solicitation. You should assume that the information appearing in this prospectus, the documents incorporated by reference into this prospectus, and in any free writing prospectus that we may authorize for use in connection with this offering, is accurate only as of the date of those respective documents. Our business, financial condition, results of operations and prospects may have changed since those dates. You should read this prospectus, the documents incorporated by reference into this prospectus, and any free writing prospectus that we may authorize for use in connection with this offering, in their entirety before making an investment decision. You should also read and consider the information in the documents to which we have referred you in the sections of this prospectus entitled “Where You Can Find More Information” and “Incorporation of Certain Documents By Reference.”

We are offering to sell, and seeking offers to buy, shares of common stock only in jurisdictions where offers and sales are permitted. The distribution of this prospectus and the offering of the common stock in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the common stock and the distribution of this prospectus outside the United States. This prospectus does not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

For purposes of this prospectus, references to the terms “Catalyst,” “the Company,” “we,” “us” and “our” refer to Catalyst Biosciences, Inc., unless the context otherwise requires.

This prospectus and the information incorporated by reference herein and therein include trademarks, service marks and trade names owned by us or other companies. All trademarks, service marks and trade names included or incorporated by reference into this prospectus are the property of their respective owners.

PROSPECTUS SUMMARY

The following summary highlights certain information contained elsewhere in this prospectus supplement, the accompanying base prospectus, any free writing prospectus that we have been authorized to use and the documents incorporated by reference herein and in the accompanying base prospectus. This summary does not contain all the information you will need in making your investment decision. You should carefully read this entire prospectus supplement the accompanying base prospectus, any free writing prospectus that we have been authorized to use and the documents incorporated by reference herein and in the accompanying base prospectus. You should pay special attention to the “Risk Factors” section of this prospectus and the financial statements and other information incorporated by reference in this prospectus.

Company Overview

We are a clinical-stage biopharmaceutical company focused on creating and developing novel medicines to address serious medical conditions. To date, we have focused our product development efforts in the fields of hemostasis, including the treatment of hemophilia and surgical bleeding, and inflammation, including prevention of delayed graft function in renal transplants and the treatment of dry age-related macular degeneration, a condition that can cause visual impairment or blindness for which there are no approved treatments. Our most advanced program is an improved next-generation coagulation Factor VIIa variant, CB 813d, that has successfully completed a Phase 1 clinical trial in severe hemophilia A and B patients. In addition to our lead Factor VIIa program, we have two other next-generation coagulation factors, a Factor IX variant, CB 2679d/ISU 304, that is in advanced preclinical development, and a Factor Xa variant, that has reached the advanced lead preclinical stage of development. Proteases regulate several complex biological cascades, or sequenced biochemical reactions, including the coagulation cascade that controls bleeding (hemostasis) in hemophilia and non-hemophilia settings and the complement cascade that causes inflammation and tissue damage in certain diseases.

Additional details of these programs and related strategic agreements are contained in our annual report on Form 10-K for the year ended December 31, 2015.

Company Information

Our corporate headquarters are located in South San Francisco, California 94080. Our telephone number is (650) 266-8674, and our website address is www.catalystbiosciences.com. The information on or accessible through our website does not constitute part of this prospectus supplement or the accompanying prospectus and should not be relied upon in connection with making any investment in our securities.

The common stock of Catalyst is listed on NASDAQ under symbol “CBIO.”

THE OFFERING

Common stock to be offered by us	Shares of our common stock having an aggregate offering price of up to \$6,500,000
Common shares to be outstanding after this offering	14,453,340
Manner of offering	An “at-the-market” offering of shares of common stock that may be made from time to time through our sales agent, JonesTrading Institutional Services LLC. See “Plan of Distribution” on page S-9.
Use of proceeds	We intend to use the net proceeds primarily for general corporate purposes, which may include clinical trials, research and development activities, capital expenditures, selling, general and administrative costs, facilities expansion and to meet working capital needs. See “Use of Proceeds” on page S-7.
NASDAQ Capital Market symbol	“CBIO.”
Risk factors	Before investing in our common stock, you should carefully read and consider the “Risk Factors” beginning on page S-4 of this prospectus, and the risks set forth under the caption of Item 1A Risk Factors included in our most recent Annual Report on Form 10-K for the year ended December 31, 2015, and any documents incorporated by reference, for certain considerations relevant to an investment in our common stock.

The number of shares of common stock to be outstanding after this offering is based on 11,430,085 shares of common stock outstanding as of December 31, 2015 and a total offering of an aggregate of 3,023,255 shares of our common stock at a public offering price of \$2.15 per share, which was the last reported sale price of our common stock on the NASDAQ Capital Market on March 1, 2016, and excludes as of December 31, 2015:

- 2,199,509 shares of common stock issuable upon the exercise of stock options outstanding at a weighted average exercise price of \$9.84 per share, and 103,129 additional shares of common stock reserved for issuance under our stock option plan; and
- 180,954 shares of common stock issuable upon the exercise of warrants outstanding at a weighted exercise price of \$9.70 per share; and
- 3,672,095 shares of common stock issuable upon conversion of redeemable convertible notes at a rate of \$9.19 per share.

RISK FACTORS

Investing in our securities involves a high degree of risk. You should carefully consider the specific risks described below and the risks described in our Annual Report on Form 10-K for the year ended December 31, 2015, which are incorporated by reference in this prospectus in their entirety, as well as the other information contained in this prospectus and the other documents incorporated by reference, before making an investment decision. See the sections of this prospectus entitled “Where You Can Find More Information” and “Incorporation of Certain Information By Reference.” Any of the risks we describe below or in the information incorporated herein by reference in this prospectus could cause our business, financial condition or operating results to suffer. The market price of our common stock could decline if one or more of these risks and uncertainties develop into actual events. You could lose all or part of your investment.

A substantial number of shares may be sold in the market following this offering, which may depress the market price for our common stock.

Sales of a substantial number of shares of our common stock in the public market following this offering could cause the market price of our common stock to decline. Although there can be no assurance that all \$6,500,000 worth of shares being offered under this prospectus will be sold or the price at which any such shares might be sold, assuming that an aggregate of 3,023,255 shares of our common stock are sold during the term of the sales agreement with JonesTrading, in each case, for example, at a price of \$2.15 per share, the last reported sale price of our common stock on the NASDAQ Capital Market on March 1, 2016, upon completion of this offering, based on our shares outstanding as of December 31, 2015, we will have outstanding an aggregate of 14,453,340 shares of common stock, assuming no exercise of outstanding stock options and no purchases of stock under our employee stock incentive plan. A substantial majority of the outstanding shares of our common stock are, and all of the shares sold in this offering upon issuance will be, freely tradable without restriction or further registration under the Securities Act of 1933, as amended, or the Securities Act, unless these shares are owned or purchased by “affiliates” as that term is defined in Rule 144 under the Securities Act. In addition, we have also registered all of the shares of common stock that we may issue under our outstanding stock options and employee stock incentive plans, and as of December 31, 2015, 2,199,509 shares of common stock were issuable upon the exercise of outstanding stock options at a weighted average exercise price of \$9.84 per share, 103,129 additional shares of common stock were reserved for issuance under our stock option plan, 180,954 shares of common stock were issuable upon the exercise of outstanding warrants at a weighted exercise price of \$9.70 per share, and 3,672,095 shares of common stock issuable upon conversion of redeemable convertible notes at a rate of \$9.19 per share. As a result, these shares can be freely sold in the public market upon issuance, subject to restrictions under the securities laws.

Management will have broad discretion as to the use of proceeds from this offering and we may use the net proceeds in ways with which you may disagree.

We intend to use the net proceeds of this offering for general corporate purposes, which may include clinical trials, research and development activities, capital expenditures, facilities expansion and working capital needs. Our management will have broad discretion in the application of the net proceeds from this offering and could spend the proceeds in ways that do not improve our results of operations or enhance the value of our common stock. Accordingly, you will be relying on the judgment of our management with regard to the use of net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. Our failure to apply these funds effectively could have a material adverse effect on our business, delay the development of our product candidates and cause the price of our common stock to decline.

You may experience future dilution as a result of this offering, future equity offerings or other equity issuances.

If you invest in our common stock, your interest may be diluted. Dilution per share to new investors in this offering represents the amount, if any, by which the price per share paid by purchasers for our common stock in this offering exceeds the net tangible book value per share of our common stock following the issuance of stock in this offering, any future equity offering or any other equity issuances.

After giving effect to the sale of shares of common stock offered by this prospectus at an assumed public offering price of \$2.15 per share (the last reported sale price of our common stock on the NASDAQ Capital Market on March 1, 2016), and after deducting commissions and estimated aggregate offering expenses payable by us, our as adjusted net tangible book value as of December 31, 2015 would have been approximately \$37.6 million, or approximately \$2.60 per share. As a result, new investors would not experience dilution from this offering. However, the shares sold in this offering, if any, will be sold from time to time at various prices, which may result in dilution to new investors. For example, an increase of \$1.00 per share in the price at which the shares are sold from the assumed offering price of \$2.15 per share, assuming all of our common stock in the aggregate amount of \$6.5 million is sold at that price, would increase our as adjusted net tangible book value per share after the offering to \$3.00 per share, after deducting commissions and estimated aggregate offering expenses payable by us, resulting in an immediate dilution to new investors purchasing at that price of \$0.15 per share. The foregoing information discussed above is illustrative only, and will adjust based on the actual public offering price and other terms of this offering determined at pricing.

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In addition, in order to raise additional capital, we may in the future offer and issue additional shares of our common stock or other securities convertible into or exchangeable for our common stock. We cannot assure you that we will be able to sell shares or other securities in any other offering at a price per share that is equal to or greater than the price per share paid by investors in this offering, and investors purchasing shares or other securities in the future could have rights superior to existing stockholders. The price per share at which we sell additional shares of our common stock or other securities convertible into or exchangeable for our common stock in future transactions may be higher or lower than the price per share in this offering. For example, as of December 31, 2015, an aggregate of 103,129 shares of common stock were reserved and available for future grant under our option plan. Also as of such date, options to purchase 2,199,509 shares of our common stock were outstanding. You may incur dilution upon the grant of any shares pursuant to such plan, upon vesting of any stock awards under any such plan, or upon exercise of any such outstanding options.

We do not anticipate paying dividends on our common stock in the foreseeable future.

We currently plan to invest all available funds, including the proceeds from this offering, and future earnings, if any, in the development and growth of our business. We currently do not anticipate paying any cash dividends on our common stock in the foreseeable future. As a result, a rise in the market price of our common stock, which is uncertain and unpredictable, will be your sole source of potential gain in the foreseeable future, and you should not rely on an investment in our common stock for dividend income.

CAUTIONARY NOTE REGARDING FORWARD LOOKING INFORMATION

This prospectus and the documents we incorporate by reference in this prospectus contains forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. All statements, other than statements of historical facts, included or incorporated in this prospectus regarding our strategy, future operations, financial position, future revenues, projected costs, prospects, plans and objectives of management are forward-looking statements. We may, in some cases, use words such as “believe,” “anticipate,” “should,” “intend,” “plan,” “will,” “estimate,” “project,” “expect” and similar expressions, although not all forward-looking statements contain these identifying words. These statements are based on assumptions and assessments made by our management in light of its experience and its perception of historical trends, current conditions, expected future developments and other factors our management believes to be appropriate. These forward-looking statements are subject to a number of risks and uncertainties, including those risks described or incorporated by reference in this prospectus under “Risk Factors” above.

Forward-looking statements included or incorporated by reference in this prospectus include, for example, statements about:

- the strategies, prospects, plans, expectations or objectives of management for future operations;
- the progress, scope or duration of the development of product candidates or programs;
- the benefits that may be derived from product candidates or the commercial or market opportunity in any target indication;
- our ability to protect intellectual property rights;
- our anticipated operations, financial position, revenues, costs or expenses, statements regarding future economic conditions or performance;
- potential regulatory filings for or approval of any of our product candidates;
- the progress of our third-party collaborations, including estimated milestones;
- our intention to seek, and the ability to enter into strategic alliances and collaborations;
- the responsibilities of our collaborators, including the responsibility to make cost reimbursement, milestone, royalty and other payments to us, and our expectations regarding our collaborators’ plans with respect to our products;
- our responsibilities to our collaborators, including our responsibilities to conduct research and development, clinical trials and manufacture products;
- the results and timing of clinical trials and the possible commencement of future clinical trials;
- conditions for obtaining regulatory approval of our product candidates;
- submission and timing of applications for regulatory approval;
- the impact of FDA and other government regulations on our business;
- uncertainties associated with obtaining and protecting patents and other intellectual property rights, as well as avoiding the intellectual property rights of others;
- products and companies that will compete with the products we license to third-party collaborators;

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- the possibility we may commercialize our own products and build up our commercial, sales and marketing capabilities and other required infrastructure;
- our employees, including the number of employees and the continued service of key management, technical and scientific personnel;
- our future performance and our expectations regarding our ability to achieve profitability;
- requirements for us to purchase supplies and raw materials from third parties, and the ability of third parties to provide us with required supplies and raw materials;
- sufficiency of our cash resources, anticipated capital requirements and capital expenditures and our need for additional financing;
- the composition of future revenues;
- accounting policies and estimates, including revenue recognition policies; and
- statements of belief and any statement of assumptions underlying any of the foregoing.

Any such forward-looking statements are not guarantees of future performance and actual results, developments and business decisions may differ from those contemplated by such forward-looking statements. We disclaim any duty to update any forward-looking statements. You should also carefully consider other information set forth in reports or other documents that we file with the Securities and Exchange Commission.

USE OF PROCEEDS

The amount of proceeds from this offering will depend upon the number of shares of our common stock sold and the market price at which they are sold. There can be no assurance that we will be able to sell any shares under or fully utilize the sales agreement with JonesTrading as a source of financing. We intend to use the net proceeds, if any, from the sale of the shares of common stock under this prospectus for general corporate purposes, which may include clinical trials, research and development activities, capital expenditures, selling, general and administrative costs, facilities expansion, and to meet working capital needs. We expect from time to time to evaluate the acquisition of businesses, products and technologies for which a portion of the net proceeds may be used, although we currently are not planning or negotiating any such transactions.

The amounts actually expended for each purpose may vary significantly depending upon numerous factors, including the amount and timing of the proceeds from this offering and progress with the development of our products. Expenditures will also depend upon the establishment of collaborative arrangements with other companies, the availability of additional financing and other factors. Investors will be relying on the judgment of our management regarding the application of the proceeds of any sale of shares of our common stock.

As of the date of this prospectus, we cannot specify with certainty all of the particular uses of the proceeds from this offering. Accordingly, we will retain broad discretion over the use of such proceeds. Pending the use of the net proceeds from this offering as described above, we intend to invest the net proceeds in investment-grade, interest-bearing securities.

PRICE RANGE OF COMMON STOCK

Our common stock has been traded on the NASDAQ Capital Market under the symbol "CBIO" since the merger. Prior to the merger, our common stock traded on the NASDAQ Global Select Market under the symbol "TRGT" since our public offering on April 12, 2006. The following table sets forth, for the periods indicated, the high and low sales prices for our common stock as reported by the NASDAQ Capital Market. This table has been adjusted to reflect a 7-for-1 reverse stock split of our common stock in connection with, and prior to the completion of the merger:

<u>Year ended December 31, 2016</u>	<u>Common Stock Price</u>	
	<u>Low</u>	<u>High</u>
First Quarter (through March 15, 2016)	\$1.86	\$ 3.15
<u>Year ended December 31, 2015</u>	<u>Low</u>	<u>High</u>
First Quarter	\$2.50	\$ 3.05
Second Quarter	2.26	2.91
Third Quarter	2.21	11.80
Fourth Quarter	2.00	5.69

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<u>Year ended December 31, 2014</u>	<u>Low</u>	<u>High</u>
First Quarter	\$4.08	\$5.18
Second Quarter	3.61	4.79
Third Quarter	2.49	3.94
Fourth Quarter	2.32	2.78

The closing sale price of our common stock as reported on the NASDAQ Capital Market on March 1, 2016 was \$2.15 per share. As of that date there were approximately 62 holders of record of the common stock. This does not include the number of persons whose stock is in nominee or “street name” accounts through brokers. The market price of our common stock has been and may continue to be subject to wide fluctuations in response to a number of events and factors, such as progress in our development programs, quarterly variations in our operating results, announcements of technological innovations or new products by us or our competitors, changes in financial estimates and recommendations by securities analysts, the operating and stock performance of other companies that investors may deem comparable to us, and news reports relating to trends in our markets. These fluctuations, as well as general economic and market conditions, may adversely affect the market price for our common stock.

PLAN OF DISTRIBUTION

We have entered into a sales agreement with JonesTrading, under which we may issue and sell shares of our common stock having an aggregate gross sales price of up to \$6,500,000 from time to time through JonesTrading acting as a sales agent. Sales of our common stock, if any, under this prospectus may be made in sales deemed to be “at-the-market” equity offerings as defined in Rule 415 promulgated under the Securities Act, including sales made directly on or through the NASDAQ Capital Market, the existing trading market for our common stock, sales made to or through a market maker other than on an exchange or otherwise, in negotiated transactions at market prices prevailing at the time of sale or at prices related to such prevailing market prices, and/or any other method permitted by law, including in privately negotiated transactions. The sales agreement has been filed as an exhibit to our registration statement on Form S-3 of which this prospectus forms a part.

JonesTrading will offer the shares of our common stock subject to the terms and conditions of the sales agreement on a daily basis or as otherwise agreed upon by us and JonesTrading. We will designate the maximum number of shares of common stock to be sold through JonesTrading on a daily basis or otherwise determine such maximum number together with JonesTrading. Subject to the terms and conditions of the sales agreement, JonesTrading will use its commercially reasonable efforts to sell on our behalf all of the shares of common stock so designated or determined. We may instruct JonesTrading not to sell shares of common stock if the sales cannot be effected at or above the price designated by us in any such instruction. We or JonesTrading may suspend the offering of shares of common stock being made through JonesTrading under the sales agreement upon proper notice to the other party.

We will pay JonesTrading commissions, in cash, for its services in acting as agent in the sale of our common stock. JonesTrading will be entitled to compensation at a fixed commission rate of 3% of the aggregate gross proceeds from each sale of our common stock. Because there is no minimum offering amount required as a condition to close this offering, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time. We have also agreed to reimburse JonesTrading for certain specified expenses, including the fees and disbursements of its legal counsel in an amount not to exceed \$35,000, as provided in the sales agreement. We estimate that the total expenses for the offering, excluding compensation and reimbursements payable to JonesTrading under the terms of the sales agreement, will be approximately \$105,000.

Settlement for sales of common stock will occur on the third business day following the date on which any sales are made, or on some other date that is agreed upon by us and JonesTrading in connection with a particular transaction, in return for payment of the net proceeds to us. Sales of our common stock as contemplated in this prospectus will be settled through the facilities of The Depository Trust Company or by such other means as we and JonesTrading may agree upon. There is no arrangement for funds to be received in an escrow, trust or similar arrangement.

JonesTrading will use its commercially reasonable efforts consistent with its normal trading and sales practices to sell on our behalf all of the shares of common stock requested to be sold by us, subject to the conditions set forth in the sales agreement. In connection with the sale of the common stock on our behalf, JonesTrading will be deemed to be an “underwriter” within the meaning of the Securities Act and the compensation of JonesTrading will be deemed to be underwriting commissions or discounts. We have agreed to provide indemnification and contribution to JonesTrading against certain civil liabilities, including liabilities under the Securities Act.

The offering of our common stock pursuant to the sales agreement will terminate as permitted therein. We and JonesTrading may each terminate the sales agreement at any time upon 10 days’ prior notice.

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JonesTrading and its affiliates may in the future provide various investment banking, commercial banking and other financial services for us and our affiliates, for which services they may in the future receive customary fees. To the extent required by Regulation M, JonesTrading will not engage in any market making activities involving our common stock while the offering is ongoing under this prospectus.

This prospectus in electronic format may be made available on a website maintained by JonesTrading and JonesTrading may distribute this prospectus electronically.

LEGAL MATTERS

The validity of the securities being offered by this prospectus will be passed upon by Morrison & Foerster LLP of Palo Alto. JonesTrading is being represented in connection with this offering by LeClair Ryan, a Professional Corporation, New York, New York.

EXPERTS

The consolidated balance sheets of Catalyst Biosciences, Inc. as of December 31, 2015 and 2014, and the related consolidated statements of operations, comprehensive loss, convertible preferred stock and stockholders' equity (deficit) and cash flows for each of the years in the three-year period ended December 31, 2015, have been audited by EisnerAmper LLP, independent registered public accounting firm, as stated in their report which is incorporated herein by reference. Such financial statements have been incorporated herein by reference in reliance on the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act, of which this prospectus forms a part. The rules and regulations of the SEC allow us to omit from this prospectus certain information included in the registration statement. For further information about us and the securities we are offering under this prospectus, you should refer to the registration statement and the exhibits and schedules filed with the registration statement. With respect to the statements contained in this prospectus regarding the contents of any agreement or any other document, in each instance, the statement is qualified in all respects by the complete text of the agreement or document, a copy of which has been filed as an exhibit to the registration statement.

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings, including the registration statement and exhibits, are available to the public at the SEC's website at <http://www.sec.gov>. You may also read, without charge, and copy the documents we file, at the SEC's public reference rooms at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You can request copies of these documents by writing to the SEC and paying a fee for the copying cost. Please call the SEC at 1-800-SEC-0330 for further information on the public reference rooms.

We maintain an Internet site at www.catalystbiosciences.com. Webcasts of presentations we make at certain conferences may also be available on our website from time to time. We have not incorporated by reference into this prospectus the information on our website, and you should not consider any of the information posted on or hyper-linked to our website to be a part of this prospectus.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate by reference" the information we file with the SEC, which means we can disclose important information to you by referring you to those documents. The information we incorporate by reference is an important part of this prospectus, and certain information that we will later file with the SEC will automatically update and supersede this information. We incorporate by reference the documents listed below as well as any future filings made with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus until we sell all of the securities under this prospectus, except that we do not incorporate any document or portion of a document that is "furnished" to the SEC, but not deemed "filed." The following documents filed with the SEC are incorporated by reference in this prospectus:

- our Annual Report on Form 10-K for the year ended December 31, 2015 filed with the SEC on March 9, 2016; and
- our Current Report on Form 8-K filed with the SEC on January 29, 2016.

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We also incorporate by reference into this prospectus additional documents that we may file with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, excluding, in each case, information deemed furnished and not filed until we sell all of the securities we are offering. Any statements contained in a previously filed document incorporated by reference into this prospectus is deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus, or in a subsequently filed document also incorporated by reference herein, modifies or supersedes that statement.

We will provide to you at no cost a copy of any and all of the information incorporated by reference into the registration statement of which this prospectus is a part. You may make a request for copies of this information in writing or by telephone. Requests should be directed to:

Catalyst Biosciences, Inc.
260 Littlefield Ave.
South San Francisco, CA 94080
Attn: Fletcher Payne, Chief Financial Officer
(650) 871-0761



Up to \$6,500,000

Common Stock



PROSPECTUS SUPPLEMENT

, 2016

PART II**INFORMATION NOT REQUIRED IN PROSPECTUS****Item 14. Other expenses of issuance and distribution**

The following table sets forth all expenses, other than the underwriting discounts and commissions, payable by us in connection with this offering. All the amounts shown are estimates except for the registration fee.

SEC registration fee	\$ 5,035
FINRA fee	8,000
Accounting fees and expenses	30,000*
Legal fees and expenses	50,000*
Transfer agent and registrar fees	5,000*
Printing expenses	5,000*
Miscellaneous	1,965*
Total	<u>\$105,000*</u>

* The fees listed represent fees attributable to the offer and sale of shares of our common stock having an aggregate offering price of up to \$6,500,000 from time to time under the sales agreement prospectus supplement that forms a part of this registration statement. Fees associated with other offerings of securities pursuant to this registration statement will be calculated based on the securities offered and the number of such offerings, and, accordingly, we cannot estimate such additional fees at this time.

Item 15. Indemnification of Directors and Officers

Our Fourth Amended and Restated Certificate of Incorporation, as amended and as may be further amended and in effect from time to time, which we refer to as the restated certificate of incorporation, provides that our directors shall not be personally liable to us or our stockholders for monetary damages for any breach of fiduciary duty as a director, except for liability for breach of the director's duty of loyalty to us or our stockholders, for acts or omissions not in good faith or involving intentional misconduct or a knowing violation of law, for payment of dividends or approval of stock purchases or redemptions that are prohibited by the General Corporation Law of the State of Delaware, as amended, which we refer to as the DGCL, or for any transaction from which the director derived an improper personal benefit. Under the DGCL, our directors have a fiduciary duty to us that is not eliminated by this provision of the restated certificate of incorporation and, in appropriate circumstances, equitable remedies such as injunctive or other forms of non-monetary relief will remain available. This provision also does not affect our directors' responsibilities under any other laws, such as federal securities laws or state or federal environmental laws.

Section 145 of the DGCL empowers a corporation to indemnify its directors and officers against expenses (including attorneys' fees), judgments, fines and amounts paid in settlements actually and reasonably incurred by them in connection with any action, suit or proceeding brought by third parties by reason of the fact that they were or are directors or officers of the corporation, if they acted in good faith, in a manner they reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe that their conduct was unlawful. The DGCL provides further that the indemnification permitted thereunder shall not be deemed exclusive of any other rights to which the directors and officers may be entitled under the corporation's bylaws, any agreement, a vote of stockholders or otherwise. The restated certificate of incorporation provides that, to the fullest extent permitted by Section 145 of the DGCL, we shall indemnify any person who is or was a director or officer of us, or is or was serving at our request as a director, officer or trustee of another corporation, partnership, joint venture, trust, employee benefit plan or other enterprise, against the expenses, liabilities or other matters referred to in or covered by Section 145 of the DGCL. Our amended and restated bylaws provide that we will indemnify any person who was or is a party or threatened to be made a party to any proceeding by reason of the fact that such person is or was a director or officer of us or is or was serving at our request as a director, officer or trustee of another corporation, partnership, joint venture, trust, employee benefit plan or other enterprise to the fullest extent permitted by the DGCL. In addition, we have entered into agreements with each of our directors and officers under which, among other things, we have agreed to indemnify the director or officer against expenses incurred in any proceeding, including any action by us, in which the director or officer was, is or is threatened to be made a party or a participant by reason of his or her status as a present or former director, officer, employee or agent of us or, at our request, any other corporation, partnership, joint venture, trust, employee benefit plan or other enterprise. At present, there is no pending litigation or proceeding involving any director or officer as to which indemnification will be required or permitted, and we are not aware of any threatened litigation or proceeding that may result in a claim for such indemnification.

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Section 145 of the DGCL also empowers a corporation to purchase insurance for its officers and directors for such liabilities. We maintain liability insurance for our officers and directors.

Any underwriting agreements that we may enter into will likely provide for the indemnification of us, our controlling persons, our directors and certain of our officers by the underwriters against certain liabilities, including liabilities under the Securities Act.

Item 16. Exhibits and Financial Statement Schedules

(a) The following exhibits are filed herewith or incorporated herein by reference:

<u>Exhibit Number</u>	<u>Description</u>
1.1	Capital on Demand™ Sales Agreement, dated March 16, 2016, by and between the Company and JonesTrading Institutional Services LLC
1.2	Form of Underwriting Agreement (for Common Stock)*
1.3	Form of Underwriting Agreement (for Preferred Stock)*
1.4	Form of Underwriting Agreement (for Debt Securities)*
3.1	Fourth Amended and Restated Certificate of Incorporation of the Company (incorporated by reference to Exhibit 4.1 to the Company's Form S-8, (Reg No. 333-133881), as filed with the SEC on May 8, 2006)
3.2	Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Company (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K, as filed with the SEC on August 20, 2015)
3.3	Bylaws of the Company, as amended (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K, as filed with the SEC on March 6, 2015)
4.1	Form of Common Stock Certificate*
4.2	Form of Preferred Stock Certificate*
4.3	Form of Common Stock Warrant Agreement (including warrant certificate)*
4.4	Form of Preferred Stock Warrant Agreement (including warrant certificate)*
4.5	Form of Unit Agreement (including form of unit certificate)*
4.6	Form of Indenture
5.1	Opinion of Morrison & Foerster LLP
12.1	Computation of Ratio of Earnings to Fixed Charges
23.1	Consent of independent registered public accounting firm
23.2	Consent of Counsel (included in Exhibit 5.1)
24.1	Powers of Attorney (included as part of the signature pages hereto)
25.1	Form T-1 Statement of Eligibility under Trust Indenture Act of 1939 of Debt Trustee (to be filed prior to any issuance of Debt Securities) (1)

* To be filed by amendment or by a Current Report on Form 8-K and incorporated herein by reference.

(1) To be filed in accordance with the requirements of Section 305(b)(2) of the Trust Indenture Act of 1939.

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Item 17. Undertakings

(a) The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the SEC pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement,

Provided, however, that paragraphs (a)(1)(i), (a)(1)(ii) and (a)(1)(iii) above do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in this Registration Statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the Registration Statement.

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act to any purchaser:

(i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

(5) That, for the purpose of determining liability of the Registrant under the Securities Act to any purchaser in the initial distribution of the securities, the undersigned Registrant undertakes that in a primary offering of securities of the undersigned Registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following

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communications, the undersigned Registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned Registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned Registrant or used or referred to by the undersigned Registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned Registrant or its securities provided by or on behalf of the undersigned Registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned Registrant to the purchaser.

(6) That, for purposes of determining any liability under the Securities Act, each filing of the Registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

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

(8) To file an application for the purpose of determining the eligibility of the trustee to act under subsection (a) of Section 310 of the Trust Indenture Act in accordance with the rules and regulations prescribed by the Commission under Section 305(b)(2) of the Trust Indenture Act.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of South San Francisco, State of California, on the 16th day of March, 2016.

Catalyst Biosciences, Inc.

By: /s/ NASSIM USMAN, PH.D.
Nassim Usman, Ph.D.
President and Chief Executive Officer

SIGNATURES AND POWER OF ATTORNEY

Each person whose signature appears below constitutes and appoints Nassim Usman and Fletcher Payne, and each of them severally, as his true and lawful attorney-in-fact and agent, each acting alone with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign this Registration Statement on Form S-3 to be filed in connection with the offering of securities of Catalyst Biosciences, Inc., and any and all amendments (including post-effective amendments) to this registration statement, and any subsequent registration statement filed pursuant to Rule 462 under the Securities Act of 1933, as amended, and to file the same with exhibits thereto, and the other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent, each acting alone, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as they might or could do in person, hereby ratifying and confirming all that said attorney-in-fact or his substitutes, each acting alone, may lawfully do or cause to be done by virtue thereof.

IN WITNESS WHEREOF, each of the undersigned has executed this Power of Attorney as of the date indicated.

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

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/S/ NASSIM USMAN, PH.D.</u> Nassim Usman, Ph.D.	President, Chief Executive Officer and Director (Principal Executive Officer)	March 16, 2016
<u>/S/ FLETCHER PAYNE</u> Fletcher Payne	Chief Financial Officer (Principal Financial and Principal Accounting Officer)	March 16, 2016
<u>/S/ HAROLD E. SELICK, PH.D.</u> Harold E. Selick, Ph.D.	Director	March 16, 2016
<u>/S/ ERROL B. DE SOUZA, PH.D.</u> Errol B. De Souza, Ph.D.	Director	March 16, 2016
<u>/S/ JEFF HIMAWAN, PH.D.</u> Jeff Himawan, Ph.D.	Director	March 16, 2016
<u>/S/ AUGUSTINE LAWLOR</u> Augustine Lawlor	Director	March 16, 2016
<u>/S/ JOHN P. RICHARD</u> John P. Richard	Director	March 16, 2016
<u>/S/ STEPHEN M. HILL, M.D.</u> Stephen M. Hill, M.D.	Director	March 16, 2016

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* To be filed by amendment or by a Current Report on Form 8-K and incorporated herein by reference.

(1) To be filed in accordance with the requirements of Section 305(b)(2) of the Trust Indenture Act of 1939.

CATALYST BIOSCIENCES, INC.
Common Stock
(\$0.001 par value per share)

Capital on Demand™ Sales Agreement

JonesTrading Institutional Services LLC
780 Third Avenue
New York, NY 10017

March 16, 2016

Ladies and Gentlemen:

CATALYST BIOSCIENCES, INC. a Delaware corporation (the "Company"), confirms its agreement (this "Agreement") with JONESTRADING INSTITUTIONAL SERVICES LLC (the "Agent"), as follows:

1. Issuance and Sale of Shares. The Company agrees that, from time to time during the term of this Agreement, on the terms and subject to the conditions set forth herein, it may issue and sell through the Agent, shares (the "Placement Shares") of common stock of the Company, \$0.001 par value per share (the "Common Stock"), *provided however*, that in no event shall the Company issue or sell through Agent such number of Placement Shares that (a) exceeds the number of shares of Common Stock that may be sold pursuant to the Registration Statement (as defined below) pursuant to which the offering is being made, or (b) exceeds the number of authorized but unissued shares of Common Stock (the lesser of (a) and (b), the "Maximum Amount"). Notwithstanding anything to the contrary contained herein, the parties hereto agree that compliance with the limitations set forth in this Section 1 on the amount of Placement Shares issued and sold under this Agreement shall be the sole responsibility of the Company and that Agent shall have no obligation in connection with such compliance. The issuance and sale of Placement Shares through Agent will be effected pursuant to the Registration Statement (as defined below) filed by the Company and at no earlier time than such time as the Registration Statement shall have been declared effective by the Securities and Exchange Commission (the "Commission"), although nothing in this Agreement shall be construed as requiring the Company to use the Registration Statement to issue Common Stock.

On the date of this agreement, the Company has filed, or will file, in accordance with the provisions of the Securities Act of 1933, as amended (the "Securities Act") and the rules and regulations thereunder (the "Securities Act Regulations"), with the Commission a registration statement on Form S-3, including a base prospectus, relating to certain securities, including the Placement Shares to be issued from time to time by the Company, and which incorporates by reference documents that the Company has filed or will file in accordance with the provisions of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and the rules and regulations thereunder (the "Exchange Act Regulations"). The Company has prepared a prospectus supplement specifically relating to the Placement Shares (the "Prospectus Supplement") to the base prospectus included as part of such registration statement. The Company will furnish to the Agent, for use by the Agent, copies of the prospectus included as

part of such registration statement, as supplemented by the Prospectus Supplement, relating to the Placement Shares. Except where the context otherwise requires, such registration statement, including all documents filed as part thereof or incorporated by reference therein, and including any information contained in a Prospectus (as defined below) subsequently filed with the Commission pursuant to Rule 424(b) under the Securities Act Regulations or deemed to be a part of such registration statement pursuant to Rule 430B of the Securities Act Regulations, is herein called the "Registration Statement." The base prospectus, including all documents incorporated therein by reference, included in the Registration Statement, as it may be supplemented by the Prospectus Supplement, in the form in which such prospectus and/or Prospectus Supplement have most recently been filed by the Company with the Commission pursuant to Rule 424(b) under the Securities Act Regulations, together with any then issued Issuer Free Writing Prospectus (defined below), is herein called the "Prospectus." Any reference herein to the Registration Statement, the Prospectus or any amendment or supplement thereto shall be deemed to refer to and include the documents incorporated by reference therein, and any reference herein to the terms "amend," "amendment" or "supplement" with respect to the Registration Statement or the Prospectus shall be deemed to refer to and include the filing after the execution hereof of any document with the Commission deemed to be incorporated by reference therein.

Any reference herein to the Registration Statement, any Prospectus Supplement, Prospectus or any Issuer Free Writing Prospectus shall be deemed to refer to and include the documents, if any, incorporated by reference therein (the "Incorporated Documents"), including, unless the context otherwise requires, the documents, if any, filed as exhibits to such Incorporated Documents. Any reference herein to the terms "amend," "amendment" or "supplement" with respect to the Registration Statement, any Prospectus Supplement, the Prospectus or any Issuer Free Writing Prospectus shall be deemed to refer to and include the filing of any document under the Exchange Act on or after the most-recent effective date of the Registration Statement, or the date of Prospectus Supplement, Prospectus or such Issuer Free Writing Prospectus, as the case may be, and incorporated therein by reference. For purposes of this Agreement, all references to the Registration Statement, the Prospectus or to any amendment or supplement thereto shall be deemed to include any copy filed with the Commission pursuant to its Electronic Data Gathering Analysis and Retrieval System, or if applicable, the Interactive Data Electronic Application system when used by the Commission (collectively, "EDGAR").

2. Placements. Each time that the Company wishes to issue and sell Placement Shares hereunder (each, a "Placement"), it will notify the Agent by email notice (or other method mutually agreed to in writing by the Parties) of the number of Placement Shares, the time period during which sales are requested to be made, any limitation on the number of Placement Shares that may be sold in any one day and any minimum price below which sales may not be made (a "Placement Notice"), the form of which is attached hereto as Schedule 1. The Placement Notice shall originate from any of the individuals from the Company set forth on Schedule 3 (with a copy to each of the other individuals from the Company listed on such schedule), and shall be addressed to each of the individuals from the Agent set forth on Schedule 3, as such Schedule 3 may be amended from time to time. The Placement Notice shall be effective unless and until (i) the Agent declines to accept the terms contained therein for any reason, in its sole discretion, (ii) the entire amount of the Placement Shares thereunder have been sold, (iii) the Company suspends or terminates the Placement Notice or (iv) the Agreement has been terminated under the provisions of Section 12. The amount of any discount, commission or other compensation to

be paid by the Company to Agent in connection with the sale of the Placement Shares shall be calculated in accordance with the terms set forth in Schedule 2. It is expressly acknowledged and agreed that neither the Company nor the Agent will have any obligation whatsoever with respect to a Placement or any Placement Shares unless and until the Company delivers a Placement Notice to the Agent and the Agent does not decline such Placement Notice pursuant to the terms set forth above, and then only upon the terms specified therein and herein. In the event of a conflict between the terms of this Agreement and the terms of a Placement Notice, the terms of the Placement Notice will control.

3. Sale of Placement Shares by Agent. Subject to the provisions of Section 5(a), the Agent, for the period specified in the Placement Notice, will use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of the NASDAQ Stock Market LLC (the "Exchange"), to sell the Placement Shares up to the amount specified, and otherwise in accordance with the terms of such Placement Notice. The Agent will provide written confirmation to the Company no later than the opening of the Trading Day (as defined below) immediately following the Trading Day on which it has made sales of Placement Shares hereunder setting forth the number of Placement Shares sold on such day, the compensation payable by the Company to the Agent pursuant to Section 2 with respect to such sales, and the Net Proceeds (as defined below) payable to the Company, with an itemization of the deductions made by the Agent (as set forth in Section 5(b)) from the gross proceeds that it receives from such sales. Subject to the terms of the Placement Notice, the Agent may sell Placement Shares by any method permitted by law deemed to be an "at the market offering" as defined in Rule 415 of the Securities Act Regulations, including without limitation sales made directly on the Exchange, on any other existing trading market for the Common Stock or to or through a market maker. Subject to the terms of a Placement Notice, the Agent may also sell Placement Shares by any other method permitted by law, including but not limited to in negotiated transactions. During the term of this Agreement, neither the Agent nor any of its affiliates or subsidiaries shall engage in (i) any short sale of any security of the Company or (ii) any sale of any security of the Company that the Agent does not own or any sale which is consummated by the delivery of a security of the Company borrowed by, or for the account of, the Agent.

4. Suspension of Sales. The Company or the Agent may, upon notice to the other party in writing (including by email correspondence to each of the individuals of the other party set forth on Schedule 3, if receipt of such correspondence is actually acknowledged by any of the individuals to whom the notice is sent, other than via auto-reply) or by telephone (confirmed immediately by verifiable facsimile transmission or email correspondence to each of the individuals of the other party set forth on Schedule 3), suspend any sale of Placement Shares; provided, however, that such suspension shall not affect or impair any party's obligations with respect to any Placement Shares sold hereunder prior to the receipt of such notice. Each party agrees that no such notice under this Section 4 shall be effective against any other party unless it is made to one of the individuals named on Schedule 3 hereto, as such Schedule may be amended from time to time.

5. Sale and Delivery to the Agent; Settlement.

(a) Sale of Placement Shares. On the basis of the representations and warranties herein contained and subject to the terms and conditions herein set forth, upon the Agent's acceptance of the terms of a Placement Notice, and unless the sale of the Placement Shares described therein has been declined, suspended, or otherwise terminated in accordance with the terms of this Agreement, the Agent, for the period specified in the Placement Notice, will use its commercially reasonable efforts consistent with its normal trading and sales practices to sell such Placement Shares up to the amount specified in such Placement Notice, and otherwise in accordance with the terms of such Placement Notice. The Company acknowledges and agrees that (i) there can be no assurance that the Agent will be successful in selling Placement Shares, (ii) the Agent will incur no liability or obligation to the Company or any other person or entity if it does not sell Placement Shares for any reason other than a failure by the Agent to use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable law and regulations to sell such Placement Shares as required under this Agreement and (iii) the Agent shall be under no obligation to purchase Placement Shares on a principal basis pursuant to this Agreement, except as otherwise agreed by the Agent and the Company.

(b) Settlement of Placement Shares. Unless otherwise specified in the applicable Placement Notice, settlement for sales of Placement Shares will occur on the third (3rd) Trading Day (or such earlier day as is industry practice for regular-way trading) following the date on which such sales are made (each, a "Settlement Date"). The amount of proceeds to be delivered to the Company on a Settlement Date against receipt of the Placement Shares sold (the "Net Proceeds") will be equal to the aggregate sales price received by the Agent, after deduction for (i) the Agent's commission, discount or other compensation for such sales payable by the Company pursuant to Section 2 hereof, and (ii) any transaction fees imposed by any governmental or self-regulatory organization in respect of such sales.

(c) Delivery of Placement Shares. On or before each Settlement Date, the Company will, or will cause its transfer agent to, electronically transfer the Placement Shares being sold by crediting the Agent's or its designee's account (provided the Agent shall have given the Company written notice of such designee prior to the Settlement Date) at The Depository Trust Company through its Deposit and Withdrawal at Custodian System or by such other means of delivery as may be mutually agreed upon by the parties hereto which in all cases shall be freely tradable, transferable, registered shares in good deliverable form. On each Settlement Date, the Agent will deliver the related Net Proceeds in same day funds to an account designated by the Company on, or prior to, the Settlement Date. The Company agrees that if the Company, or its transfer agent (if applicable), defaults in its obligation to deliver Placement Shares on a Settlement Date, the Company agrees that in addition to and in no way limiting the rights and obligations set forth in Section 10(a) hereto, it will (i) hold the Agent harmless against any loss, claim, damage, or expense (including reasonable legal fees and expenses), as incurred, arising out of or in connection with such default by the Company or its transfer agent (if applicable) and (ii) pay to the Agent any commission, discount, or other compensation to which it would otherwise have been entitled absent such default.

(d) Limitations on Offering Size. Under no circumstances shall the Company cause or request the offer or sale of any Placement Shares if, after giving effect to the sale of such Placement Shares, the aggregate gross sales proceeds of Placement Shares sold pursuant to this Agreement would exceed the lesser of (A) together with all sales of Placement Shares under this Agreement, the Maximum Amount, (B) the amount available for offer and sale under the Registration Statement and (C) the amount authorized from time to time to be issued and sold under this Agreement by the Company's board of directors, a duly authorized committee thereof or a duly authorized executive committee, and notified to the Agent in writing. Under no circumstances shall the Company cause or request the offer or sale of any Placement Shares pursuant to this Agreement at a price lower than the minimum price authorized from time to time by the Company's board of directors, duly authorized committee thereof or a duly authorized executive committee, and notified to the Agent in writing. Further, under no circumstances shall the Company cause or permit the aggregate offering amount of Placement Shares sold pursuant to this Agreement to exceed the Maximum Amount.

6. Representations and Warranties of the Company. Except as disclosed in the Registration Statement or Prospectus (including the Incorporated Documents), the Company represents and warrants to, and agrees with the Agent that as of the date of this Agreement and as of each Applicable Time (as defined below):

(a) Registration Statement and Prospectus. The Company and the transactions contemplated by this Agreement meet the requirements for and comply with the conditions for the use of Form S-3 under the Securities Act. The Registration Statement has been filed or will be filed with the Commission and will be declared effective under the Securities Act before the date of the first Placement Notice. The Prospectus Supplement will name the Agent as underwriter, acting as agent, in the section entitled "Plan of Distribution." The Company has not received, and has no notice of, any order of the Commission preventing or suspending the use of the Registration Statement, or threatening or instituting proceedings for that purpose. The Registration Statement and the offer and sale of Placement Shares as contemplated hereby meet the requirements of Rule 415 under the Securities Act and comply in all material respects with said Rule. Any statutes, regulations, contracts or other documents that are required to be described in the Registration Statement or the Prospectus or to be filed as exhibits to the Registration Statement have been so described or filed. Copies of the Registration Statement, the Prospectus, and any such amendments or supplements and all documents incorporated by reference therein that were filed with the Commission on or prior to the date of this Agreement have been delivered, or are available through EDGAR, to Agent and its counsel. The Company has not distributed and, prior to the later to occur of each Settlement Date and completion of the distribution of the Placement Shares, will not distribute any offering material in connection with the offering or sale of the Placement Shares other than the Registration Statement and the Prospectus and any Issuer Free Writing Prospectus to which Agent has consented. The Common Stock is currently quoted on the Exchange under the trading symbol "CBIO". The Company has not, in the 12 months preceding the date hereof, received notice from the Exchange to the effect that the Company is not in compliance with the listing or maintenance requirements. The Company has no reason to believe that it will not in the foreseeable future continue to be in compliance with all such listing and maintenance requirements.

(b) No Misstatement or Omission. The Registration Statement, when it became or becomes effective, and the Prospectus, and any amendment or supplement thereto, on the date of such Prospectus or amendment or supplement, conformed and will conform in all material respects with the requirements of the Securities Act. At each Settlement Date, the Registration Statement and the Prospectus, as of such date, will conform in all material respects with the requirements of the Securities Act. The Registration Statement, when it became or becomes effective, did not, and will not, contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. The Prospectus and any amendment or supplement thereto, on the date thereof and at each Applicable Time (defined below), did not and will not include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in light of the circumstances under which they were made, not misleading. The documents incorporated by reference in the Prospectus or any Prospectus Supplement did not, and any further documents filed and incorporated by reference therein will not, when filed with the Commission, contain an untrue statement of a material fact or omit to state a material fact required to be stated in such document or necessary to make the statements in such document, in light of the circumstances under which they were made, not misleading. The foregoing shall not apply to statements in, or omissions from, any such document made in reliance upon, and in conformity with, information furnished to the Company by Agent specifically for use in the preparation thereof.

(c) Conformity with Securities Act and Exchange Act. The Registration Statement, the Prospectus, any Issuer Free Writing Prospectus or any amendment or supplement thereto, and the Incorporated Documents, when such documents were or are filed with the Commission under the Securities Act or the Exchange Act or became or become effective under the Securities Act, as the case may be, conformed and will conform in all material respects with the requirements of the Securities Act and the Exchange Act, as applicable.

(d) Financial Information. The financial statements of the Company included or incorporated by reference in the Registration Statement, the Prospectus and the Issuer Free Writing Prospectuses, if any, together with the related notes and schedules, present fairly, in all material respects, the financial position of the Company and the Subsidiaries (as defined below) as of the dates indicated and the results of operations, cash flows and changes in stockholders' equity of the Company for the periods specified and have been prepared in compliance with the requirements of the Securities Act and Exchange Act and in conformity with GAAP (as defined below) applied on a consistent basis (except for (i) such adjustments to accounting standards and practices as are noted therein, (ii) in the case of unaudited interim financial statements, to the extent such financial statements may not include footnotes required by GAAP or may be condensed or summary statements and (iii) such adjustments which will not be material, either individually or in the aggregate) during the periods involved; the other financial and statistical data with respect to the Company and the Subsidiaries contained or incorporated by reference in the Registration Statement, the Prospectus and the Issuer Free Writing Prospectuses, if any, are accurately and fairly presented and prepared on a basis consistent with the financial statements and books and records of the Company and the Subsidiaries; there are no financial statements (historical or pro forma) that are required to be included or incorporated by reference in the Registration Statement, or the Prospectus that are not included or incorporated by reference as required; the Company does not have any material liabilities or obligations, direct or contingent (including any off-balance sheet obligations), not described in the Registration Statement

(excluding the exhibits thereto), and the Prospectus; and all disclosures contained or incorporated by reference in the Registration Statement, the Prospectus and the Issuer Free Writing Prospectuses, if any, regarding “non-GAAP financial measures” (as such term is defined by the rules and regulations of the Commission) comply in all material respects with Regulation G of the Exchange Act and Item 10 of Regulation S-K under the Securities Act, to the extent applicable;

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

(f) Organization. The Company and any subsidiary that is a significant subsidiary (as such term is defined in Rule 1-02 of Regulation S-X promulgated by the Commission) (each such subsidiary set forth on Schedule 6(f) hereto, a “Subsidiary”, collectively, the “Subsidiaries”) have been duly organized, validly existing as a corporation or other entity and in good standing under the laws of its jurisdiction of organization. The Company and the Subsidiaries are, and will be, duly licensed or qualified as a foreign corporation for transaction of business and in good standing under the laws of each other jurisdiction in which its ownership or lease of property or the conduct of its business requires such license or qualification, and has all corporate power and authority necessary to own or hold its properties and to conduct its business as described in the Registration Statement and the Prospectus, except where the failure to be so qualified or in good standing or have such power or authority would not, individually or in the aggregate, have a material adverse effect on or affecting the assets, business, operations, earnings, properties, condition (financial or otherwise), prospects, stockholders’ equity or results of operations of the Company and the Subsidiaries taken as a whole, or prevent or materially interfere with consummation of the transactions contemplated hereby (a “Material Adverse Effect”).

(g) Subsidiaries. The Company owns directly or indirectly, all of the equity interests of the Subsidiaries free and clear of any lien, charge, security interest, encumbrance, right of first refusal or other restriction, and all the equity interests of the Subsidiaries are validly issued and are fully paid, nonassessable and free of preemptive and similar rights.

(h) No Violation or Default. Neither the Company nor any Subsidiary is (i) in violation of its charter or by-laws or similar organizational documents; (ii) in default, and no event has occurred that, with notice or lapse of time or both, would constitute such a default, in the due performance or observance of any term, covenant or condition contained in any indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which the Company or any Subsidiary is a party or by which the Company or any Subsidiary is bound or to which any of the property or assets of the Company or any Subsidiary is subject; or (iii) in violation of any law or statute or any judgment, order, rule or regulation of any court or arbitrator or governmental or regulatory authority, except, in the case of each of clauses (ii) and (iii) above, for any such violation or default that would not, individually or in the aggregate, have a Material Adverse Effect. To the Company’s knowledge, no other party under any material contract or other agreement to which it is a party is in default in any respect thereunder where such default would have a Material Adverse Effect.

(i) No Material Adverse Effect. Subsequent to the respective dates as of which information is given in the Registration Statement, the Prospectus and the Issuer Free Writing Prospectuses, if any, (including any document deemed incorporated by reference therein), there has not been (i) any Material Adverse Effect, in or affecting the business, properties, management, condition (financial or otherwise), results of operations, or prospects of the Company and the Subsidiaries taken as a whole, (ii) any transaction which is material to the Company or the Subsidiaries, which is material to the Company and the Subsidiaries taken as a whole, (iii) any obligation or liability, direct or contingent (including any off-balance sheet obligations), incurred by the Company or the Subsidiary, which is material to the Company and the Subsidiaries taken as a whole, (iv) any material change in the capital stock or outstanding long-term indebtedness (other than (A) the grant of additional awards under equity incentive plans, (B) changes in the number of outstanding Common Stock due issuance of shares upon exercise or conversion of securities exercisable for or convertible into Common Stock outstanding on the date hereof, (C) any repurchase of capital stock of the Company, (D) as a result of the sale of Placement Shares, or (E) other than as publicly reported or announced), or (v) any dividend or distribution of any kind declared, paid or made on the capital stock of the Company or any Subsidiary, other than in each case above in the ordinary course of business or as otherwise disclosed in the Registration Statement or Prospectus (including any document deemed incorporated by reference therein).

(j) Capitalization. The issued and outstanding shares of capital stock of the Company have been validly issued, are fully paid and nonassessable and, other than as disclosed in the Registration Statement or the Prospectus, are not subject to any preemptive rights, rights of first refusal or similar rights. The Company has an authorized, issued and outstanding capitalization as set forth in the Registration Statement and the Prospectus as of the dates referred to therein (other than the grant of additional options and restricted stock units under the Company's existing stock option plans, or changes in the number of outstanding shares of Common Stock of the Company due to the issuance of shares upon the exercise or conversion of securities exercisable for, or convertible into, Common Stock outstanding on the date hereof) and such authorized capital stock conforms to the description thereof set forth in the Registration Statement and the Prospectus. The description of the securities of the Company in the Registration Statement and the Prospectus is complete and accurate in all material respects. As of the date referred to therein, the Company does not have outstanding any options to purchase, or any rights or warrants to subscribe for, or any securities or obligations convertible into, or exchangeable for, or any contracts or commitments to issue or sell, any shares of capital stock or other securities.

(k) Authorization; Enforceability. The Company has full legal right, power and authority to enter into this Agreement and perform the transactions contemplated hereby. This Agreement has been duly authorized, executed and delivered by the Company and is a legal, valid and binding agreement of the Company enforceable in accordance with its terms, except (i) to the extent that enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' rights generally and by general equitable principles and (ii) the indemnification and contribution provisions of Section 10 hereof may be limited by federal or state securities laws and public policy considered in respect thereof.

(l) Authorization of Placement Shares. The Placement Shares, when issued and delivered pursuant to the terms approved by the board of directors of the Company or a duly authorized committee thereof, against payment therefor as provided herein, will be duly and validly authorized and issued and fully paid and nonassessable, free and clear of any pledge, lien, encumbrance, security interest or other claim, including any statutory or contractual preemptive rights, resale rights, rights of first refusal or other similar rights, and will be registered pursuant to Section 12 of the Exchange Act. The Placement Shares, when issued, will conform in all material respects to the description thereof set forth in or incorporated into the Prospectus.

(m) No Consents Required. No consent, approval, authorization, order, registration or qualification of or with any court or arbitrator or governmental or regulatory authority is required for the execution, delivery and performance by the Company this Agreement, the issuance and sale by the Company of the Placement Shares, except for such consents, approvals, authorizations, orders and registrations or qualifications as may be required under applicable state securities laws or by the by-laws and rules of the Financial Industry Regulatory Authority (“FINRA”) or the Exchange in connection with the sale of the Placement Shares by the Agent.

(n) No Preferential Rights. (i) No person, as such term is defined in Rule 1-02 of Regulation S-X promulgated under the Securities Act (each, a “Person”), has the right, contractual or otherwise, to cause the Company to issue or sell to such Person any Common Stock or shares of any other capital stock or other securities of the Company, (ii) no Person has any preemptive rights, resale rights, rights of first refusal, or any other rights (whether pursuant to a “poison pill” provision or otherwise) to purchase any Common Stock or shares of any other capital stock or other securities of the Company, (iii) no Person has the right to act as an underwriter or as a financial advisor to the Company in connection with the offer and sale of Common Stock, and (iv) no Person has the right, contractual or otherwise, to require the Company to register under the Securities Act any Common Stock or shares of any other capital stock or other securities of the Company, or to include any such shares or other securities in the Registration Statement or the offering contemplated thereby, whether as a result of the filing or effectiveness of the Registration Statement or the sale of the Placement Shares as contemplated thereby or otherwise.

(o) Independent Public Accountant. EisnerAmper LLP (the “Accountant”), whose report on the consolidated financial statements of the Company is filed with the Commission as part of the Company’s most recent Annual Report on Form 10-K filed with the Commission and incorporated into the Registration Statement and the Prospectus, are and, during the periods covered by their report, were an independent registered public accounting firm with respect to the Company within the meaning of the Securities Act and the Public Company Accounting Oversight Board (United States). To the Company’s knowledge, after due and careful inquiry, the Accountant is not in violation of the auditor independence requirements of the Sarbanes-Oxley Act of 2002 (the “Sarbanes-Oxley Act”) with respect to the Company.

(p) Enforceability of Agreements. All agreements between the Company and third parties expressly referenced in the Prospectus are legal, valid and binding obligations of the Company enforceable in accordance with their respective terms, except to the extent that (i) enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or

similar laws affecting creditors' rights generally and by general equitable principles and (ii) the indemnification provisions of certain agreements may be limited by federal or state securities laws or public policy considerations in respect thereof, and except for any unenforceability that, individually or in the aggregate, would not reasonably be expected to have a Material Adverse Effect.

(q) No Litigation. There are no legal, governmental or regulatory actions, suits or proceedings pending, nor, to the Company's knowledge, any legal, governmental or regulatory investigations, to which the Company or any Subsidiary is a party or to which any property of the Company or any Subsidiary is the subject that, individually or in the aggregate, if determined adversely to the Company or any Subsidiary, would have a Material Adverse Effect or materially and adversely affect the ability of the Company to perform its obligations under this Agreement; to the Company's knowledge, no such actions, suits or proceedings are threatened or contemplated by any governmental or regulatory authority or threatened by others; and (i) there are no current or pending legal, governmental or regulatory investigations, actions, suits or proceedings that are required under the Securities Act to be described in the Prospectus that are not so described; and (ii) there are no contracts or other documents that are required under the Securities Act to be filed as exhibits to the Registration Statement that are not so filed.

(r) Licenses and Permits. The Company and the Subsidiaries possess or have obtained, all licenses, certificates, consents, orders, approvals, permits and other authorizations issued by, and have made all declarations and filings with, the appropriate federal, state, local or foreign governmental or regulatory authorities that are necessary for the ownership or lease of their respective properties or the conduct of their respective businesses as described in the Registration Statement and the Prospectus (the "Permits"), except where the failure to possess, obtain or make the same would not, individually or in the aggregate, have a Material Adverse Effect. Neither the Company nor any Subsidiary has received written notice of any proceeding relating to revocation or modification of any such Permit or has any reason to believe that such Permit will not be renewed in the ordinary course, except where the failure to obtain any such renewal would not, individually or in the aggregate, have a Material Adverse Effect.

(s) S-3 Eligibility. (i) At the time of filing the Registration Statement and (ii) at the time of the most recent amendment thereto for the purposes of complying with Section 10(a)(3) of the Securities Act (whether such amendment was by post-effective amendment, incorporated report filed pursuant to Section 13 or 15(d) of the Exchange Act or form of prospectus), the Company met the then applicable requirements for use of Form S-3 under the Securities Act, including compliance with General Instruction I.B.6 of Form S-3.

(t) Market Capitalization. As of the close of trading on the Exchange on January 26, 2016, the aggregate market value of the outstanding voting and non-voting common equity (as defined in Rule 405) of the Company held by persons other than affiliates of the Company (pursuant to Rule 144, those that directly, or indirectly through one or more intermediaries, control, or are controlled by, or are under common control with, the Company) (the "Non-Affiliate Shares"), was approximately \$20.8 million (calculated by multiplying (x) the price at which the common equity of the Company was last sold on the Exchange on January 26, 2016 times (y) the number of Non-Affiliate Shares) and (ii) the aggregate market value of securities sold by or on behalf of the Company during the

previous 12 calendar months, including the Placement Shares, is no more than one-third the aggregate market value of the Non-Affiliate Shares. The Company is not a shell company (as defined in Rule 405 under the Securities Act) and has not been a shell company for at least 12 calendar months previously and if it has been a shell company at any time previously, has filed current Form 10 information (as defined in Instruction I.B.6 of Form S-3) with the Commission at least 12 calendar months previously reflecting its status as an entity that is not a shell company.

(u) No Material Defaults. Neither the Company nor any Subsidiary has defaulted on any installment on indebtedness for borrowed money or on any rental on one or more long-term leases, which defaults, individually or in the aggregate, have a Material Adverse Effect. The Company has not filed a report pursuant to Section 13(a) or 15(d) of the Exchange Act since the filing of its last Annual Report on Form 10-K, indicating that it (i) has failed to pay any dividend or sinking fund installment on preferred stock or (ii) has defaulted on any installment on indebtedness for borrowed money or on any rental on one or more long-term leases, which defaults, individually or in the aggregate, could reasonably be expected to have a Material Adverse Effect.

(v) Certain Market Activities. Neither the Company nor any Subsidiary, nor to the Company's knowledge, any of its directors, officers or controlling persons has taken, directly or indirectly, any action designed, or that has constituted or would reasonably be expected to cause or result in, under the Exchange Act or otherwise, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Placement Shares.

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

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

(y) Taxes. The Company and the Subsidiaries have filed all federal, state, local and foreign tax returns which have been required to be filed and paid all taxes shown thereon through the date hereof, to the extent that such taxes have become due and are not being contested in good faith. Except as otherwise disclosed in or contemplated by the Registration Statement or the Prospectus, no tax deficiency has been determined adversely to the Company or any Subsidiary which has had, individually or in the aggregate, a Material Adverse Effect. The Company has no knowledge of any federal, state or other governmental tax deficiency, penalty or assessment which has been or might be asserted or threatened against it which would have a Material Adverse Effect.

(z) Title to Real and Personal Property. The Company and the Subsidiaries have good and valid title in fee simple to all items of real property and good and valid title to all

personal property described in the Registration Statement or Prospectus as being owned by it that are material to the businesses of the Company or such Subsidiary, in each case free and clear of all liens, encumbrances and claims, except those that (i) do not materially interfere with the use made and proposed to be made of such property by the Company or (ii) would, individually or in the aggregate, have a Material Adverse Effect. Any real property described in the Registration Statement or Prospectus as being leased by the Company or any Subsidiary is held by it under valid, existing and enforceable leases, except those that (A) do not materially interfere with the use made or proposed to be made of such property by the Company or the Subsidiaries or (B) would not have a Material Adverse Effect.

(aa) Intellectual Property. The Company and the Subsidiaries own or possess adequate enforceable rights to use all patents, patent applications, trademarks (both registered and unregistered), service marks, trade names, trademark registrations, service mark registrations, copyrights, licenses and know-how (including trade secrets and other unpatented and/or unpatentable proprietary or confidential information, systems or procedures) (collectively, the "Intellectual Property"), necessary for the conduct of its business as conducted as of the date hereof, except to the extent that the failure to own or possess adequate rights to use such Intellectual Property would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect; the Company and the Subsidiaries have not received any written notice of any claim of infringement or conflict which asserted Intellectual Property rights of others, which infringement or conflict, if the subject of an unfavorable decision, would result in a Material Adverse Effect; there are no pending, or to the Company's knowledge, threatened judicial proceedings or interference proceedings against the Company or any Subsidiary challenging the Company's or any of its Subsidiary's rights in or to or the validity of the scope of any of the Company's or any Subsidiary's patents, patent applications or proprietary information; the Company is not aware of any other entity or individual has any right or claim in any of the Company's or any Subsidiary's patents, patent applications or any patent to be issued therefrom by virtue of any contract, license or other agreement entered into between such entity or individual and the Company or any Subsidiary or by any non-contractual obligation, other than by written licenses granted by the Company or any Subsidiary; the Company and the Subsidiaries have not received any written notice of any claim challenging the rights of the Company or any Subsidiary in or to any Intellectual Property owned, licensed or optioned by the Company or any Subsidiary which claim, if the subject of an unfavorable decision would result in a Material Adverse Effect.

(bb) Environmental Laws. The Company and each of the Subsidiaries (i) is in compliance with any and all applicable federal, state, local and foreign laws, rules, regulations, decisions and orders relating to the protection of human health and safety, the environment or hazardous or toxic substances or wastes, pollutants or contaminants (collectively, "Environmental Laws"); (ii) has received and is in compliance with all permits, licenses or other approvals required of it under applicable Environmental Laws to conduct its businesses as described in the Registration Statement and the Prospectus; and (iii) has not received notice of any actual or potential liability for the investigation or remediation of any disposal or release of hazardous or toxic substances or wastes, pollutants or contaminants, except, in the case of any of clauses (i), (ii) or (iii) above, for any such failure to comply or failure to receive required permits, licenses, other approvals or liability as would not, individually or in the aggregate, have a Material Adverse Effect.

(cc) Disclosure Controls. The Company maintains systems of internal controls designed 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 is not aware of any material weaknesses in its internal control over financial reporting (other than as set forth in the Prospectus). Since the date of the latest audited financial statements of the Company included in the Prospectus, there has been no change in the Company's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting (other than as set forth in the Prospectus). The Company has established disclosure controls and procedures (as defined in Exchange Act Rules 13a-15 and 15d-15) for the Company and designed such disclosure controls and procedures to ensure that material information relating to the Company and the Subsidiaries is made known to the certifying officers by others within those entities, particularly during the period in which the Company's Annual Report on Form 10-K or Quarterly Report on Form 10-Q, as the case may be, is being prepared. The Company's certifying officers have evaluated the effectiveness of the Company's controls and procedures as of a date within 90 days prior to the filing date of the Form 10-K for the fiscal year most recently ended (such date, the "Evaluation Date"). The Company presented in its Form 10-K for the fiscal year most recently ended the conclusions of the certifying officers about the effectiveness of the disclosure controls and procedures based on their evaluations as of the Evaluation Date. Since the Evaluation Date, there have been no significant changes in the Company's internal controls (as such term is defined in Item 307(b) of Regulation S-K under the Securities Act) or, to the Company's knowledge, in other factors that could significantly affect the Company's internal controls. To the knowledge of the Company, the Company's "internal controls over financial reporting" and "disclosure controls and procedures" are effective.

(dd) Sarbanes-Oxley. The Company is not aware of any failure on the part of the Company or any of the Company's directors or officers, in their capacities as such, to comply with any applicable provisions of the Sarbanes-Oxley Act and the applicable rules and regulations promulgated thereunder in all material respects. Each of the principal executive officer and the principal financial officer of the Company (or each former principal executive officer of the Company and each former principal financial officer of the Company as applicable) has made all certifications required by Sections 302 and 906 of the Sarbanes-Oxley Act with respect to all reports, schedules, forms, statements and other documents required to be filed by it or furnished by it to the Commission during the past 12 months. For purposes of the preceding sentence, "principal executive officer" and "principal financial officer" shall have the meanings given to such terms in the Sarbanes-Oxley Act.

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

(ff) Labor Disputes. No labor disturbance by or dispute with employees of the Company or any Subsidiary exists or, to the knowledge of the Company, is threatened which would have a Material Adverse Effect

(gg) Investment Company Act. Neither the Company nor any Subsidiary is or after giving effect to the offering and sale of the Placement Shares, will it be an “investment company” or an entity “controlled” by an “investment company,” as such terms are defined in the Investment Company Act of 1940, as amended (the “Investment Company Act”).

(hh) Operations. The operations of the Company and the Subsidiaries are and have been conducted at all times in compliance with applicable financial record keeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all jurisdictions to which the Company or any Subsidiary is subject, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency (collectively, the “Money Laundering Laws”), except as would not have a Material Adverse Effect; 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 Subsidiary with respect to the Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

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

(jj) Underwriter Agreements. The Company is not a party to any agreement with an agent or underwriter for any other “at the market” or continuous equity transaction.

(kk) ERISA. To the knowledge of the Company, each material employee benefit plan, within the meaning of Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended (“ERISA”), that is maintained, administered or contributed to by the Company or any of its affiliates for employees or former employees of the Company or the Subsidiaries has been maintained in material compliance with its terms and the requirements of any applicable statutes, orders, rules and regulations, including but not limited to ERISA and the Internal Revenue Code of 1986, as amended (the “Code”); no prohibited transaction, within the meaning of Section 406 of ERISA or Section 4975 of the Code, has occurred which would result in a material liability to the Company with respect to any such plan excluding transactions effected pursuant to a statutory or administrative exemption; and for each such plan that is subject to the funding rules of Section 412 of the Code or Section 302 of ERISA, no “accumulated funding deficiency” as defined in Section 412 of the Code has been incurred, whether or not waived, and the fair market value of the assets of each such plan (excluding for these purposes accrued but unpaid contributions) exceeds the present value of all benefits accrued under such plan determined using reasonable actuarial assumptions.

(ll) Forward Looking Statements. No forward-looking statement (within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act) (a “Forward Looking Statement”) contained in the Registration Statement and the Prospectus has been made or reaffirmed without a reasonable basis or has been disclosed other than in good faith. The Forward Looking Statements incorporated by reference in the Registration Statement and the Prospectus from the Company’s Annual Report on Form 10-K for the fiscal year most recently ended (i) are within the coverage of the safe harbor for forward looking statements set forth in Section 27A of the Securities Act, Rule 175(b) under the Securities Act or Rule 3b-6 under the Exchange Act, as applicable, (ii) were made by the Company with a reasonable basis and in good faith and reflect the Company’s good faith commercially reasonable best estimate of the matters described therein, and (iii) have been prepared in accordance with Item 10 of Regulation S-K under the Securities Act.

(mm) Agent Purchases. The Company acknowledges and agrees that Agent has informed the Company that the Agent may, to the extent permitted under the Securities Act and the Exchange Act, purchase and sell Common Stock for its own account while this Agreement is in effect, provided, that (i) no such purchase or sales shall take place while a Placement Notice is in effect (except to the extent each Agent may engage in sales of Placement Shares purchased or deemed purchased from the Company as a “riskless principal” or in a similar capacity) and (ii) the Company shall not be deemed to have authorized or consented to any such purchases or sales by the Agent.

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

(oo) Insurance. The Company and the Subsidiaries carry, or are covered by, insurance in such amounts and covering such risks as the Company reasonably believes is adequate for the conduct of its business and as is customary for companies engaged in similar businesses in similar industries.

(pp) No Improper Practices. (i) Neither the Company, nor to the Company’s knowledge, the Subsidiaries, nor any of their respective executive officers has, in the past five years, made any unlawful contributions to any candidate for any political office (or failed fully to disclose any contribution in violation of law) or made any contribution or other payment to any official of, or candidate for, any federal, state, municipal, or foreign office or other person charged with similar public or quasi-public duty in violation of any law or of the character required to be disclosed in the Prospectus; (ii) no relationship, direct or indirect, exists between or among the Company or, to the Company’s knowledge, the Subsidiaries or any affiliate of them, on the one hand, and the directors, officers and stockholders of the Company or any Subsidiary, that is required by the Securities Act to be described in the Registration Statement and the Prospectus that is not so described; (iii) no relationship, direct or indirect, exists between or among the Company, the Subsidiaries or any affiliate of them, on the one hand, and the

directors, officers, stockholders or directors of the Company or the Subsidiaries, that is required by the rules of FINRA to be described in the Registration Statement and the Prospectus that is not so described; (iv) except as described in the Prospectus, there are no material outstanding loans or advances or material guarantees of indebtedness by the Company or any Subsidiary to or for the benefit of any of its officers or directors or any of the members of the families of any of them; and (v) neither the Company nor any Subsidiary has offered, or caused any placement agent to offer, Common Stock to any person with the intent to influence unlawfully (A) a customer or supplier of the Company or any Subsidiary to alter the customer's or supplier's level or type of business with the Company or any Subsidiary or (B) a trade journalist or publication to write or publish favorable information about the Company, any Subsidiary or any of its products or services, and, (vi) neither the Company nor the Subsidiaries nor, to the Company's knowledge, any employee or agent of the Company or the Subsidiaries has made any payment of funds of the Company or the Subsidiaries or received or retained any funds in violation of any law, rule or regulation (including, without limitation, the Foreign Corrupt Practices Act of 1977, which payment, receipt or retention of funds is of a character required to be disclosed in the Registration Statement or the Prospectus.

(qq) Compliance with Applicable Laws. The Company and the Subsidiaries (A) to its knowledge, are and at all times have been in material compliance with all statutes, rules and regulations applicable to the ownership, testing, development, manufacture, packaging, processing, use, distribution, marketing, labeling, promotion, sale, offer for sale, storage, import, export or disposal of any product under development, manufactured or distributed by the Company or the Subsidiaries ("Applicable Laws"), (B) has not received any Form 483 from the FDA, notice of adverse finding, warning letter, or other written correspondence or notice from the FDA, the European Medicines Agency (the "EMA"), or any other federal, state, local or foreign governmental or regulatory authority alleging or asserting material noncompliance with any Applicable Laws or any licenses, certificates, approvals, clearances, authorizations, permits and supplements or amendments thereto required by any such Applicable Laws ("Authorizations"), which would, individually or in the aggregate, result in a Material Adverse Effect; (C) possess all material Authorizations and such Authorizations are valid and in full force and effect and neither the Company nor the Subsidiaries are in material violation of any term of any such Authorizations; (D) has not received written notice of any claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from the FDA, the EMA, or any other federal, state, local or foreign governmental or regulatory authority or third party alleging that any Company product, operation or activity is in material violation of any Applicable Laws or Authorizations and has no knowledge that the FDA, the EMA, or any other federal, state, local or foreign governmental or regulatory authority or third party is considering any such claim, litigation, arbitration, action, suit, investigation or proceeding against the Company; (E) has not received notice that the FDA, EMA, or any other federal, state, local or foreign governmental or regulatory authority has taken, is taking or intends to take action to limit, suspend, modify or revoke any material Authorizations and has no knowledge that the FDA, EMA, or any other federal, state, local or foreign governmental or regulatory authority is considering such action; and (F) to its knowledge, has filed, obtained, maintained or submitted all reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by any Applicable Laws or Authorizations except where the failure to file such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments would not result in a Material Adverse Effect, and

that all such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were materially complete and correct on the date filed (or were corrected or supplemented by a subsequent submission).

(rr) Clinical Studies. All animal and other preclinical studies and clinical trials conducted by the Company or on behalf of the Company were, and, if still pending are, to the Company's knowledge, being conducted in all material respects in compliance with all Applicable Laws and in accordance with experimental protocols, procedures and controls generally used by qualified experts in the preclinical study and clinical trials of new drugs and biologics as applied to comparable products to those being developed by the Company; the descriptions of the results of such preclinical studies and clinical trials contained in the Registration Statement and the Prospectus are accurate in all material respects, and the Company has no knowledge of any other clinical trials or preclinical studies, the results of which reasonably call into question the clinical trial or preclinical study results described or referred to in the Registration Statement and the Prospectus when viewed in the context in which such results are described; and the Company has not received any written notices or correspondence from the FDA, the EMA, or any other domestic or foreign governmental agency requiring the termination or suspension of any preclinical studies or clinical trials conducted by or on behalf of the Company that are described in the Registration Statement and the Prospectus or the results of which are referred to in the Registration Statement and the Prospectus.

(ss) Compliance Program. The Company has established and administers a compliance program applicable to the Company, to assist the Company and the directors, officers and employees of the Company in complying with applicable regulatory guidelines (including, without limitation, those administered by the FDA, the EMA, and any other foreign, federal, state or local governmental or regulatory authority performing functions similar to those performed by the FDA or EMA); except where such noncompliance would not reasonably be expected to have a Material Adverse Effect.

(tt) Status Under the Securities Act. The Company was not and is not an ineligible issuer as defined in Rule 405 under the Securities Act at the times specified in Rules 164 and 433 under the Securities Act in connection with the offering of the Placement Shares.

(uu) No Misstatement or Omission in an Issuer Free Writing Prospectus. Each Issuer Free Writing Prospectus, as of its issue date and as of each Applicable Time (as defined in Section 24 below), did not, does not and will not include any information that conflicted, conflicts or will conflict with the information contained in the Registration Statement or the Prospectus, including any incorporated document deemed to be a part thereof that has not been superseded or modified. The foregoing sentence does not apply to statements in or omissions from any Issuer Free Writing Prospectus based upon and in conformity with written information furnished to the Company by the Agent specifically for use therein.

(vv) No Conflicts. Neither the execution of this Agreement, nor the issuance, offering or sale of the Placement Shares, nor the consummation of any of the transactions contemplated herein and therein, nor the compliance by the Company with the terms and provisions hereof and thereof will conflict with, or will result in a breach of, any of the terms and provisions of, or has constituted or will constitute a default under, or has resulted in or will result

in the creation or imposition of any lien, charge or encumbrance upon any property or assets of the Company pursuant to the terms of any contract or other agreement to which the Company may be bound or to which any of the property or assets of the Company is subject, except (i) such conflicts, breaches or defaults as may have been waived and (ii) such conflicts, breaches and defaults that would not have a Material Adverse Effect; nor will such action result (x) in any violation of the provisions of the organizational or governing documents of the Company, or (y) in any material violation of the provisions of any statute or any order, rule or regulation applicable to the Company or of any court or of any federal, state or other regulatory authority or other government body having jurisdiction over the Company.

(ww) OFAC. (i) The Company represents that, neither it nor any Subsidiary, or any director, officer, employee, agent, affiliate or representative of the Company or any Subsidiary, is a government, individual, or entity (in this paragraph (ss), "Person") that is, or is owned or controlled by a Person that is:

(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"), nor

(B) located, organized or resident in a country or territory that is the subject of Sanctions.

(ii) The Company represents and covenants that it 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) The Company represents and covenants that, except as detailed in the Prospectus, for the past 5 years, the Company has 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.

(xx) Stock Transfer Taxes. On each Settlement Date, all stock transfer or other taxes (other than income taxes) which are required to be paid in connection with the sale and transfer of the Placement Shares to be sold hereunder will be, or will have been, fully paid or provided for by the Company and all laws imposing such taxes will be or will have been fully complied with.

Any certificate signed by an officer of the Company and delivered to the Agent or to counsel for the Agent pursuant to or in connection with this Agreement shall be deemed to be a representation and warranty by the Company, as applicable, to the Agent as to the matters set forth therein.

7. Covenants of the Company. The Company covenants and agrees with Agent that:

(a) Registration Statement Amendments. After the date of this Agreement and during any period in which a Prospectus relating to any Placement Shares is required to be delivered by Agent under the Securities Act (including in circumstances where such requirement may be satisfied pursuant to Rule 172 under the Securities Act), (i) the Company will notify the Agent promptly of the time when any subsequent amendment to the Registration Statement, other than documents incorporated by reference, has been filed with the Commission and/or has become effective or any subsequent supplement to the Prospectus has been filed and of any request by the Commission for any amendment or supplement to the Registration Statement or Prospectus or for additional information, (ii) the Company will prepare and file with the Commission, promptly upon the Agent's request, any amendments or supplements to the Registration Statement or Prospectus that, in such Agent's reasonable opinion, may be necessary or advisable in connection with the distribution of the Placement Shares by the Agent (provided, however, that the failure of the Agent to make such request shall not relieve the Company of any obligation or liability hereunder, or affect the Agent's right to rely on the representations and warranties made by the Company in this Agreement and provided, further, that the only remedy the Agent shall have with respect to the failure to make such filing shall be to cease making sales under this Agreement until such amendment or supplement is filed); (iii) the Company will not file any amendment or supplement to the Registration Statement or Prospectus relating to the Placement Shares or a security convertible into the Placement Shares unless a copy thereof has been submitted to Agent within a reasonable period of time before the filing and the Agent has not objected thereto (provided, however, that (A) the failure of the Agent to make such objection shall not relieve the Company of any obligation or liability hereunder, or affect the Agent's right to rely on the representations and warranties made by the Company in this Agreement and (B) the Company has no obligation to provide the Agent any advance copy of such filing or to provide the Agent an opportunity to object to such filing if the filing does not name the Agent or does not relate to the transaction herein provided; and provided, further, that the only remedy Agent shall have with respect to the failure to by the Company to obtain such consent shall be to cease making sales under this Agreement) and the Company will furnish to the Agent at the time of filing thereof a copy of any document that upon filing is deemed to be incorporated by reference into the Registration Statement or Prospectus, except for those documents available via EDGAR; and (iv) the Company will cause each amendment or supplement to the Prospectus to be filed with the Commission as required pursuant to the applicable paragraph of Rule 424(b) of the Securities Act or, in the case of any document to be incorporated therein by reference, to be filed with the Commission as required pursuant to the Exchange Act, within the time period prescribed (the determination to file or not file any amendment or supplement with the Commission under this Section 7(a), based on the Company's reasonable opinion or reasonable objections, shall be made exclusively by the Company).

(b) Notice of Commission Stop Orders. The Company will advise the Agent, promptly after it receives notice or obtains knowledge thereof, of the issuance or threatened

issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement, of the suspension of the qualification of the Placement Shares for offering or sale in any jurisdiction, or of the initiation or threatening of any proceeding for any such purpose; and it will promptly use its commercially reasonable efforts to prevent the issuance of any stop order or to obtain its withdrawal if such a stop order should be issued. The Company will advise the Agent promptly after it receives any request by the Commission for any amendments to the Registration Statement or any amendment or supplements to the Prospectus or any Issuer Free Writing Prospectus or for additional information related to the offering of the Placement Shares or for additional information related to the Registration Statement, the Prospectus or any Issuer Free Writing Prospectus.

(c) Delivery of Prospectus; Subsequent Changes. During any period in which a Prospectus relating to the Placement Shares is required to be delivered by the Agent under the Securities Act with respect to the offer and sale of the Placement Shares, (including in circumstances where such requirement may be satisfied pursuant to Rule 172 under the Securities Act), the Company will comply with all requirements imposed upon it by the Securities Act, as from time to time in force, and to file on or before their respective due dates all reports and any definitive proxy or information statements required to be filed by the Company with the Commission pursuant to Sections 13(a), 13(c), 14, 15(d) or any other provision of or under the Exchange Act. If the Company has omitted any information from the Registration Statement pursuant to Rule 430A under the Securities Act, it will use its best efforts to comply with the provisions of and make all requisite filings with the Commission pursuant to said Rule 430A and to notify the Agent promptly of all such filings. If during such period any event occurs as a result of which the Prospectus as then amended or supplemented would include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances then existing, not misleading, or if during such period it is necessary to amend or supplement the Registration Statement or Prospectus to comply with the Securities Act, the Company will promptly notify Agent to suspend the offering of Placement Shares during such period and the Company will promptly amend or supplement the Registration Statement or Prospectus (at the expense of the Company) so as to correct such statement or omission or effect such compliance; provided, however, that the Company may delay the filing of any amendment or supplement, if in the judgment of the Company, it is in the best interests of the Company.

(d) Listing of Placement Shares. During any period in which the Prospectus relating to the Placement Shares is required to be delivered by the Agent under the Securities Act with respect to the offer and sale of the Placement Shares, the Company will use its reasonable best efforts to cause the Placement Shares to be listed on the Exchange and to qualify the Placement Shares for sale under the securities laws of such jurisdictions as Agent reasonably designate and to continue such qualifications in effect so long as required for the distribution of the Placement Shares; provided, however, that the Company shall not be required in connection therewith to qualify as a foreign corporation or dealer in securities or file a general consent to service of process in any jurisdiction.

(e) Delivery of Registration Statement and Prospectus. The Company will furnish to the Agent and its counsel (at the expense of the Company) copies of the Registration Statement, the Prospectus (including all documents incorporated by reference therein) and all

amendments and supplements to the Registration Statement or Prospectus that are filed with the Commission during any period in which a Prospectus relating to the Placement Shares is required to be delivered under the Securities Act (including all documents filed with the Commission during such period that are deemed to be incorporated by reference therein), in each case as soon as reasonably practicable and in such quantities as the Agent may from time to time reasonably request and, at Agent's request, will also furnish copies of the Prospectus to each exchange or market on which sales of the Placement Shares may be made; provided, however, that the Company shall not be required to furnish any document (other than the Prospectus) to the Agent to the extent such document is available on EDGAR.

(f) Earnings Statement. The Company will make generally available to its security holders as soon as practicable, but in any event not later than 15 months after the end of the Company's current fiscal quarter, an earnings statement covering a 12-month period that satisfies the provisions of Section 11(a) and Rule 158 of the Securities Act.

(g) Use of Proceeds. The Company will use the Net Proceeds as described in the Prospectus in the section entitled "Use of Proceeds."

(h) Notice of Other Sales. Without prior written notice to Agent, the Company will not, directly or indirectly, offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any Common Stock (other than the Placement Shares offered pursuant to this Agreement) or securities convertible into or exchangeable for Common Stock, warrants or any rights to purchase or acquire, Common Stock during the period beginning on the date on which any Placement Notice is delivered to Agent hereunder and ending on the third (3rd) Trading Day immediately following the final Settlement Date with respect to Placement Shares sold pursuant to such Placement Notice (or, if the Placement Notice has been terminated or suspended prior to the sale of all Placement Shares covered by a Placement Notice, the date of such suspension or termination); and will not in any other "at-the-market" transaction through an agent or underwriter offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any Common Stock (other than the Placement Shares offered pursuant to this Agreement) or securities convertible into or exchangeable for Common Stock, warrants or any rights to purchase or acquire, Common Stock prior to the later of the termination of this Agreement and the sixtieth (60th) day immediately following the final Settlement Date with respect to Placement Shares sold pursuant to such Placement Notice; provided, however, that such restrictions will not be required in connection with the Company's issuance or sale of (i) Common Stock, restricted stock units, options to purchase Common Stock or Common Stock issuable upon the exercise of options, pursuant to any employee or director stock option or benefits plan, stock ownership plan or dividend reinvestment plan (but not Common Stock subject to a waiver to exceed plan limits in its dividend reinvestment plan) of the Company whether now in effect or hereafter implemented, (ii) Common Stock issuable upon conversion of securities or the exercise of warrants, options, convertible notes or other rights in effect or outstanding, and disclosed in filings by the Company available on EDGAR or otherwise in writing to the Agent, and (iii) Common Stock or securities convertible into or exchangeable for shares of Common Stock issued in privately negotiated transactions to vendors, customers, or other commercial or strategic partners or potential commercial or strategic partners, as consideration for mergers, acquisitions, other business combinations, in connection with any credit facility or a firm commitment equity line with an investor acquiring securities for its own account and not with a view towards, or for resale in connection with, the public sale or distribution thereof, or in other transactions conducted in a manner so as not to be integrated with the offering of Common Stock hereby.

(i) Change of Circumstances. The Company will, at any time during the pendency of a Placement Notice advise the Agent promptly after it shall have received notice or obtained knowledge thereof, of any information or fact that would alter or affect in any material respect any opinion, certificate, letter or other document required to be provided to the Agent pursuant to this Agreement.

(j) Due Diligence Cooperation. The Company will cooperate with any reasonable due diligence review conducted by the Agent or its representatives in connection with the transactions contemplated hereby, including, without limitation, providing information and making available documents and senior corporate officers, during regular business hours and at the Company's principal offices, as the Agent may reasonably request.

(k) Required Filings Relating to Placement of Placement Shares. The Company agrees that on such dates as the Securities Act shall require, the Company will (i) file a prospectus supplement with the Commission under the applicable paragraph of Rule 424(b) under the Securities Act (each and every filing under Rule 424(b), a "Filing Date"), which prospectus supplement will set forth, within the relevant period, the amount of Placement Shares sold through the Agent, the Net Proceeds to the Company and the compensation payable by the Company to the Agent with respect to such Placement Shares, and (ii) deliver such number of copies of each such prospectus supplement to each exchange or market on which such sales were effected as may be required by the rules or regulations of such exchange or market.

(l) Representation Dates; Certificate. On the date of this Agreement and within five (5) trading days of each time the Company:

(i) files the Prospectus relating to the Placement Shares or amends or supplements (other than a prospectus supplement relating solely to an offering of securities other than the Placement Shares) the Registration Statement or the Prospectus relating to the Placement Shares by means of a post-effective amendment, sticker, or supplement but not by means of incorporation of documents by reference into the Registration Statement or the Prospectus relating to the Placement Shares;

(ii) files an annual report on Form 10-K under the Exchange Act (including any Form 10-K/A containing amended financial information or a material amendment to the previously filed Form 10-K);

(iii) files its quarterly reports on Form 10-Q under the Exchange Act; or

(iv) files a current report on Form 8-K containing amended financial information (other than information "furnished" pursuant to Items 2.02 or 7.01 of Form 8-K or to provide disclosure pursuant to Item 8.01 of Form 8-K relating to the reclassification of certain properties as discontinued operations in accordance with Statement of Financial Accounting Standards No. 144) under the Exchange Act;

(Each date of filing of one or more of the documents referred to in clauses (i) through (iv) shall be a “Representation Date.”)

the Company shall furnish the Agent (but in the case of clause (iv) above only if the Agent reasonably determines that the information contained in such Form 8-K is material) with a certificate, in the form attached hereto as Exhibit 7(l). The requirement to provide a certificate under this Section 7(l) shall be waived for any Representation Date occurring at a time at which no Placement Notice is pending, which waiver shall continue until the earlier to occur of the date the Company delivers a Placement Notice hereunder (which for such calendar quarter shall be considered a Representation Date) and the next occurring Representation Date; provided, however, that such waiver shall not apply for any Representation Date on which the Company files its annual report on Form 10-K. Notwithstanding the foregoing, if the Company subsequently decides to sell Placement Shares following a Representation Date when the Company relied on such waiver and did not provide the Agent with a certificate under this Section 7(l), then before the Company delivers the Placement Notice or the Agent sells any Placement Shares, the Company shall provide the Agent with a certificate, in the form attached hereto as Exhibit 7(l), dated the date of the Placement Notice.

(m) Legal Opinion. (1) On the date of this Agreement and (2) within five (5) Trading Days of each Representation Date with respect to which the Company is obligated to deliver a certificate in the form attached hereto as Exhibit 7(l) for which no waiver is applicable, the Company shall cause to be furnished to the Agent a written opinion of Morrison & Foerster LLP. (“Company Counsel”), or other counsel satisfactory to the Agent, in form and substance satisfactory to Agent and its counsel, provided, however, the Company shall be required to furnish to Agent no more than one opinion hereunder per calendar quarter; provided, further, that in lieu of such opinions for subsequent periodic filings under the Exchange Act, counsel may furnish the Agent with a letter (a “Reliance Letter”) to the effect that the Agent may rely on a prior opinion delivered under this Section 7(m) to the same extent as if it were dated the date of such letter (except that statements in such prior opinion shall be deemed to relate to the Registration Statement and the Prospectus as amended or supplemented as of the date of the Reliance Letter).

(n) Comfort Letter. (1) On the date of this Agreement and (2) within five (5) Trading Days of each Representation Date, other than pursuant to Section 7(l)(iii), with respect to which the Company is obligated to deliver a certificate in the form attached hereto as Exhibit 7(m) for which no waiver is applicable, the Company shall cause its independent accountants to furnish the Agent letters (the “Comfort Letters”), dated the date the Comfort Letter is delivered, which shall meet the requirements set forth in this Section 7(n); provided, that if requested by the Agent, the Company shall cause a Comfort Letter to be furnished to the Agent within ten (10) Trading Days of the date of occurrence of any material transaction or event, including the restatement of the Company’s financial statements. The Comfort Letter from the Company’s independent accountants shall be in a form and substance satisfactory to the Agent, (i) confirming that they are an independent public accounting firm within the meaning of the Securities Act and the PCAOB, (ii) stating, as of such date, the conclusions and findings of such firm with respect to the financial information and other matters ordinarily covered by accountants’ “comfort letters” to underwriters in connection with registered public offerings (the first such letter, the “Initial Comfort Letter”) and (iii) updating the Initial Comfort Letter with

any information that would have been included in the Initial Comfort Letter had it been given on such date and modified as necessary to relate to the Registration Statement and the Prospectus, as amended and supplemented to the date of such letter.

(o) Market Activities. The Company will not, directly or indirectly, (i) take any action designed to cause or result in, or that constitutes or might reasonably be expected to constitute, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of Common Stock or (ii) sell, bid for, or purchase Common Stock, or pay anyone any compensation for soliciting purchases of the Placement Shares other than the Agent.

(p) Investment Company Act. The Company will conduct its affairs in such a manner so as to reasonably ensure neither it nor the Subsidiaries will become, at any time prior to the termination of this Agreement, an “investment company,” as such term is defined in the Investment Company Act.

(q) No Offer to Sell. Other than an Issuer Free Writing Prospectus approved in advance by the Company and the Agent in its capacity as agent hereunder, neither the Agent nor the Company (including its agents and representatives, other than Agent in their capacity as such) will make, use, prepare, authorize, approve or refer to any written communication (as defined in Rule 405 under the Securities Act), required to be filed with the Commission, that constitutes an offer to sell or solicitation of an offer to buy Placement Shares hereunder.

(r) Blue Sky and Other Qualifications. The Company will use its commercially reasonable efforts, in cooperation with the Agent, to qualify the Placement Shares for offering and sale, or to obtain an exemption for the Placement Shares to be offered and sold, under the applicable securities laws of such states and other jurisdictions (domestic or foreign) as the Agent may designate and to maintain such qualifications and exemptions in effect for so long as required for the distribution of the Placement Shares (but in no event for less than one year from the date of this Agreement); *provided, however*, that the Company shall not be obligated to file any general consent to service of process or to qualify as a foreign corporation or as a dealer in securities in any jurisdiction in which it is not so qualified or to subject itself to taxation in respect of doing business in any jurisdiction in which it is not otherwise so subject. In each jurisdiction in which the Placement Shares have been so qualified or exempt, the Company will file such statements and reports as may be required by the laws of such jurisdiction to continue such qualification or exemption, as the case may be, in effect for so long as required for the distribution of the Placement Shares (but in no event for less than one year from the date of this Agreement).

(s) Sarbanes-Oxley Act. The Company will maintain and keep accurate books and records reflecting its assets and maintain internal accounting controls in a manner designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles and including those policies and procedures that (i) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the Company, (ii) provide reasonable assurance that transactions are recorded as necessary to permit the preparation of the Company’s consolidated financial

statements in accordance with generally accepted accounting principles, (iii) that receipts and expenditures of the Company are being made only in accordance with management's and the Company's directors' authorization, and (iv) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on its financial statements. The Company will maintain such controls and other procedures, including, without limitation, those required by Sections 302 and 906 of the Sarbanes-Oxley Act, and the applicable regulations thereunder that are designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Commission's rules and forms, including, without limitation, controls and procedures designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the Company's management, including its principal executive officer and principal financial officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure and to ensure that material information relating to the Company or the Subsidiaries is made known to them by others within those entities, particularly during the period in which such periodic reports are being prepared.

8. Payment of Expenses. The Company will pay all expenses incident to the performance of its obligations under this Agreement, including (i) the preparation, filing, including any fees required by the Commission, and printing of the Registration Statement (including financial statements and exhibits) as originally filed and of each amendment and supplement thereto, in such number as the Agent shall deem necessary, (ii) the printing and delivery to the Agent of this Agreement and such other documents as may be required in connection with the offering, purchase, sale, issuance or delivery of the Placement Shares, (iii) the preparation, issuance and delivery of the certificates, if any, for the Placement Shares to the Agent, including any stock or other transfer taxes and any capital duties, stamp duties or other duties or taxes payable upon the sale, issuance or delivery of the Placement Shares to the Agent, (iv) the fees and disbursements of the counsel, accountants and other advisors to the Company, (v) the reasonable out-of-pocket expenses of Agent, including fees and disbursements of counsel to the Agent, (vi) the printing and delivery to the Agent of copies of any Permitted Issuer Free Writing Prospectus (defined below) and the Prospectus and any amendments or supplements thereto in such number as the Agent shall deem necessary, (vii) the preparation, printing and delivery to the Agent of copies of the blue sky survey and any Canadian "wrapper" and any supplements thereto, in such number as the Agent shall deem necessary, (viii) the fees and expenses of the transfer agent and registrar for the Common Stock, (ix) the fees and expenses incident to any review by FINRA of the terms of the sale of the Placement Shares, including fees and expenses of counsel to the Agent, and (x) the fees and expenses incurred in connection with the listing of the Placement Shares on the Exchange. Notwithstanding the foregoing, in no event shall the amount of expenses reimbursed to Agent hereunder exceed \$35,000.

9. Conditions to Agent's Obligations. The obligations of the Agent hereunder with respect to a Placement will be subject to the continuing accuracy and completeness of the representations and warranties made by the Company herein, to the due performance by the Company of its obligations hereunder, to the completion by the Agent of a due diligence review

satisfactory to it in its reasonable judgment, and to the continuing satisfaction (or waiver by the Agent in its sole discretion) of the following additional conditions:

(a) Registration Statement Effective. The Registration Statement shall have become effective and shall be available for the (i) resale of all Placement Shares issued to the Agent and not yet sold by the Agent and (ii) sale of all Placement Shares contemplated to be issued by any Placement Notice.

(b) No Material Notices. None of the following events shall have occurred and be continuing: (i) receipt by the Company of any request for additional information from the Commission or any other federal or state governmental authority during the period of effectiveness of the Registration Statement, the response to which would require any post-effective amendments or supplements to the Registration Statement or the Prospectus; (ii) the issuance by the Commission or any other federal or state governmental authority of any stop order suspending the effectiveness of the Registration Statement or the initiation of any proceedings for that purpose; (iii) receipt by the Company of any notification with respect to the suspension of the qualification or exemption from qualification of any of the Placement Shares for sale in any jurisdiction or the initiation or threatening of any proceeding for such purpose; or (iv) the occurrence of any event that makes any material statement made in the Registration Statement or the Prospectus or any material document incorporated or deemed to be incorporated therein by reference untrue in any material respect or that requires the making of any changes in the Registration Statement, the Prospectus or documents so that, in the case of the Registration Statement, it will not contain any materially untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein not misleading and, that in the case of the Prospectus, it will not contain any materially untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(c) No Misstatement or Material Omission. Agent shall not have advised the Company that the Registration Statement or Prospectus, or any amendment or supplement thereto, contains an untrue statement of fact that in the Agent's reasonable opinion is material, or omits to state a fact that in the Agent's opinion is material and is required to be stated therein or is necessary to make the statements therein not misleading.

(d) Material Changes. Except as contemplated in the Prospectus, or disclosed in the Company's reports filed with the Commission, there shall not have been any material adverse change, on a consolidated basis, in the authorized capital stock of the Company or any Material Adverse Effect, or any development that could reasonably be expected to cause a Material Adverse Effect, or a downgrading in or withdrawal of the rating assigned to any of the Company's securities (other than asset backed securities) by any rating organization or a public announcement by any rating organization that it has under surveillance or review its rating of any of the Company's securities (other than asset backed securities), the effect of which, in the case of any such action by a rating organization described above, in the reasonable judgment of the Agent (without relieving the Company of any obligation or liability it may otherwise have), is so material as to make it impracticable or inadvisable to proceed with the offering of the Placement Shares on the terms and in the manner contemplated in the Prospectus.

(e) Legal Opinion. The Agent shall have received the opinions of Company Counsel required to be delivered pursuant Section 7(m) on or before the date on which such delivery of such opinion is required pursuant to Section 7(m).

(f) Comfort Letter. The Agent shall have received the Comfort Letter required to be delivered pursuant Section 7(n) on or before the date on which such delivery of such opinion is required pursuant to Section 7(n).

(g) Representation Certificate. The Agent shall have received the certificate required to be delivered pursuant to Section 7(l) on or before the date on which delivery of such certificate is required pursuant to Section 7(l).

(h) Secretary's Certificate. On the date of this Agreement, the Agent shall have received a certificate, signed on behalf of the Company by its corporate Secretary, in form and substance satisfactory to the Agent and its counsel.

(i) No Suspension. Trading in the Common Stock shall not have been suspended on the Exchange, and the Common Stock shall not have been delisted from the Exchange.

(j) Other Materials. On each date on which the Company is required to deliver a certificate pursuant to Section 7(l), the Company shall have furnished to the Agent such appropriate further information, certificates and documents as the Agent may reasonably request. All such opinions, certificates, letters and other documents will be in compliance with the provisions hereof. The Company will furnish the Agent with such conformed copies of such opinions, certificates, letters and other documents as the Agent shall reasonably request.

(k) Securities Act Filings Made. All filings with the Commission required by Rule 424 under the Securities Act to have been filed prior to the issuance of any Placement Notice hereunder shall have been made within the applicable time period prescribed for such filing by Rule 424.

(l) Approval for Listing. The Placement Shares shall either have been approved for listing quotation on the Exchange, subject only to notice of issuance, or the Company shall have filed an application for listing quotation of the Placement Shares on the Exchange at, or prior to, the issuance of any Placement Notice.

(m) No Termination Event. There shall not have occurred any event that would permit the Agent to terminate this Agreement pursuant to Section 12(a).

10. Indemnification and Contribution.

(a) Company Indemnification. The Company agrees to indemnify and hold harmless the Agent, its partners, members, directors, officers, employees and agents and each person, if any, who controls the Agent within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act as follows:

(i) against any and all loss, liability, claim, damage and expense whatsoever, as incurred, joint or several, arising out of or based upon any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement (or any amendment thereto), or the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein not misleading, or arising out of any untrue statement or alleged untrue statement of a material fact included in any related Issuer Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto), or the omission or alleged omission therefrom of a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading;

(ii) against any and all loss, liability, claim, damage and expense whatsoever, as incurred, joint or several, to the extent of the aggregate amount paid in settlement of any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or of any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission; provided that (subject to Section 10(d) below) any such settlement is effected with the written consent of the Agent, which consent shall not unreasonably be delayed or withheld; and

(iii) against any and all expense whatsoever, as incurred (including the fees and disbursements of counsel), reasonably incurred in investigating, preparing or defending against any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission, to the extent that any such expense is not paid under (i) or (ii) above,

provided, however, that this indemnity agreement shall not apply to any loss, liability, claim, damage or expense to the extent arising out of any untrue statement or omission or alleged untrue statement or omission made solely in reliance upon and in conformity with written information furnished to the Company by the Agent expressly for use in the Registration Statement (or any amendment thereto), or in any related Issuer Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto).

(b) Agent Indemnification. Agent agrees to indemnify and hold harmless the Company and its directors and each officer of the Company who signed the Registration Statement, and each person, if any, who (i) controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act or (ii) is controlled by or is under common control with the Company against any and all loss, liability, claim, damage and expense described in the indemnity contained in Section 10(a), as incurred, but only with respect to untrue statements or omissions, or alleged untrue statements or omissions, made in the Registration Statement (or any amendments thereto) or the Prospectus (or any amendment or supplement thereto) in reliance upon and in conformity with information relating to the Agent and furnished to the Company in writing by the Agent expressly for use therein.

(c) Procedure. Any party that proposes to assert the right to be indemnified under this Section 10 will, promptly after receipt of notice of commencement of any action against such party in respect of which a claim is to be made against an indemnifying party or parties under this Section 10, notify each such indemnifying party of the commencement of such

action, enclosing a copy of all papers served, but the omission so to notify such indemnifying party will not relieve the indemnifying party from (i) any liability that it might have to any indemnified party otherwise than under this Section 10 and (ii) any liability that it may have to any indemnified party under the foregoing provision of this Section 10 unless, and only to the extent that, such omission results in the forfeiture of substantive rights or defenses by the indemnifying party. If any such action is brought against any indemnified party and it notifies the indemnifying party of its commencement, the indemnifying party will be entitled to participate in and, to the extent that it elects by delivering written notice to the indemnified party promptly after receiving notice of the commencement of the action from the indemnified party, jointly with any other indemnifying party similarly notified, to assume the defense of the action, with counsel reasonably satisfactory to the indemnified party, and after notice from the indemnifying party to the indemnified party of its election to assume the defense, the indemnifying party will not be liable to the indemnified party for any legal or other expenses except as provided below and except for the reasonable costs of investigation subsequently incurred by the indemnified party in connection with the defense. The indemnified party will have the right to employ its own counsel in any such action, but the fees, expenses and other charges of such counsel will be at the expense of such indemnified party unless (1) the employment of counsel by the indemnified party has been authorized in writing by the indemnifying party, (2) the indemnified party has reasonably concluded (based on advice of counsel) that there may be legal defenses available to it or other indemnified parties that are different from or in addition to those available to the indemnifying party, (3) a conflict or potential conflict exists (based on advice of counsel to the indemnified party) between the indemnified party and the indemnifying party (in which case the indemnifying party will not have the right to direct the defense of such action on behalf of the indemnified party) or (4) the indemnifying party has not in fact employed counsel to assume the defense of such action within a reasonable time after receiving notice of the commencement of the action, in each of which cases the reasonable fees, disbursements and other charges of counsel will be at the expense of the indemnifying party or parties. It is understood that the indemnifying party or parties shall not, in connection with any proceeding or related proceedings in the same jurisdiction, be liable for the reasonable fees, disbursements and other charges of more than one separate firm admitted to practice in such jurisdiction at any one time for all such indemnified party or parties. All such fees, disbursements and other charges will be reimbursed by the indemnifying party promptly after the indemnifying party receives a written invoice relating to fees, disbursements and other charges in reasonable detail. An indemnifying party will not, in any event, be liable for any settlement of any action or claim effected without its written consent. No indemnifying party shall, without the prior written consent of each indemnified party, settle or compromise or consent to the entry of any judgment in any pending or threatened claim, action or proceeding relating to the matters contemplated by this Section 10 (whether or not any indemnified party is a party thereto), unless such settlement, compromise or consent (1) includes an unconditional release of each indemnified party from all liability arising out of such litigation, investigation, proceeding or claim and (2) 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) Contribution. In order to provide for just and equitable contribution in circumstances in which the indemnification provided for in the foregoing paragraphs of this Section 10 is applicable in accordance with its terms but for any reason is held to be unavailable from the Company or the Agent, the Company and the Agent will contribute to the total losses,

claims, liabilities, expenses and damages (including any investigative, legal and other expenses reasonably incurred in connection with, and any amount paid in settlement of, any action, suit or proceeding or any claim asserted, but after deducting any contribution received by the Company from persons other than the Agent, such as persons who control the Company within the meaning of the Securities Act, officers of the Company who signed the Registration Statement and directors of the Company, who also may be liable for contribution) to which the Company and the Agent may be subject in such proportion as shall be appropriate to reflect the relative benefits received by the Company on the one hand and the Agent on the other hand. The relative benefits received by the Company on the one hand and the Agent on the other hand shall be deemed to be in the same proportion as the total net proceeds from the sale of the Placement Shares (before deducting expenses) received by the Company bear to the total compensation received by the Agent (before deducting expenses) from the sale of Placement Shares on behalf of the Company. If, but only if, the allocation provided by the foregoing sentence is not permitted by applicable law, the allocation of contribution shall be made in such proportion as is appropriate to reflect not only the relative benefits referred to in the foregoing sentence but also the relative fault of the Company, on the one hand, and the Agent, on the other hand, with respect to the statements or omission that resulted in such loss, claim, liability, expense or damage, or action in respect thereof, as well as any other relevant equitable considerations with respect to such offering. Such relative fault shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact relates to information supplied by the Company or the Agent, the intent of the parties and their relative knowledge, access to information and opportunity to correct or prevent such statement or omission. The Company and the Agent agree that it would not be just and equitable if contributions pursuant to this Section 10(e) were to be determined by pro rata allocation or by any other method of allocation that does not take into account the equitable considerations referred to herein. The amount paid or payable by an indemnified party as a result of the loss, claim, liability, expense, or damage, or action in respect thereof, referred to above in this Section 10(e) shall be deemed to include, for the purpose of this Section 10(e), any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending any such action or claim to the extent consistent with Section 10(c) hereof. Notwithstanding the foregoing provisions of this Section 10(e), the Agent shall not be required to contribute any amount in excess of the commissions received by it under this Agreement and no person found guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) will be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. For purposes of this Section 10(e), any person who controls a party to this Agreement within the meaning of the Securities Act, and any officers, directors, partners, employees or agents of the Agent, will have the same rights to contribution as that party, and each officer of the Company who signed the Registration Statement will have the same rights to contribution as the Company, subject in each case to the provisions hereof. Any party entitled to contribution, promptly after receipt of notice of commencement of any action against such party in respect of which a claim for contribution may be made under this Section 10(d), will notify any such party or parties from whom contribution may be sought, but the omission to so notify will not relieve that party or parties from whom contribution may be sought from any other obligation it or they may have under this Section 10(e) except to the extent that the failure to so notify such other party materially prejudiced the substantive rights or defenses of the party from whom contribution is sought. Except for a settlement entered into pursuant to the last sentence of Section 10(c) hereof, no party will be liable for contribution with respect to any action or claim settled without its written consent if such consent is required pursuant to Section 10(c) hereof.

11. Additional Covenants.

(a) Representations and Covenants of the Agent. The Agent represents and warrants that it is duly registered as a broker-dealer under FINRA, the Exchange Act and the applicable statutes and regulations of each state in which the Placement Shares will be offered and sold, except such states in which the Agent is exempt from registration or such registration is not otherwise required. The Agent shall continue, for the term of this Agreement, to be duly registered as a broker-dealer under FINRA, the Exchange Act and the applicable statutes and regulations of each state in which the Placement Shares will be offered and sold, except such states in which the Agent is exempt from registration or such registration is not otherwise required, during the term of this Agreement. The Agent shall comply with all applicable law and regulations, including but not limited to Regulation M, in connection with the transactions contemplated by this Agreement, including the issuance and sale through the Agent of the Placement Shares.

(b) Representations and Agreements to Survive Delivery. The indemnity and contribution agreements contained in Section 10 of this Agreement and all representations and warranties of the Company herein or in certificates delivered pursuant hereto shall survive, as of their respective dates, regardless of (i) any investigation made by or on behalf of the Agent, any controlling persons, or the Company (or any of their respective officers, directors or controlling persons), (ii) delivery and acceptance of the Placement Shares and payment therefor or (iii) any termination of this Agreement.

12. Termination.

(a) The Agent may terminate this Agreement, by notice to the Company, as hereinafter specified at any time (1) if there has been, since the time of execution of this Agreement or since the date as of which information is given in the Prospectus, any change, or any development or event involving a prospective change, in the condition, financial or otherwise, or in the business, properties, earnings, results of operations or prospects of the Company, whether or not arising in the ordinary course of business, which individually or in the aggregate, in the sole judgment of the Agent is material and adverse and makes it impractical or inadvisable to market the Placement Shares or to enforce contracts for the sale of the Placement Shares, (2) if there has occurred any material adverse change in the financial markets in the United States or the international financial markets, any outbreak of hostilities or escalation thereof or other calamity or crisis or any change or development involving a prospective change in national or international political, financial or economic conditions, in each case the effect of which is such as to make it, in the judgment of the Agent, impracticable or inadvisable to market the Placement Shares or to enforce contracts for the sale of the Placement Shares, (3) if trading in the Common Stock has been suspended or limited by the Commission or the Exchange, or if trading generally on the Exchange has been suspended or limited, or minimum prices for trading have been fixed on the Exchange, (4) if any suspension of trading of any securities of the Company on any exchange or in the over-the-counter market shall have occurred and be

continuing, (5) if a major disruption of securities settlements or clearance services in the United States shall have occurred and be continuing, or (6) if a banking moratorium has been declared by either U.S. Federal or New York authorities. Any such termination shall be without liability of any party to any other party except that the provisions of Section 8 (Expenses), Section 10 (Indemnification), Section 11 (Survival of Representations), Section 17 (Governing Law; Consent to Jurisdiction) and Section 18 (Waiver of Jury Trial) hereof shall remain in full force and effect notwithstanding such termination. If the Agent elects to terminate this Agreement as provided in this Section 12(a), the Agent shall provide the required notice as specified in Section 13 (Notices).

(b) The Company shall have the right, by giving ten (10) days notice as hereinafter specified to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 8, Section 10, Section 11, Section 17 and Section 18 hereof shall remain in full force and effect notwithstanding such termination.

(c) The Agent shall have the right, by giving ten (10) days notice as hereinafter specified to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 8, Section 10, Section 11, Section 17 and Section 18 hereof shall remain in full force and effect notwithstanding such termination.

(d) Unless earlier terminated pursuant to this Section 12, this Agreement shall automatically terminate upon the issuance and sale of all of the Placement Shares through the Agent on the terms and subject to the conditions set forth herein; provided that the provisions of Section 8, Section 10, Section 11, Section 17 and Section 18 hereof shall remain in full force and effect notwithstanding such termination.

(e) This Agreement shall remain in full force and effect unless terminated pursuant to Sections 12(a), (b), (c), or (d) above or otherwise by mutual agreement of the parties; provided, however, that any such termination by mutual agreement shall in all cases be deemed to provide that Section 8, Section 10, Section 11, Section 17 and Section 18 shall remain in full force and effect.

(f) Any termination of this Agreement shall be effective on the date specified in such notice of termination; provided, however, that such termination shall not be effective until the close of business on the date of receipt of such notice by the Agent or the Company, as the case may be. If such termination shall occur prior to the Settlement Date for any sale of Placement Shares, such Placement Shares shall settle in accordance with the provisions of this Agreement.

(g) Subject to the additional limitations set forth in Section 8 of this Agreement, in the event of termination of this Agreement prior to the sale of any Placement Shares, the Agent shall be entitled only to reimbursement of its out-of-pocket expenses actually incurred.

13. Notices. All notices or other communications required or permitted to be given by any party to any other party pursuant to the terms of this Agreement shall be in writing, unless otherwise specified, and if sent to the Agent, shall be delivered to:

JonesTrading Institutional Services LLC
155 Federal Street, Suite 1002
Boston, MA 02110
Attn: Steve Chmielewski, Esq.
E-mail: steve@jonestrading.com

and

LeClairRyan, A Professional Corporation
One Riverfront Plaza
1037 Raymond Boulevard
Newark, NJ 07102
Attn: James T. Seery
E-mail: james.seery@leclairryan.com

and if to the Company, shall be delivered to:

Catalyst Biosciences, Inc.
260 Littlefield Ave.
South San Francisco, California
Attn: Fletcher Payne
E-mail: fpayne@catbio.com

with a copy to:

Morrison & Foerster LLP
755 Page Mill Road
Palo Alto, CA 94304
Attn: Stephen Thau
E-mail: sthau@mfo.com

Each party to this Agreement may change such address for notices by sending to the parties to this Agreement written notice of a new address for such purpose. Each such notice or other communication shall be deemed given (i) when delivered personally or by verifiable facsimile transmission (with an original to follow) on or before 4:30 p.m., New York City time, on a Business Day or, if such day is not a Business Day, on the next succeeding Business Day, (ii) on the next Business Day after timely delivery to a nationally-recognized overnight courier and (iii) on the Business Day actually received if deposited in the U.S. mail (certified or registered mail, return receipt requested, postage prepaid).

An electronic communication ("Electronic Notice") shall be deemed written notice for purposes of this Section 13 if sent to the electronic mail address specified by the receiving party

under separate cover. Electronic Notice shall be deemed received at the time the party sending Electronic Notice receives verification of receipt by the receiving party. Any party receiving Electronic Notice may request and shall be entitled to receive the notice on paper, in a nonelectronic form ("Nonelectronic Notice") which shall be sent to the requesting party within ten (10) days of receipt of the written request for Nonelectronic Notice.

14. Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the Company and the Agent and their respective successors and the affiliates, controlling persons, officers and directors referred to in Section 10 hereof. References to any of the parties contained in this Agreement shall be deemed to include the successors and permitted assigns of such party. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and permitted assigns any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement. Neither party may assign its rights or obligations under this Agreement without the prior written consent of the other party; provided, however, that the Agent may assign its rights and obligations hereunder to an affiliate thereof without obtaining the Company's consent.

15. Adjustments for Stock Splits. The parties acknowledge and agree that all share-related numbers contained in this Agreement shall be adjusted to take into account any stock split, stock dividend or similar event effected with respect to the Placement Shares.

16. Entire Agreement; Amendment; Severability. This Agreement (including all schedules and exhibits attached hereto and Placement Notices issued pursuant hereto) constitutes the entire agreement and supersedes all other prior and contemporaneous agreements and undertakings, both written and oral, among the parties hereto with regard to the subject matter hereof. Neither this Agreement nor any term hereof may be amended except pursuant to a written instrument executed by the Company and the Agent. In the event that any one or more of the provisions contained herein, or the application thereof in any circumstance, is held invalid, illegal or unenforceable as written by a court of competent jurisdiction, then such provision shall be given full force and effect to the fullest possible extent that it is valid, legal and enforceable, and the remainder of the terms and provisions herein shall be construed as if such invalid, illegal or unenforceable term or provision was not contained herein, but only to the extent that giving effect to such provision and the remainder of the terms and provisions hereof shall be in accordance with the intent of the parties as reflected in this Agreement.

17. GOVERNING LAW AND TIME; WAIVER OF JURY TRIAL. THIS AGREEMENT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK WITHOUT REGARD TO THE PRINCIPLES OF CONFLICTS OF LAWS. SPECIFIED TIMES OF DAY REFER TO NEW YORK CITY TIME. THE COMPANY HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY.

18. **CONSENT TO JURISDICTION.** EACH PARTY HEREBY IRREVOCABLY SUBMITS TO THE NON-EXCLUSIVE JURISDICTION OF THE STATE AND FEDERAL COURTS SITTING IN THE CITY OF NEW YORK, BOROUGH OF MANHATTAN, FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION WITH ANY TRANSACTION CONTEMPLATED HEREBY, AND HEREBY IRREVOCABLY WAIVES, AND AGREES NOT TO ASSERT IN ANY SUIT, ACTION OR PROCEEDING, ANY CLAIM THAT IT IS NOT PERSONALLY SUBJECT TO THE JURISDICTION OF ANY SUCH COURT, THAT SUCH SUIT, ACTION OR PROCEEDING IS BROUGHT IN AN INCONVENIENT FORUM OR THAT THE VENUE OF SUCH SUIT, ACTION OR PROCEEDING IS IMPROPER. EACH PARTY HEREBY IRREVOCABLY WAIVES PERSONAL SERVICE OF PROCESS AND CONSENTS TO PROCESS BEING SERVED IN ANY SUCH SUIT, ACTION OR PROCEEDING BY MAILING A COPY THEREOF (CERTIFIED OR REGISTERED MAIL, RETURN RECEIPT REQUESTED) TO SUCH PARTY AT THE ADDRESS IN EFFECT FOR NOTICES TO IT UNDER THIS AGREEMENT AND AGREES THAT SUCH SERVICE SHALL CONSTITUTE GOOD AND SUFFICIENT SERVICE OF PROCESS AND NOTICE THEREOF. NOTHING CONTAINED HEREIN SHALL BE DEEMED TO LIMIT IN ANY WAY ANY RIGHT TO SERVE PROCESS IN ANY MANNER PERMITTED BY LAW.

19. Use of Information. The Agent may not use any information gained in connection with this Agreement and the transactions contemplated by this Agreement, including due diligence, to advise any party with respect to transactions not expressly approved by the Company.

20. Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Delivery of an executed Agreement by one party to the other may be made by facsimile transmission.

21. Effect of Headings. The section and Exhibit headings herein are for convenience only and shall not affect the construction hereof.

22. Permitted Free Writing Prospectuses.

The Company represents, warrants and agrees that, unless it obtains the prior consent of the Agent, and the Agent represents, warrants and agrees that, unless it obtains the prior consent of the Company, it has not made and will not make any offer relating to the Placement Shares that would constitute an Issuer Free Writing Prospectus, or that would otherwise constitute a “free writing prospectus,” as defined in Rule 405, required to be filed with the Commission. Any such free writing prospectus consented to by the Agent or by the Company, as the case may be, is hereinafter referred to as a “Permitted Free Writing Prospectus.” The Company represents and warrants that it has treated and agrees that it will treat each Permitted Free Writing Prospectus as an “issuer free writing prospectus,” as defined in Rule 433, and has complied and will comply with the requirements of Rule 433 applicable to any Permitted Free Writing Prospectus, including timely filing with the Commission where required, legending and record keeping.

23. Absence of Fiduciary Relationship.

The Company acknowledges and agrees that:

(a) The Agent is acting solely as agent in connection with the public offering of the Placement Shares and in connection with each transaction contemplated by this Agreement and the process leading to such transactions, and no fiduciary or advisory relationship between the Company or any of its respective affiliates, stockholders (or other equity holders), creditors or employees or any other party, on the one hand, and the Agent, on the other hand, has been or will be created in respect of any of the transactions contemplated by this Agreement, irrespective of whether or not the Agent has advised or is advising the Company on other matters, and the Agent has no obligation to the Company with respect to the transactions contemplated by this Agreement except the obligations expressly set forth in this Agreement;

(b) it is capable of evaluating and understanding, and understands and accepts, the terms, risks and conditions of the transactions contemplated by this Agreement;

(c) the Agent has not provided any legal, accounting, regulatory or tax advice with respect to the transactions contemplated by this Agreement and it has consulted its own legal, accounting, regulatory and tax advisors to the extent it has deemed appropriate;

(d) it is aware that the Agent and its affiliates are engaged in a broad range of transactions which may involve interests that differ from those of the Company and the Agent has no obligation to disclose such interests and transactions to the Company by virtue of any fiduciary, advisory or agency relationship or otherwise; and

(e) it waives, to the fullest extent permitted by law, any claims it may have against the Agent for breach of fiduciary duty or alleged breach of fiduciary duty in connection with the sale of Placement Shares under this Agreement and agrees that the Agent shall not have any liability (whether direct or indirect, in contract, tort or otherwise) to it in respect of such a fiduciary duty claim or to any person asserting a fiduciary duty claim on its behalf or in right of it or the Company, employees or creditors of Company, other than in respect of the Agent’s obligations under this Agreement and to keep information provided by the Company to the Agent and the Agent’s counsel confidential to the extent not otherwise publicly-available.

24. Definitions.

As used in this Agreement, the following terms have the respective meanings set forth below:

“Applicable Time” means (i) each Representation Date, (ii) the time of each sale of any Placement Shares pursuant to this Agreement, and (iii) each Settlement Date.

“Business Day” shall mean any day on which the Exchange and commercial banks in the City of New York are open for business.

“Issuer Free Writing Prospectus” means any “issuer free writing prospectus,” as defined in Rule 433, relating to the Placement Shares that (1) is required to be filed with the Commission by the Company, (2) is a “road show” that is a “written communication” within the meaning of Rule 433(d)(8)(i) whether or not required to be filed with the Commission, or (3) is exempt from filing pursuant to Rule 433(d)(5)(i) because it contains a description of the Placement Shares or of the offering that does not reflect the final terms, in each case in the form filed or required to be filed with the Commission or, if not required to be filed, in the form retained in the Company’s records pursuant to Rule 433(g) under the Securities Act Regulations.

“Rule 172,” “Rule 405,” “Rule 415,” “Rule 424,” “Rule 424(b),” “Rule 430B,” and “Rule 433” refer to such rules under the Securities Act Regulations.

“Trading Day” means any day on which shares of Common Stock are purchased and sold on the Exchange.

All references in this Agreement to financial statements and schedules and other information that is “contained,” “included” or “stated” in the Registration Statement or the Prospectus (and all other references of like import) shall be deemed to mean and include all such financial statements and schedules and other information that is incorporated by reference in the Registration Statement or the Prospectus, as the case may be.

All references in this Agreement to the Registration Statement, the Prospectus or any amendment or supplement to any of the foregoing shall be deemed to include the copy filed with the Commission pursuant to EDGAR; all references in this Agreement to any Issuer Free Writing Prospectus (other than any Issuer Free Writing Prospectuses that, pursuant to Rule 433, are not required to be filed with the Commission) shall be deemed to include the copy thereof filed with the Commission pursuant to EDGAR; and all references in this Agreement to “supplements” to the Prospectus shall include, without limitation, any supplements, “wrappers” or similar materials prepared in connection with any offering, sale or private placement of any Placement Shares by the Agent outside of the United States.

If the foregoing correctly sets forth the understanding between the Company and the Agent, please so indicate in the space provided below for that purpose, whereupon this letter shall constitute a binding agreement between the Company and the Agent.

Very truly yours,

CATALYST BIOSCIENCES, INC.

By: /s/ Nassim Usman

Name: Nassim Usman

Title: Chief Executive Officer

ACCEPTED as of the date first-above written:

JONESTRADING INSTITUTIONAL SERVICES LLC

By: /s/ Trent McNair

Name: Trent McNair

Title: Chief Financial Officer

FORM OF PLACEMENT NOTICE

From: CATALYST BIOSCIENCES, INC.
To: JONESTRADING INSTITUTIONAL SERVICES LLC
Attention:
Subject: Placement Notice
Date: , 20

Gentlemen:

Pursuant to the terms and subject to the conditions contained in the Capital on Demand™ Offering Sales Agreement between, CATALYST BIOSCIENCES, INC. (the “Company”) and JONESTRADING INSTITUTIONAL SERVICES LLC (“Agent”, dated March , 2016, the Company hereby requests that the Agent sell up to of the Company’s Common Stock, \$0.001 par value per share, at a minimum market price of \$ per share, during the time period beginning [month, day, time] and ending [month, day, time].

Compensation

The Company shall pay to the Agent in cash, upon each sale of Placement Shares pursuant to this Agreement, an amount equal to 3.0% of the gross proceeds from each sale of Placement Shares.

Notice Parties

The Company

Nassim Usman

nusman@catbio.com

Fletcher Payne

fpayne@catbio.com

The Agent

Moe Cohen

moec@jonestrading.com

Bryan Turley

bturley@jonestrading.com

Subsidiaries

Catalyst Bio, Inc.

CATALYST BIOSCIENCES, INC.

AND

Trustee

INDENTURE

Dated as of

Debt Securities

Reconciliation and tie between
Trust Indenture Act of 1939, as amended,
and the Indenture

<u>Trust Indenture Act Section</u>	<u>Indenture Section</u>
(S)310(a)(1)	6.8
(a)(2)	6.8
(b)	6.9
(S)312(a)	7.1
(b)	7.2
(c)	7.2
(S)313(a)	7.3
(b)(2)	7.3
(c)	7.3
(d)	7.3
(S)314(a)	7.4
(c)(1)	1.2
(c)(2)	1.2
(e)	1.2
(f)	1.2
(S)316(a) (last sentence)	1.1
(a)(1)(A)	5.2, 5.12
(a)(1)(B)	5.13
(b)	5.8
(S)317(a)(1)	5.3
(a)(2)	5.4
(b)	10.3
(S)318(a)	1.8

Note: This reconciliation and tie shall not, for any purpose, be deemed to be part of the Indenture.

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INDENTURE (the “Indenture”), dated as of _____, between Catalyst Biosciences, Inc., a corporation existing under the laws of the State of Delaware (the “Company”), and _____, as trustee (the “Trustee”).

RECITALS

The Company has duly authorized the execution and delivery of this Indenture to provide for the issuance from time to time of its debentures, notes or other evidences of indebtedness (hereinafter called the “Securities”), unlimited as to principal amount, to bear such rates of interest, to mature at such time or times, to be issued in one or more series and to have such other provisions as shall be fixed as hereinafter provided.

All things necessary to make this Indenture a valid and legally binding agreement of the Company, in accordance with its terms, have been done.

NOW, THEREFORE, THIS INDENTURE WITNESSETH:

For and in consideration of the premises and the purchase of the Securities by the Holders (as herein defined) thereof, it is mutually covenanted and agreed, for the equal and proportionate benefit of all Holders of the Securities or of any series thereof as follows:

ARTICLE 1

DEFINITIONS AND OTHER PROVISIONS OF GENERAL APPLICATION

Section 1.1 Definitions; Rules of Construction

Except as otherwise expressly provided in or pursuant to this Indenture or unless the context otherwise requires, for all purposes of this Indenture:

(1) the terms defined in this Article 1 have the meanings assigned to them in this Article 1, and include the plural as well as the singular;

(2) all other terms used herein that are defined in the Trust Indenture Act, either directly or by reference therein, have the meanings assigned to them therein;

(3) all accounting terms not otherwise defined herein have the meanings assigned to them in accordance with generally accepted accounting principles and, except as otherwise herein expressly provided, the terms “generally accepted accounting principles” or “GAAP” with respect to any computation required or permitted hereunder shall mean such accounting principles as are generally accepted as of the date hereof;

(4) the words “herein,” “hereof,” “hereto” and “hereunder” and other words of similar import refer to this Indenture as a whole and not to any particular Article, Section or other subdivision;

(5) the word “or” is always used inclusively (for example, the phrase “A or B” means “A or B or both,” not “either A or B but not both”);

(6) provisions apply to successive events and transactions;

(7) any reference to gender includes the masculine, feminine and the neuter, as the case may be;

(8) references to agreements and other instruments include subsequent amendments thereto and restatements thereof;

(9) “including” means “including without limitation”;

(10) all exhibits are incorporated by reference herein and expressly made a part of this Indenture;

(11) all references to articles, sections and exhibits (and subparts thereof) are to this Indenture; and

(12) any transaction or event shall be considered “permitted by” or made “in accordance with” or “in compliance with” this Indenture or any particular provision thereof if such transaction or event is not expressly prohibited by this Indenture or such provision, as the case may be.

Certain terms used principally in certain Articles hereof are defined in those Articles.

“Act,” when used with respect to any Holders, has the meaning specified in Section 1.4.

“Additional Amounts” means any additional amounts which are required by this Indenture or by any Security, under circumstances specified herein or therein, to be paid by the Company in respect of certain taxes, assessments or other governmental charges imposed on Holders specified therein and which are owing to such Holders.

“Additional Interest” means any additional interest which is required by any Security to be paid as a result of a failure on the part of the Company duly to observe or perform the covenants and agreements set forth in Section 7.4.

“Affiliate” of any specified Person means any other Person directly or indirectly controlling or controlled by or under direct or indirect common control with such specified Person. For the purposes of this definition, “control,” when used with respect to any specified Person, means the power to direct the management and policies of such Person, directly or indirectly, whether through the ownership of voting securities, by contract or otherwise; and the terms “controlling” and “controlled” have the meanings correlative to the foregoing.

“Applicable Procedures” means, with respect to any transfer or exchange of or for beneficial interests in any Global Security, the rules and procedures of the Depository that apply to such transfer or exchange at the relevant time.

“Authenticating Agent” means any Person authorized by the Trustee pursuant to Section 6.12 to act on behalf of the Trustee to authenticate Securities of one or more series.

“Authorized Newspaper” means a newspaper, in an official language of the place of publication or in the English language, customarily published on each day that is a Business Day in the place of publication, whether or not published on days that are Legal Holidays in the place of publication, and of general circulation in each place in connection with which the term is used or in the financial community of each such place. Where successive publications are required to be made in Authorized Newspapers, the successive publications may be made in the same or in different newspapers in the same city meeting the foregoing requirements and in each case on any day that is a Business Day in the place of publication. If it shall be impractical in the opinion of the Trustee to make any publication of any notice required hereby in an Authorized Newspaper, any publication or other notice in lieu thereof which is made or given with the approval of the Trustee shall constitute a sufficient publication of such notice.

“Board of Directors” means:

(1) with respect to the Company, the board of directors of the Company or any committee of the board of directors of the Company duly authorized to act generally or in any particular respect for the Company under this Indenture;

(2) with respect to any other corporation, the board of directors of the corporation or any authorized committee thereof;

(3) with respect to a limited liability company, the managing member or managing members of such limited liability company or any authorized committee thereof;

(4) with respect to a partnership, the board of directors of the general partner of the partnership or any authorized committee thereof; and

(5) with respect to any other Person, the board or committee of such Person serving a similar function.

“Board Resolution” means a copy of one or more resolutions (which may be standing resolutions), certified by the Secretary or an Assistant Secretary of the Company to have been duly adopted by the Board of Directors of the Company and to be in full force and effect on the date of such certification, and delivered to the Trustee.

“Business Day” means, unless otherwise specified with respect to any Securities pursuant to Section 3.1, each day that is not a Saturday, Sunday or other day on which banking institutions in New York, New York or another Place of Payment are authorized or required by law, regulation or executive order to close.

“Commission” means the Securities and Exchange Commission, as from time to time constituted, created under the Exchange Act or any successor agency.

“Common Stock” includes any stock of any class of the Company which has no preference in respect of dividends or of amounts payable in the event of any voluntary or involuntary liquidation, dissolution or winding up of the Company.

“Company” means the Person named as the “Company” in the first paragraph of this Indenture until a successor Person shall have become such pursuant to the applicable provisions of this Indenture, and thereafter “Company” shall mean such successor Person.

“Company Request” and “Company Order” mean, respectively, a written request or order, as the case may be, signed in the name of the Company by the Chairman of the Board of Directors of the Company, a Vice Chairman, the President, a Vice President, the Treasurer, the Assistant Treasurer, the Secretary or the Assistant Secretary or other person authorized by resolution of the Board of Directors of the Company, and delivered to the Trustee.

“Corporate Trust Office” means the designated office of the Trustee at which the corporate trust business of the Trustee shall at any particular time be administered, which office at the date of original execution of this Indenture is located at.

“Corporation” includes corporations and limited liability companies and, except for purposes of Article 8, associations, companies (other than limited liability companies) and business trusts.

“Currency” means, with respect to any payment, deposit or other transfer in respect of the principal of or any premium or interest on or any Additional Amounts with respect to any Security, Dollars or Foreign Currency, as the case may be, in which such payment, deposit or other transfer is required to be made by or pursuant to the terms hereof or such Security and, with respect to any other payment, deposit or transfer pursuant to or contemplated by the terms hereof or such Security, means Dollars.

“CUSIP number” means the alphanumeric designation assigned to a Security by Standard & Poor’s Corporation, CUSIP Service Bureau.

“Defaulted Interest” has the meaning specified in Section 3.7.

“Definitive Security” means a certificated Security registered in the name of the Holder thereof (other than a Depository or its nominee) issued under this Indenture pursuant to Section 3.1 and Section 3.5.

“Dollars” or “\$” means a dollar or other equivalent unit of legal tender for payment of public or private debts in the United States of America.

“Event of Default” has the meaning specified in Section 5.1.

“Exchange Act” means the Securities Exchange Act of 1934, as amended, or any successor thereto, in each case as amended from time to time.

“Foreign Currency” means any currency, currency unit or composite currency, including, without limitation, the euro, issued by the government of one or more countries other than the United States of America or by any recognized confederation or association of such governments.

“GAAP” means generally accepted accounting principles in the United States, which are in effect from time to time.

“Global Security” means a Security issued under this Indenture in global form pursuant to Section 3.1, bearing the legend set forth in Section 2.3 and deposited with, or on behalf of, and registered in the name of, the Depository or its nominee.

“Government Obligations” means securities which are (i) direct obligations of the United States of America or the other government or governments in the confederation which issued the Foreign Currency in which the principal of or any premium or interest on any Security or any Additional Amounts in respect thereof shall be payable, in each case where the payment or payments thereunder are supported by the full faith and credit of the United States or such government or governments or (ii) obligations of a Person controlled or supervised by and acting as an agency or instrumentality of the United States of America or such other government or governments, in each case where the timely payment or payments thereunder are unconditionally guaranteed as a full faith and credit obligation by the United States of America or such other government or governments, and which, in the case of (i) or

(ii), are not callable or redeemable at the option of the issuer or issuers thereof, and shall also include a Depositary receipt issued by a bank or trust company as custodian with respect to any such Government Obligation or a specific payment of interest on or principal of or other amount with respect to any such Government Obligation held by such custodian for the account of the holder of a Depositary receipt, provided that (except as required by law) such custodian is not authorized to make any deduction from the amount payable to the holder of such Depositary receipt from any amount received by the custodian in respect of the Government Obligation or the specific payment of interest on or principal of or other amount with respect to the Government Obligation evidenced by such Depositary receipt.

“Holder” means, in the case of any Registered Security, the Person in whose name such Security is registered in the Security Register.

“Indenture” means this instrument as it may from time to time be supplemented or amended by one or more indentures supplemental hereto entered into pursuant to the applicable provisions hereof and, with respect to any Security of any series, by the terms

and provisions of such Security established pursuant to Section 3.1 (as such terms and provisions may be amended pursuant to the applicable provisions hereof); provided, however, that, if at any time more than one Person is acting as Trustee under this instrument, “Indenture” shall mean, with respect to any one or more series of Securities for which such Person is Trustee, this instrument as originally executed or as it may from time to time be supplemented or amended by one or more indentures supplemental hereto entered into pursuant to the applicable provisions hereof and shall include the terms of those particular series of Securities for which such Person is Trustee established pursuant to Section 3.1, exclusive, however, of any provisions or terms which relate solely to other series of Securities for which such Person is not Trustee, regardless of when such terms or provisions were adopted.

“Independent Registered Public Accounting Firm” means a firm of accountants that, with respect to the Company and any other obligor under the Securities, is an independent registered public accounting firm within the meaning of the Securities Act of 1933, as amended, and the rules and regulations promulgated by the Commission thereunder, who may be the independent registered public accounting firm regularly retained by the Company or who may be another independent registered public accounting firm. Such firm shall be entitled to rely upon any Opinion of Counsel as to the interpretation of any legal matters relating to this Indenture or certificates required to be provided hereunder.

“Indexed Security” means a Security the terms of which provide that the principal amount thereof payable at Stated Maturity may be more or less than the principal face amount thereof at original issuance.

“Indirect Participant” means an entity that, with respect to any Depositary, clears through or maintains a direct or indirect, custodial relationship with a Participant.

“interest” means any interest specified in any Security as being payable with respect to that Security, including any Additional Interest when used with respect to a Security which provides for the payment of Additional Interest, and, with respect to any Original Issue Discount Security, which by its terms bears interest only after Maturity, means interest payable after Maturity and, when used with respect to a Security which provides for the payment of Additional Amounts pursuant to Section 10.4, includes such Additional Amounts.

“Interest Payment Date” means, with respect to any Security, the Stated Maturity of an installment of interest on such Security.

“Judgment Currency” has the meaning specified in Section 1.16.

“Legal Holiday” has the meaning specified in Section 1.14.

“Maturity” means, with respect to any Security, the date on which the principal of such Security or an installment of principal becomes due and payable as provided in or pursuant to this Indenture, whether at the Stated Maturity or by declaration of acceleration, notice of redemption or repurchase, notice of option to elect repayment or otherwise, and includes the Redemption Date.

“New York Banking Day” has the meaning specified in Section 1.16.

“Office” or “Agency” means, with respect to any Securities, an office or agency of the Company maintained or designated as a Place of Payment for such Securities pursuant to Section 10.2 or any other office or agency of the Company maintained or designated for such Securities pursuant to Section 10.2 or, to the extent designated or required by Section 10.2 in lieu of such office or agency, the Corporate Trust Office of the Trustee.

“Officer” means, with respect to any Person, the Chairman of the Board of Directors, a Vice Chairman, the Chief Executive Officer, the President, any Vice President (without regard to qualifiers such as “Executive” or “Senior”), the Chief Operating Officer, the Chief Financial Officer, the Treasurer, an Assistant Treasurer, the Controller, the Secretary or an Assistant Secretary of such Person or other Person authorized by resolution of the Board of Directors of such Person.

“Officer’s Certificate” means a certificate signed by an Officer, that, if applicable, complies with the requirements of Section 314(e) of the Trust Indenture Act and is delivered to the Trustee.

“Opinion of Counsel” means a written opinion of counsel, who may be an employee of or counsel for the Company or other counsel that, if applicable, complies with the requirements of Section 314(e) of the Trust Indenture Act.

“Original Issue Discount Security” means a Security issued pursuant to this Indenture that provides, at any time prior to the final Stated Maturity of such Security, for declaration of an amount less than the principal amount thereof to be due and payable upon acceleration pursuant to Section 5.2.

“Outstanding” means, when used with respect to any Securities, as of the date of determination, all such Securities theretofore authenticated and delivered under this Indenture, except:

(1) any such Security theretofore cancelled by the Trustee or delivered to the Trustee for cancellation including Securities tendered and exchanged for other securities of the Company;

(2) any such Security of any series for which payment at the Maturity thereof money in the necessary amount has been theretofore deposited pursuant hereto (other than pursuant to Section 4.2) with the Trustee or any Paying Agent (other than the Company) in trust or set aside and segregated in trust by the Company (if the Company shall act as its own Paying Agent) for the Holders of such series of Securities, provided that, if such Securities are to be redeemed, notice of such redemption has been duly given pursuant to this Indenture or provision therefor satisfactory to the Trustee has been made;

(3) any such Security of any series with respect to which the Company has effected defeasance or covenant defeasance pursuant to the terms hereof, except to the extent provided in Section 4.2;

(4) any such Security which has been paid pursuant to Section 3.6 or in exchange for or in lieu of which other Securities have been authenticated and delivered pursuant to this Indenture, unless there shall have been presented to the Trustee proof satisfactory to it that such Security is held by a “protected purchaser” (as such term is defined in the New York Uniform Commercial Code) in whose hands such Security is a valid obligation of the Company; and

(5) any such Security converted or exchanged as contemplated by this Indenture into Common Stock or other securities, cash or other property, if the terms of such Security provide for such conversion or exchange pursuant to Section 3.1;

provided, however, that in determining whether the Holders of the requisite principal amount of Outstanding Securities of any series have given any request, demand, authorization, direction, notice, consent or waiver hereunder or are present at a meeting of Holders of Securities of such series for quorum purposes, (i) the principal amount of an Original Issue Discount Security that may be counted in making such determination and that shall be deemed to be Outstanding for such purposes shall be equal to the amount of the principal thereof that pursuant to the terms of such Original Issue Discount Security would be declared (or shall have been declared to be) due and payable upon a declaration of acceleration thereof pursuant to Section 5.2 at the time of such determination, and (ii) the principal amount of any Indexed Security that may be counted in making such determination and that shall be deemed Outstanding for such purpose shall be equal to the principal face amount of such Indexed Security at original issuance, unless otherwise provided in or pursuant to this Indenture, and (iii) the principal amount of a Security denominated in a Foreign Currency shall be the Dollar equivalent, determined on the date of original issuance of such Security, of the principal amount (or, in the case of an Original Issue Discount Security, the Dollar equivalent on the date of original issuance of such Security of the amount determined as provided in (i) above) of such Security, and (iv) Securities owned by the Company or any other obligor upon the Securities or any Affiliate of the Company or such other obligor, shall be disregarded and deemed not to be Outstanding, except that, in determining whether the Trustee shall be protected in making any such determination or relying upon any such request, demand, authorization, direction, notice, consent or waiver, only Securities which a Responsible Officer actually knows to be so owned shall be so disregarded. Securities so owned which shall have been pledged in good faith may be regarded as Outstanding if the pledgee establishes to the satisfaction of a Responsible Officer (A) the pledgee’s right so to act with respect to such Securities and (B) that the pledgee is not the Company or any other obligor upon the Securities or an Affiliate of the Company or such other obligor.

“Participant” means, with respect to the Depository, a Person who has an account with the Depository.

“Paying Agent” means any Person authorized by the Company to pay the principal of, or any premium or interest on, or any Additional Amounts with respect to, any Security on behalf of the Company.

“Person” or “person” means any individual, corporation, partnership, joint venture, joint-stock company, association, trust, unincorporated organization, limited liability company or government or any agency or political subdivision thereof.

“Place of Payment” means, with respect to any Security, the place or places where the principal of, or any premium or interest on, or any Additional Amounts with respect to such Security are payable as provided in or pursuant to this Indenture or such Security.

“Predecessor Security” of any particular Security means every previous Security evidencing all or a portion of the same indebtedness as that evidenced by such particular Security; and, for the purposes of this definition, any Security authenticated and delivered under Section 3.6 in exchange for or in lieu of a lost, destroyed, mutilated or stolen Security shall be deemed to evidence the same indebtedness as the lost, destroyed, mutilated or stolen Security.

“Redemption Date” means, with respect to any Security or portion thereof to be redeemed, each date fixed for such redemption by or pursuant to this Indenture or such Security.

“Redemption Price” means, with respect to any Security or portion thereof to be redeemed, the price at which it is to be redeemed including, if applicable, accrued and unpaid interest and Additional Amounts as determined by or pursuant to this Indenture or such Security.

“Registered Security” means any Security established pursuant to Section 2.1 which is registered in the Security Register.

“Regular Record Date” for the interest payable on any Registered Security on any Interest Payment Date therefor means the date, if any, specified in or pursuant to this Indenture or such Security as the “Regular Record Date.”

“Required Currency” has the meaning specified in Section 1.16.

“Responsible Officer” means any officer of the Trustee in its Corporate Trust Office with direct responsibility for the administration of this Indenture, and also, with respect to a particular corporate trust matter, any other officer of the Trustee to whom such matter is referred because of such officer’s knowledge of and familiarity with the particular subject.

“Security” or “Securities” means any note or notes, bond or bonds, debenture or debentures, or any other evidences of indebtedness, as the case may be, authenticated and delivered under this Indenture; provided, however, that, if at any time there is more than one Person acting as Trustee under this Indenture, “Securities,” with respect to any such Person, shall mean Securities authenticated and delivered under this Indenture, exclusive, however, of Securities of any series as to which such Person is not Trustee.

“Security Register,” “Security Registrar” and “Registrar” have the respective meanings specified in Section 3.5.

“series” means a series of Securities established under this Indenture.

“Special Record Date” for the payment of any Defaulted Interest on any Registered Security means a date fixed by the Trustee pursuant to Section 3.7.

“Stated Maturity” means, with respect to any Security or any installment of principal thereof or interest thereon or any Additional Amounts with respect thereto, the date established by or pursuant to this Indenture or such Security as the fixed date on which the principal of such Security or such installment of principal or interest is, or such Additional Amounts are, due and payable.

“Trust Indenture Act” or “TIA” means the Trust Indenture Act of 1939, as amended, and any reference herein to the Trust Indenture Act or a particular provision thereof shall mean such Act or provision, as the case may be, as amended or replaced from time to time or as supplemented from time to time by rules or regulations adopted by the Commission under or in furtherance of the purposes of such Act or provision, as the case may be.

“Trustee” means the Person named as the “Trustee” in the first paragraph of this instrument until a successor Trustee shall have become such with respect to one or more series of Securities pursuant to the applicable provisions of this Indenture, and thereafter

“Trustee” shall mean each Person who is then a Trustee hereunder; provided, however, that if at any time there is more than one such Person, “Trustee” shall mean each such Person and as used with respect to the Securities of any series shall mean only the Trustee with respect to the Securities of such series.

“United States” means, except as otherwise provided in or pursuant to this Indenture or any Security, the United States of America (including the states thereof and the District of Columbia), its territories and possessions and other areas subject to its jurisdiction.

“United States Alien” means, except as otherwise provided in or pursuant to this Indenture or any Security, any Person who, for United States federal income tax purposes, is a foreign corporation, a non-resident alien individual, a non-resident alien fiduciary of a foreign estate or trust, or a foreign partnership one or more of the members of which is, for United States federal income tax purposes, a foreign corporation, a non-resident alien individual or a non-resident alien fiduciary of a foreign estate or trust.

“U.S. Depository” or “Depository” means, with respect to any Security issuable or issued in the form of one or more Global Securities, the Person designated as U.S. Depository or Depository by the Company in or pursuant to this Indenture, which Person

must be, to the extent required by applicable law or regulation, a clearing agency registered under the Exchange Act and, if so provided with respect to any Security, any successor to such Person. If at any time there is more than one such Person, “U.S. Depository” or “Depository” shall mean, with respect to any Securities, the qualifying entity which has been appointed with respect to such Securities.

“Vice President” means, when used with respect to the Company or the Trustee, any vice president, whether or not designated by a number or a word or words added before or after the title “Vice President.”

Section 1.2 Compliance Certificates and Opinions

Except as otherwise expressly provided in or pursuant to this Indenture, upon any application or request by the Company to the Trustee to take any action under any provision of this Indenture, the Company shall furnish to the Trustee an Officer’s Certificate stating that all conditions precedent, if any, provided for in this Indenture relating to the proposed action have been complied with and an Opinion of Counsel stating that, in the opinion of such counsel, all such conditions precedent, if any, have been complied with, except that in the case of any such application or request as to which the furnishing of such documents or any of them is specifically required by any provision of this Indenture relating to such particular application or request, no additional certificate or opinion need be furnished.

Every certificate or opinion with respect to compliance with a condition or covenant or covenant provided for in this Indenture (other than a certificate delivered pursuant to Section 10.6) shall include:

- (1) a statement that each individual signing such certificate or opinion has read such condition or covenant and the definitions herein relating thereto;
- (2) a brief statement as to the nature and scope of the examination or investigation upon which the statements or opinions contained in such certificate or opinion are based;
- (3) a statement that, in the opinion of each such individual, he or she has made such examination or investigation as is necessary to enable him or her to express an informed opinion as to whether or not such condition or covenant has been complied with; and
- (4) a statement as to whether, in the opinion of each such individual, such condition or covenant has been complied with.

Section 1.3 Form of Documents Delivered to Trustee

In any case where several matters are required to be certified by, or covered by an opinion of, any specified Person, it is not necessary that all such matters be certified by, or covered by the opinion of, only one such Person, or that they be so certified or covered by only one document, but one such Person may certify or give an opinion with respect to some matters and one or more other such Persons as to other matters, and any such Person may certify or give an opinion as to such matters in one or several documents.

Any certificate or opinion of an Officer of the Company may be based, insofar as it relates to legal matters, upon an Opinion of Counsel, unless such Officer knows that the opinion with respect to the matters upon which his certificate or opinion is based are

erroneous. Any such Opinion of Counsel may be based, insofar as it relates to factual matters, upon a certificate or opinion of, or representations by, an Officer or Officers of the Company stating that the information with respect to such factual matters is in the possession of the Company unless such counsel knows that the certificate or opinion or representations with respect to such matters are erroneous. Any certificate, statement or opinion of an Officer of the Company or any Opinion of Counsel may be based, insofar as it relates to accounting matters, upon a certificate or opinion of or representations by an accountant or firm of accountants in the employ of the Company, unless such Officer or counsel, as the case may be, knows that the certificate or opinion or representations with respect to the accounting matters upon which his certificate, statement or opinion may be based as aforesaid are erroneous.

Where any Person is required to make, give or execute two or more applications, requests, consents, certificates, statements, opinions or other instruments under this Indenture or any Security, they may, but need not, be consolidated and form one instrument.

Section 1.4 Acts of Holders

(1) Any request, demand, authorization, direction, notice, consent, waiver or other action provided by or pursuant to this Indenture to be given or taken by Holders may be embodied in and evidenced by one or more instruments (including instruments in electronic, digital or other machine-readable form) of substantially similar tenor signed by such Holders (whether in person or through signatures in electronic, digital or other machine-readable form) or by an agent duly appointed in writing (including writings in electronic, digital or other machine-readable form) or may be embodied in and evidenced by the record of Holders voting in favor thereof, either in person or by proxies duly appointed in writing, at any meeting of Holders duly called and held in accordance with the provisions of Article 15, or a combination of such instruments or record. Except as herein otherwise expressly provided, such action shall become effective when such instrument or instruments or record or both are delivered to the Trustee and, where it is hereby expressly required, to the Company. Such instrument or instruments or record or both (and the action embodied therein and evidenced thereby) are herein sometimes referred to as the “Act” of the Holders signing such instrument or instruments or so voting at any such meeting. Proof of execution of any such instrument or of a writing appointing any such agent, or of the holding by any Person of a Security, shall be sufficient for any purpose of this Indenture and (subject to Section 315 of the Trust Indenture Act) conclusive in favor of the Trustee and the Company and any agent of the Trustee or the Company, if made in the manner provided in this Section 1.4. The record of any meeting of Holders of Securities shall be proved in the manner provided in Section 15.6.

Without limiting the generality of this Section 1.4, unless otherwise provided in or pursuant to this Indenture, a Holder, including a U.S. Depository that is a Holder of a Global Security, may make, give or take, by a proxy or proxies, duly appointed in writing, any request, demand, authorization, direction, notice, consent, waiver or other Act provided in or pursuant to this Indenture or the Securities to be made, given or taken by Holders, and a U.S. Depository that is a Holder of a Global Security may provide its proxy or proxies to the beneficial owners of interests in any such Global Security through such U.S. Depository’s standing instructions and customary practices.

The Trustee may fix a record date for the purpose of determining the Persons who are beneficial owners of interests in any permanent Global Security held by a U.S. Depository entitled under the procedures of such U.S. Depository to make, give or take, by a proxy or proxies duly appointed in writing, any request, demand, authorization, direction, notice, consent, waiver or other Act provided in or pursuant to this Indenture to be made, given or taken by Holders.

(2) The fact and date of the execution by any Person of any such instrument or writing referred to in this Section 1.4 may be proved in any reasonable manner which the Trustee deems sufficient and in accordance with such reasonable rules as the Trustee may determine; and the Trustee may in any instance require further proof with respect to any of the matters referred to in this Section 1.4.

(3) The ownership, principal amount and serial numbers of Registered Securities held by any Person, and the date of the commencement and the date of the termination of holding the same, shall be proved by the Security Register.

(4) If the Company shall solicit from the Holders of any Registered Securities any request, demand, authorization, direction, notice, consent, waiver or other Act, the Company may, at its option (but is not obligated to), by Board Resolution, fix in advance a record date for the determination of Holders of Registered Securities entitled to give such request, demand, authorization, direction, notice, consent, waiver or other Act. If such a record date is fixed, such request, demand, authorization, direction, notice, consent, waiver or other Act may be given before or after such record date, but only the Holders of Registered Securities of record at the close of business on such record date shall be deemed to be Holders for the purpose of determining whether Holders of the requisite proportion of Outstanding Securities have authorized or agreed or consented to such request, demand, authorization, direction, notice, consent, waiver or other Act, and for that purpose the Outstanding Securities shall be computed as of such record date; provided that no such authorization, agreement or consent by the Holders of Registered Securities shall be deemed effective unless it shall become effective pursuant to the provisions of this Indenture not later than six months after the record date.

(5) Any request, demand, authorization, direction, notice, consent, waiver or other Act by the Holder of any Security shall bind every future Holder of the same Security and the Holder of every Security issued upon the registration of transfer thereof or in exchange therefor or in lieu thereof in respect of anything done or suffered to be done by the Trustee, any Security Registrar, any Paying Agent or the Company in reliance thereon, whether or not notation of such Act is made upon such Security.

Section 1.5 Notices, etc., to Trustee and Company

Any request, demand, authorization, direction, notice, consent, waiver or other Act of Holders or other document provided or permitted by this Indenture to be made upon, given or furnished to, or filed with:

(1) the Trustee by any Holder or the Company shall be sufficient for every purpose hereunder if made, given, furnished or filed in writing (which may be via facsimile) to or with the Trustee at its Corporate Trust Office; or

(2) the Company by the Trustee or any Holder shall be sufficient for every purpose hereunder (unless otherwise herein expressly provided) if in writing and mailed, first-class postage prepaid or airmail postage prepaid if sent from outside the United States, to the Company addressed to the attention of its Treasurer (with a copy to the General Counsel) at the address of its principal office specified in the first paragraph of this instrument or at any other address previously furnished in writing to the Trustee by the Company.

Section 1.6 Notice to Holders of Securities; Waiver

Except as otherwise expressly provided in or pursuant to this Indenture, where this Indenture provides for notice to Holders of Securities of all or any series of any event, such notice shall be sufficiently given to Holders of Registered Securities of such series if in writing and mailed, first-class postage prepaid, to each Holder of a Registered Security affected by such event, at his address as it appears in the Security Register, not later than the latest date, and not earlier than the earliest date, prescribed for the giving of such notice. In any case where notice to Holders of Registered Securities is given by mail, neither the failure to mail such notice, nor any defect in any notice so mailed, to any particular Holder of a Registered Security shall affect the sufficiency of such notice with respect to other Holders of Registered Securities given as provided herein. Any notice which is mailed in the manner herein provided shall be conclusively presumed to have been duly given or provided. In the case by reason of the suspension of regular mail service or by reason of any other cause it shall be impracticable to give such notice by mail, then such notification as shall be made with the approval of the Trustee shall constitute a sufficient notification for every purpose hereunder.

Where this Indenture provides for notice in any manner, such notice may be waived in writing by the Person entitled to receive such notice, either before or after the event, and such waiver shall be the equivalent of such notice. Waivers of notice by Holders of Securities shall be filed with the Trustee, but such filing shall not be a condition precedent to the validity of any action taken in reliance upon such waiver.

Section 1.7 Language of Notices

Any request, demand, authorization, direction, notice, consent, election or waiver required or permitted under this Indenture shall be in the English language, except that, if the Company so elects, any published notice may be in an official language of the country of publication (with a copy in English to be provided to the Trustee).

Section 1.8 Incorporation by Reference of Trust Indenture Act; Trust Indenture Act Controls

(a) If any provision hereof limits, qualifies or conflicts with the duties that would be imposed by any of Sections 310 to 317 of the Trust Indenture Act through operation of Section 318(c) thereof on any person, such imposed duties shall control. The following Trust Indenture Act terms have the following meanings:

“indenture securities” means the Securities;

“indenture security holder” means a Holder;

“indenture to be qualified” means this Indenture;

“indenture trustee” or “institutional trustee” means the Trustee; and

“obligor” on the indenture securities means the Company and any other obligor on the indenture securities.

All other Trust Indenture Act terms used in this Indenture that are defined by the Trust Indenture Act, defined in the Trust Indenture Act by reference to another statute or defined by SEC Rule have the meanings assigned to them by such definitions.

(b) If any provision of this Indenture limits, qualifies or conflicts with another provision which is required to be included in this Indenture by the Trust Indenture Act, the provision required by the Trust Indenture Act shall control.

Section 1.9 Effect of Headings and Table of Contents

The Article and Section headings herein and the Table of Contents are for convenience only and shall not affect the construction hereof.

Section 1.10 Successors and Assigns

All covenants and agreements in this Indenture by the Company shall bind its successors and assigns, whether so expressed or not.

Section 1.11 Separability Clause

In case any provision in this Indenture or any Security shall be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

Section 1.12 Benefits of Indenture

Nothing in this Indenture or any Security, express or implied, shall give to any Person, other than the parties hereto, any Security Registrar, any Paying Agent, any Authentication Agent and their successors hereunder and the Holders of Securities, any benefit or any legal or equitable right, remedy or claim under this Indenture.

Section 1.13 Governing Law; Waiver of Trial by Jury

This Indenture and the Securities shall be governed by and construed in accordance with the laws of the State of New York applicable to agreements made or instruments entered into and, in each case, performed in said state. Each of the Company and the Trustee hereby irrevocably waives, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to this Indenture, the Securities or the transactions contemplated hereby.

Section 1.14 Legal Holidays

Unless otherwise specified in or pursuant to this Indenture or any Securities, in any case where any Interest Payment Date, Stated Maturity or Maturity of any Security, or the last date on which a Holder has the right to convert or exchange Securities of a series that are convertible or exchangeable shall not be a Business Day (a "Legal Holiday") at any Place of Payment, then (notwithstanding any other provision of this Indenture or any Security other than a provision in any Security that specifically states that such provision shall apply in lieu hereof) payment need not be made at such Place of Payment on such date, and such Securities need not be converted or exchanged on such date but such payment may be made, and such Securities may be converted or exchanged, on the next succeeding day that is a Business Day at such Place of Payment with the same force and effect as if made on the Interest Payment Date or at the Stated Maturity or Maturity or on such last day for conversion or exchange, and no interest shall accrue on the amount payable on such date or at such time for the period from and after such Interest Payment Date, Stated Maturity, Maturity or last day for conversion or exchange, as the case may be, to the next succeeding Business Day. If this Indenture provides for a time period that ends or requires performance of any non-payment obligation by a day that is not a Business Day, then such time period shall instead be deemed to end on, and such obligation shall instead be performed by, the next succeeding Business Day.

Section 1.15 Counterparts

This Indenture may be executed in several counterparts, each of which shall be an original and all of which shall constitute but one and the same instrument.

Section 1.16 Judgment Currency

The Company agrees, to the fullest extent that it may effectively do so under applicable law, that (a) if for the purpose of obtaining judgment in any court it is necessary to convert the sum due in respect of the principal of, or premium or interest, if any, or

Additional Amounts on the Securities of any series (the “Required Currency”) into a currency in which a judgment will be rendered (the “Judgment Currency”), the rate of exchange used shall be the rate at which in accordance with normal banking procedures the Trustee could purchase in The City of New York the requisite amount of the Required Currency with the Judgment Currency on the New York Banking Day preceding the day on which a final unappealable judgment is given and (b) its obligations under this Indenture to make payments in the Required Currency (i) shall not be discharged or satisfied by any tender, or any recovery pursuant to any judgment (whether or not entered in accordance with clause (a)), in any currency other than the Required Currency, except to the extent that such tender or recovery shall result in the actual receipt, by the payee, of the full amount of the Required Currency expressed to be payable in respect of such payments, (ii) shall be enforceable as an alternative or additional cause of action for the purpose of recovering in the Required Currency the amount, if any, by which such actual receipt shall fall short of the full amount of the Required Currency so expressed to be payable and (iii) shall not be affected by judgment being obtained for any other sum due under this Indenture. For purposes of the foregoing, “New York Banking Day” means any day except a Saturday, Sunday or a Legal Holiday in The City of New York or a day on which banking institutions in The City of New York are authorized or obligated by law, regulation or executive order to be closed.

Section 1.17 Limitation on Individual Liability

No recourse under or upon any obligation, covenant or agreement contained in this Indenture or in any Security, or for any claim based thereon or otherwise in respect thereof, shall be had against any incorporator, stockholder, officer or director, as such, past, present or future, of the Company or of any successor, either directly or through the Company or any successor, whether by virtue of any constitution, statute or rule of law, or by the enforcement of any assessment or penalty or otherwise; it being expressly understood that this Indenture and the obligations issued hereunder are solely corporate obligations, and that no such personal liability whatever shall attach to, or is or shall be incurred by, the incorporators, stockholders, officers or directors, as such, of the Company or any successor, or any of them, because of the creation of the indebtedness hereby authorized, or under or by reason of the obligations, covenants or agreements contained in this Indenture or in any Security or implied therefrom; and that any and all such personal liability of every name and nature, either at common law or in equity or by constitution or statute, of, and any and all such rights and claims against, every such incorporator, stockholder, officer or director, as such, because of the creation of the indebtedness hereby authorized, or under or by reason of the obligations, covenants or agreements contained in this Indenture or in any Security or implied therefrom, are hereby expressly waived and released as a condition of, and as a consideration for, the execution of this Indenture and the issuance of such Security.

ARTICLE 2

SECURITIES FORMS

Section 2.1 Forms Generally

Each Registered Security and temporary or permanent Global Security or Definitive Security issued pursuant to this Indenture shall be in the form established by or pursuant to a Board Resolution and set forth in an Officer’s Certificate, or established in one or more indentures supplemental hereto, shall have such appropriate insertions, omissions, substitutions and other variations as are required or permitted by or pursuant to this Indenture or any indenture supplemental hereto and may have such letters, numbers or other marks of identification and such legends or endorsements placed thereon as may, consistently herewith, be determined by the Officers executing such Security as evidenced by their execution of such Security.

Unless otherwise provided in or pursuant to this Indenture or any Securities, the Securities shall be issuable in registered form without coupons and shall not be issuable upon the exercise of warrants.

Definitive Securities shall be printed, lithographed or engraved or produced by any combination of these methods on a steel engraved border or steel engraved borders or may be produced in any other manner, all as determined by the Officers of the Company executing such Securities, as evidenced by their execution of such Securities.

Section 2.2 Form of Trustee’s Certificate of Authentication

Subject to Section 6.12, the Trustee’s certificate of authentication shall be in substantially the following form:

This is one of the Securities of the series designated therein referred to in the within-mentioned Indenture.

_____, as Trustee

By _____
Authorized Signatory

Dated:

Unless otherwise provided in or pursuant to this Indenture or any Securities, the Securities shall be issuable in permanent global form. If Securities of a series shall be issuable in global form, any such Security may provide that it or any number of such Securities shall represent the aggregate amount of all Outstanding Securities of such

series (or such lesser amount as is permitted by the terms thereof) from time to time endorsed thereon and may also provide that the aggregate amount of Outstanding Securities represented thereby may from time to time be increased or reduced to reflect exchanges, redemptions or transfer of beneficial interests from one Global Security to another Global Security. Any endorsement of any Global Security to reflect the amount, or any increase or decrease in the amount, or changes in the rights of Holders, of Outstanding Securities represented thereby shall be made in such manner and by such Person or Persons as shall be specified therein or in the Company Order to be delivered pursuant to Section 3.3 or Section 3.4 with respect thereto. Subject to the provisions of Section 3.3 and, if applicable, Section 3.4, the Trustee shall deliver and redeliver any Security in permanent global form in the manner and upon instructions given by the Person or Persons specified therein or in the applicable Company Order. If a Company Order pursuant to Section 3.3 or Section 3.4 has been, or simultaneously is, delivered, any instructions by the Company with respect to a Global Security shall be in writing but need not be accompanied by or contained in an Officer's Certificate and need not be accompanied by an Opinion of Counsel.

Notwithstanding the provisions of Section 3.7, unless otherwise specified in or pursuant to this Indenture or any Securities, payment of principal of, any premium and interest on, and any Additional Amounts in respect of, any Security in temporary or permanent global form shall be made to the Person or Persons specified therein.

Notwithstanding the provisions of Section 3.8 and except as provided in the preceding paragraph, the Company, the Trustee and any agent of the Company or the Trustee shall treat as the Holder of such principal amount of Outstanding Securities as is represented by a Global Security in the case of a Global Security in registered form, the Holder of such Global Security in registered form.

Each Global Security shall bear a legend in substantially the following form (unless otherwise specified by the Depository):

“THIS DEBT SECURITY IS A GLOBAL SECURITY WITHIN THE MEANING OF THE INDENTURE HEREINAFTER REFERRED TO AND IS REGISTERED IN THE NAME OF A DEPOSITARY OR A NOMINEE THEREOF. THIS DEBT SECURITY MAY NOT BE TRANSFERRED TO, OR REGISTERED OR EXCHANGED FOR SECURITIES REGISTERED IN THE NAME OF, ANY PERSON OTHER THAN THE DEPOSITARY OR A NOMINEE THEREOF AND NO SUCH TRANSFER MAY BE REGISTERED, EXCEPT IN THE LIMITED CIRCUMSTANCES DESCRIBED IN THE INDENTURE. EVERY DEBT SECURITY AUTHENTICATED AND DELIVERED UPON REGISTRATION OF TRANSFER OF, OR IN EXCHANGE FOR OR IN LIEU OF, THIS DEBT SECURITY SHALL BE A GLOBAL SECURITY SUBJECT TO THE FOREGOING, EXCEPT IN SUCH LIMITED CIRCUMSTANCES.”

ARTICLE 3

THE SECURITIES

Section 3.1

Amount Unlimited; Issuable in Series

The aggregate principal amount of Securities that may be authenticated and delivered under this Indenture is unlimited. The Securities may be issued in one or more series. With respect to any Securities to be authenticated and delivered hereunder, there shall be established in or pursuant to a Board Resolution and set forth in an Officer's Certificate, or established in one or more indentures supplemental hereto,

(1) the title of such Securities and the series, including CUSIP numbers in which such Securities shall be included;

(2) any limit upon the aggregate principal amount of the Securities of such series that may be authenticated and delivered under this Indenture (except for Securities authenticated and delivered upon registration of transfer of, or in exchange for, or in lieu of, other Securities of such series pursuant to Section 3.4, Section 3.5, Section 3.6, Section 9.6 or Section 11.7, upon repayment in part of any Registered Security of such series pursuant to Article 13 or upon surrender in part of any Registered Security for conversion or exchange into Common Stock or other securities, cash or other property pursuant to its terms, or pursuant to the terms of such Securities and except for any Securities, which, pursuant to Section 3.3, are deemed never to have been authenticated and delivered hereunder);

(3) if any of such Securities are to be issuable in global form, when any of such Securities are to be issuable in global form and (i) whether such Securities are to be issued in temporary or permanent global form or both, (ii) whether beneficial owners of interests in any such Global Security may exchange such interests for Securities of the same series and of like tenor and of any authorized form and denomination, and the circumstances under which any such exchanges may occur, if other than in the manner specified in Section 3.5, and (iii) the name of the Depository or the U.S. Depository, as the case may be, with respect to any Global Security;

(4) the date as of which any Global Security shall be dated (if other than the date of original issuance of the first of such Securities to be issued);

(5) the date or dates, or the method or methods, if any, by which such date or dates shall be determined, on which the principal and premium, if any, of such Securities is payable;

(6) the rate or rates at which such Securities shall bear interest, if any, or the method or methods, if any, by which such rate or rates are to be determined, the date or dates, if any, from which such interest shall accrue or the method or methods, if any, by which such date or dates are to be determined, the Interest Payment Dates, if any, on which such interest shall be payable and the Regular Record Date, if any, for the interest payable on Registered Securities on any Interest Payment Date, whether and under what circumstances Additional Interest on such Securities or any of them shall be payable, whether and under what circumstances Additional Amounts on such Securities or any of them shall be payable, the notice, if any, to Holders regarding the determination of interest on a floating rate Security and the manner of giving such notice, and the basis upon which interest shall be calculated if other than that of a 360-day year of twelve 30-day months;

(7) if in addition to or other than the Borough of Manhattan, The City of New York, the place or places where the principal of, any premium and interest on or any Additional Amounts with respect to such Securities shall be payable, any of such Securities that are Registered Securities may be surrendered for registration of transfer or exchange, any of such Securities may be surrendered for conversion or exchange and notices or demands to or upon the Company in respect of such Securities and this Indenture may be served, the extent to which, or the manner in which, any interest payment or Additional Amounts on a Global Security on an Interest Payment Date, will be paid and the manner in which any principal of or premium, if any, on any Global Security will be paid;

(8) whether any of such Securities are to be redeemable at the option of the Company and, if so, the date or dates on which, the period or periods within which, the price or prices at which and the other terms and conditions upon which such Securities may be redeemed, in whole or in part, at the option of the Company;

(9) whether the Company is obligated to redeem or purchase any of such Securities pursuant to any sinking fund or analogous provision or at the option of any Holder thereof and, if so, the date or dates on which, the period or periods within which, the price or prices at which and the other terms and conditions upon which such Securities shall be redeemed or purchased, in whole or in part, pursuant to such obligation, and any provisions for the remarketing of such Securities so redeemed or purchased;

(10) the denominations in which any of such Securities that are Registered Securities shall be issuable if other than denominations of \$1,000 and any multiple of \$1,000 in excess thereof;

(11) whether the Securities of the series will be convertible into shares of Common Stock and/or exchangeable for other securities, cash or other property of the Company or of any other Person, and if so, the terms and conditions upon which such Securities will be so convertible or exchangeable, and any deletions from or modifications or additions to this Indenture to permit or to facilitate the issuance of such convertible or exchangeable Securities or the administration thereof;

(12) if other than the principal amount thereof, the portion of the principal amount of any of such Securities that shall be payable upon declaration of acceleration of the Maturity thereof pursuant to Section 5.2 or the method by which such portion is to be determined;

(13) if other than Dollars, the Foreign Currency in which payment of the principal of, any premium or interest on or any Additional Amounts with respect to any of such Securities shall be payable;

(14) if the principal of, any premium or interest on or any Additional Amounts with respect to any of such Securities are to be payable, at the election of the Company or a Holder thereof or otherwise, in Currency other than that in which such Securities are stated to be payable, the date or dates on which, the period or periods within which, and the other terms and conditions upon which, such election may be made, and the time and manner of determining the exchange rate between the Currency in which such Securities

are stated to be payable and the Currency in which such Securities or any of them are to be paid pursuant to such election, and any deletions from or modifications of or additions to the terms of this Indenture to provide for or to facilitate the issuance of Securities denominated or payable, at the election of the Company or a Holder thereof or otherwise, in a Foreign Currency;

(15) whether the amount of payments of principal of, any premium or interest on or any Additional Amounts with respect to such Securities may be determined with reference to an index, formula, financial or economic measure or other method or methods (which index, formula, measure or method or methods may be based, without limitation, on one or more Currencies, commodities, equity indices or other indices), and, if so, the terms and conditions upon which and the manner in which such amounts shall be determined and paid or be payable;

(16) any deletions from, modifications of or additions to the Events of Default or covenants of the Company with respect to any of such Securities, whether or not such Events of Default or covenants are consistent with the Events of Default or covenants set forth herein;

(17) whether either or both of Section 4.2(2) relating to defeasance or Section 4.2(3) relating to covenant defeasance shall not be applicable to the Securities of such series, and any covenants relating to the Securities of such series which shall be subject to covenant defeasance, and, if the Securities of such series are subject to repurchase or repayment at the option of the Holders thereof, whether the Company's obligation to repurchase or repay such Securities will be subject to defeasance or covenant defeasance, and any deletions from, or modifications or additions to, the provisions of Article 4 in respect of the Securities of such series;

(18) whether any of such Securities are to be issuable upon the exercise of warrants, and the time, manner and place for such Securities to be authenticated and delivered;

(19) if there is more than one Trustee or a Trustee other than , the identity of the Trustee and, if not the Trustee, the identity of each Security Registrar, Paying Agent or Authenticating Agent with respect to such Securities;

(20) whether the Securities are senior or subordinated debt securities, and if subordinated debt securities, the terms of such subordination;

(21) whether the Securities of the series will be guaranteed by any Persons and, if so, the identity of such Persons, the terms and conditions upon which such Securities shall be guaranteed and, if applicable, the terms and conditions upon which such guarantees may be subordinated to other indebtedness of the respective guarantors and may be released;

(22) whether the Securities of the series will be secured by any collateral and, if so, the terms and conditions upon which such Securities shall be secured and, if applicable, upon which such liens may be subordinated to other liens securing other indebtedness of the Company or any guarantor and may be released; and

(23) any other terms of such Securities and any deletions from or modifications or additions to this Indenture in respect of such Securities.

All Securities of any one series shall be substantially identical except as to denomination and except as may otherwise be provided by the Company in or pursuant to the Board Resolution and set forth in the Officer's Certificate or in any indenture or indentures supplemental hereto pertaining to such series of Securities. The terms of the Securities of any series may provide, without limitation, that the Securities of such series shall be authenticated and delivered by the Trustee on original issue from time to time in accordance with such procedures as are acceptable to the Trustee (including authentication and delivery by the Trustee on original issue from time to time upon telephonic or written order of persons designated in the Officer's Certificate or supplemental indenture (telephonic instructions to be promptly confirmed in writing by such person) and that such persons are authorized to determine, consistent with such Officer's Certificate or any applicable supplemental indenture, such terms and conditions of the Securities of such series as are specified in such Officer's Certificate or supplemental indenture). All Securities of any one series need not be issued at the same time and, unless otherwise so provided by the Company, a series may be reopened for issuances of additional Securities of such series or to establish additional terms of such series of Securities. If any of the terms of the Securities of any series shall be established by action taken by or pursuant to a Board Resolution, the Board Resolution shall be delivered to the Trustee at or prior to the delivery of the Officer's Certificate setting forth the terms of such series.

Section 3.2 Currency; Denominations

Unless otherwise provided in or pursuant to this Indenture or any Security, the principal of, any premium and interest on and any Additional Amounts with respect to, the Securities shall be payable in Dollars. Unless otherwise provided in or pursuant to this

Indenture, Registered Securities denominated in Dollars shall be issuable in registered form without coupons in denominations of \$1,000 or any integral multiple of \$1,000 in excess thereof. Securities not denominated in Dollars shall be issuable in such denominations as are established with respect to such Securities in or pursuant to this Indenture.

Section 3.3 Execution; Authentication; Delivery and Dating

Securities shall be executed on behalf of the Company by any Officer of the Company. The signature of any such Officer on the Securities may be manual or facsimile.

Securities bearing the manual or facsimile signatures of individuals who were at any time the proper Officers of the Company shall bind the Company, notwithstanding that such individuals or any of them have ceased to hold such offices prior to the authentication and delivery of such Securities or did not hold such offices at the date of such Securities.

At any time and from time to time after the execution and delivery of this Indenture, the Company may deliver Securities, executed by the Company, to the Trustee for authentication and, provided that the Board Resolution and Officer's Certificate or supplemental indenture or indentures with respect to such Securities referred to in Section 3.1 and a Company Order for the authentication and delivery of such Securities have been delivered to the Trustee, the Trustee in accordance with the Company Order and subject to the provisions hereof and of such Securities shall authenticate and deliver such Securities. In authenticating such Securities, and accepting the additional responsibilities under this Indenture in relation to such Securities, the Trustee shall be provided with, and (subject to Sections 315(a) through 315(d) of the Trust Indenture Act) shall be fully protected in relying upon an Opinion of Counsel and an Officer's Certificate that contain the statements required by Section 1.2.

The Trustee shall not be required to authenticate such Securities if the issue of such Securities pursuant to this Indenture will affect the Trustee's own rights, duties or immunities under the Securities and this Indenture or otherwise in a manner which is not reasonably acceptable to the Trustee.

Notwithstanding the provisions of Section 3.1 and of the preceding paragraph, if all Securities of a series are not to be originally issued at one time, it shall not be necessary to deliver the Officer's Certificate or Company Order otherwise required pursuant to such preceding paragraph at or prior to the authentication of each Security of such series if such documents are delivered at or prior to the authentication upon original issuance of the first Security of such series to be issued. This paragraph shall not be applicable to Securities of a series that are issued as part of a reopening pursuant to the last paragraph of Section 3.1.

Each Registered Security shall be dated the date of its authentication.

No Security shall be entitled to any benefit under this Indenture or be valid or obligatory for any purpose, unless there appears on such Security a certificate of authentication substantially in the form provided for in Section 2.2 or Section 6.12 executed by or on behalf of the Trustee or by the Authenticating Agent by the manual signature of one of its authorized signatories. Such certificate upon any Security shall be conclusive evidence, and the only evidence, that such Security has been duly authenticated and delivered hereunder.

Notwithstanding the foregoing, if any Security shall have been authenticated and delivered hereunder but never issued and sold by the Company, and the Company shall deliver such Security to the Trustee for cancellation as provided in Section 3.9, for all purposes of this Indenture such Security shall be deemed never to have been authenticated and delivered hereunder and shall never be entitled to the benefits of this Indenture.

Section 3.4 Temporary Securities

Pending the preparation of Definitive Securities, the Company may execute and deliver to the Trustee and, upon Company Order, the Trustee shall authenticate and deliver, in the manner provided in Section 3.3, temporary Securities in lieu thereof which are printed, lithographed, typewritten, mimeographed or otherwise produced, in any authorized denomination, substantially of the tenor of the Definitive Securities in lieu of which they are issued, in registered form and with such appropriate insertions, omissions, substitutions and other variations as the Officers of the Company executing such Securities may determine, as conclusively evidenced by their execution of such Securities. Such temporary Securities may be in the form of Global Securities.

Except in the case of temporary Global Securities, which shall be exchanged in accordance with the provisions thereof, if temporary Securities are issued, the Company shall cause Definitive Securities to be prepared without unreasonable delay. After the preparation of Definitive Securities of the same series and containing terms and provisions that are identical to those of any temporary Securities, such temporary Securities shall be exchangeable for such Definitive Securities upon surrender of such temporary Securities

at an Office or Agency for such Securities, without charge to any Holder thereof. Upon surrender for cancellation of any one or more temporary Securities, the Company shall execute and the Trustee shall authenticate and deliver in exchange therefor a like principal amount of Definitive Securities of authorized denominations of the same series and containing identical terms and provisions. Unless otherwise provided in or pursuant to this Indenture with respect to a temporary Global Security, until so exchanged the temporary Securities of any series shall in all respects be entitled to the same benefits under this Indenture as Definitive Securities of such series.

Section 3.5 Registration; Transfer and Exchange

With respect to the Registered Securities of each series, if any, the Company shall cause to be kept a register (each such register being herein sometimes referred to as the “Security Register”) at an Office or Agency for such series in which, subject to such reasonable regulations as it may prescribe, the Company shall provide for the registration of the Registered Securities of such series and of transfers of the Registered Securities of such series.

Such Office or Agency shall be the “Security Registrar” or “Registrar” for that series of Securities. Unless otherwise specified in or pursuant to this Indenture or the Securities, the Trustee shall be the initial Security Registrar for each series of Securities. The Company shall have the right to remove and replace from time to time the Security Registrar for any series of Securities; provided that no such removal or replacement shall be effective until a successor Security Registrar with respect to such series of Securities shall have been appointed by the Company and shall have accepted such appointment by the Company. In the event that the Trustee shall not be or shall cease to be Security Registrar with respect to a series of Securities, it shall have the right to examine the Security Register for such series at all reasonable times. There shall be only one Security Register for each series of Securities.

A Global Security may not be transferred as a whole except by the Depositary to a nominee of the Depositary, by a nominee of the Depositary to the Depositary or to another nominee of the Depositary, or by the Depositary or any such nominee to a successor Depositary or a nominee of such successor Depositary. Notwithstanding the foregoing, except as may be provided pursuant to Section 3.1, any Global Security or any beneficial interest therein shall be exchangeable for Definitive Securities only if (i) the Depositary is at any time unwilling, unable or ineligible to continue as Depositary and a successor Depositary is not appointed by the Company within 90 days of the date the Company is so informed in writing, (ii) the Depositary ceases to be a clearing agency registered under the Exchange Act, (iii) the Company (subject to the Applicable Procedures) executes and delivers to the Trustee a Company Order to the effect that such Global Security shall be so exchangeable or (iv) an Event of Default has occurred and is continuing with respect to such Securities. If the holder of a Global Security or the beneficial owners of interests in a Global Security are entitled to exchange such interests for Definitive Securities as the result of an event specified in clause (i), (ii), (iii) or (iv) of the preceding sentence, the Company shall promptly make available to the Trustee Definitive Securities in such form and denominations as are required by or pursuant to this Indenture, and of the same series, containing identical terms and in aggregate principal amount equal to the principal amount of such Global Security, executed by the Company. Such Global Security shall be surrendered from time to time by the U.S. Depositary or such other Depositary as shall be specified in the Company Order with respect thereto, and in accordance with instructions given to the Trustee and the U.S. Depositary or such other Depositary, as the case may be (which instructions shall be in writing but need not be contained in or accompanied by an Officer’s Certificate or be accompanied by an Opinion of Counsel), as shall be specified in the Company Order with respect thereto to the Trustee, as the Company’s agent for such purpose, to be exchanged, in whole or in part, for Definitive Securities as described above without charge. The Trustee shall authenticate and make available for delivery, in exchange for each portion of such surrendered Global Security, a like aggregate principal amount of Definitive Securities of the same series of authorized denominations and of like tenor as the portion of such Global Security to be exchanged; provided, however, that no such exchanges may occur during a period beginning at the opening of business 15 days before any selection of Securities of the same series to be redeemed and ending on the relevant Redemption Date. Promptly following any such exchange in part, such Global Security shall be returned by the Trustee to such Depositary or the U.S. Depositary, as the case may be, or such other Depositary or U.S. Depositary referred to above in accordance with the instructions of the Company referred to above. If a Registered portion of a Global Security is exchanged for Definitive Registered Securities after the close of business at the Office or Agency for such Security where such exchange occurs on or after (i) any Regular Record Date for such Security and before the opening of business at such Office or Agency on the next Interest Payment Date, or (ii) any Special Record Date for such Security and before the opening of business at such Office or Agency on the related proposed date for payment of interest or Defaulted Interest, as the case may be, interest shall not be payable on such Interest Payment Date or proposed date for payment, as the case may be, in respect of such Definitive Registered Security, but shall be payable on such Interest Payment Date or proposed date for payment, as the case may be, only to the Person to whom interest in respect of such portion of such Global Security shall be payable in accordance with the provisions of this Indenture.

The transfer and exchange of beneficial interests in the Global Securities shall be effected through the Depository, in accordance with the provisions of this Indenture and the Applicable Procedures. Transfers and exchanges of beneficial interests in the Global Securities also shall require compliance with either subparagraph (1) or (2) below, as applicable, as well as one or more of the other following paragraphs, as applicable:

(1) Beneficial interests in any Global Security may be transferred to Persons who take delivery thereof in the form of a beneficial interest in the same Global Security. No written orders or instructions shall be required to be delivered to the Registrar to effect the transfers described in this subparagraph (1).

(2) In connection with the transfer or exchange of beneficial interests in any Global Security to Persons who take delivery thereof in the form of a beneficial interest in a different Global Security, the transferor of such beneficial interest must deliver to the Registrar (i) an order from a Participant or an Indirect Participant given to the Depository in accordance with the Applicable Procedures directing the Depository to credit or cause to be credited a beneficial interest in another Global Security in an amount equal to the beneficial interest to be transferred or exchanged and (ii) instructions given in accordance with the Applicable Procedures containing information regarding the Participant account to be credited with such increase. Upon satisfaction of all of the requirements for transfer or exchange of beneficial interests in Global Securities contained in this Indenture and such Securities or otherwise applicable under the Securities Act, the Trustee shall adjust the principal amount of the relevant Global Security(s) pursuant to this paragraph.

If any Holder of a beneficial interest in a Global Security proposes to exchange such beneficial interest for a Definitive Security or to transfer such beneficial interest to a Person who takes delivery thereof in the form of a Definitive Security in the event of the occurrence of any of the conditions set forth in the third paragraph of this Section 3.5, then, upon delivery to the Registrar of (i) an order from a Participant or an Indirect Participant given to the Depository in accordance with the Applicable Procedures directing the Depository to cause to be issued a Definitive Security in an amount equal to the beneficial interest to be transferred or exchanged and (ii) instructions given by the Depository to the Registrar containing information regarding the Person in whose name such Definitive Security shall be registered to effect the transfer or exchange referred to in clause (i), the Trustee shall cause the aggregate principal amount of the applicable Global Security to be reduced accordingly as described below, and the Company shall execute and, upon receipt of a Company Order pursuant to Section 3.3, the Trustee shall authenticate and deliver to the Person designated in the instructions a Definitive Security in the appropriate principal amount. Any Definitive Security issued in exchange for a beneficial interest pursuant to this paragraph shall be registered in such name or names and in such authorized denomination or denominations as the Holder of such beneficial interest shall instruct the Registrar through instructions from the Depository and the Participant or Indirect Participant. The Trustee shall deliver such Definitive Securities to the Persons in whose names such Securities are so registered.

A Holder of a Definitive Security may exchange such Security for a beneficial interest in a Global Security or transfer such Definitive Securities to a Person who takes delivery thereof in the form of a beneficial interest in a Global Security at any time. Upon receipt of a request for such an exchange or transfer, the Trustee shall cancel the applicable Definitive Security and increase or cause to be increased the aggregate principal amount of the applicable Global Security.

At the option of the Holder, Definitive Securities of any series may be exchanged for other Definitive Securities of the same series, of any authorized denominations and of like tenor and aggregate principal amount, upon surrender of the Definitive Securities to be exchanged at an Office or Agency. Whenever any Definitive Securities are so surrendered for exchange, the Company shall execute, and the Trustee shall authenticate and deliver, the Definitive Securities which the Holder making the exchange is entitled to receive.

Upon request by a Holder of Definitive Securities and such Holder's compliance with the provisions of this paragraph, the Registrar shall register the transfer or exchange of Definitive Securities. Prior to such registration of transfer or exchange, the requesting Holder shall present or surrender to the Registrar the Definitive Securities duly endorsed or accompanied by a written instruction of transfer in form satisfactory to the Registrar duly executed by such Holder or by its attorney, duly authorized in writing. A Holder of Definitive Securities may transfer such Securities to a Person who takes delivery thereof in the form of a Definitive Security. Upon receipt of a request to register such a transfer, the Registrar shall register the Definitive Securities pursuant to the instructions from the Holder thereof.

At such time as all beneficial interests in a particular Global Security have been exchanged for Definitive Securities or a particular Global Security has been redeemed, repurchased or cancelled in whole and not in part, each such Global Security shall be returned to or retained and cancelled by the Trustee in accordance with Section 3.9. At any time prior to such cancellation, if any beneficial interest in a Global Security is exchanged for or transferred to a Person who will take delivery thereof in the form of a beneficial interest in another Global Security or for Definitive Securities, the principal amount of Securities represented by such Global Security shall be reduced accordingly and an endorsement shall be made on such Global Security by the Trustee or by the

Depository at the direction of the Trustee to reflect such reduction; and if the beneficial interest is being exchanged for or transferred to a Person who will take delivery thereof in the form of a beneficial interest in another Global Security, the principal amount of Securities represented by such other Global Security shall be increased accordingly and an endorsement shall be made on such Global Security by the Trustee or by the Depository at the direction of the Trustee to reflect such increase.

All Securities issued upon any registration of transfer or exchange of Securities shall be the valid and legally binding obligations of the Company evidencing the same debt and entitling the Holders thereof to the same benefits under this Indenture as the Securities surrendered upon such registration of transfer or exchange.

Every Registered Security presented or surrendered for registration of transfer or for exchange or redemption shall (if so required by the Company or the Security Registrar for such Security) be duly endorsed, signature guaranteed, or be accompanied by a written instrument of transfer in form satisfactory to the Company and the Security Registrar for such Security duly executed by the Holder thereof, signature guaranteed, or his or her attorney duly authorized in writing.

No service charge shall be made for any registration of transfer or exchange, or redemption of Securities, but the Company may require payment of a sum sufficient to cover any tax or other governmental charge and any other expenses (including fees and expenses of the Trustee) that may be imposed in connection with any registration of transfer or exchange of Securities, other than exchanges pursuant to Sections 3.4, 3.6, 9.6 and 11.7 not involving any transfer.

Except as otherwise provided in or pursuant to this Indenture, the Company shall not be required (i) to issue, register the transfer of or exchange any Securities during a period beginning at the opening of business 15 days before the day of selection of Securities of like tenor and the same series under Section 11.3 for redemption and ending at the close of business on the day of such selection, (ii) to register the transfer of or exchange any Registered Security so selected for redemption in whole or in part, except in the case of any Security to be redeemed in part, the portion thereof not to be redeemed, or (iii) to issue, register the transfer of or exchange any Security which, in accordance with its terms, has been surrendered for repayment or purchase at the option of the Holder, except the portion, if any, of such Security not to be so repaid.

The Registrar shall retain copies of all certificates, notices and other written communications received pursuant to this Section 3.5. The Company shall have the right to inspect and make copies of all such certificates, notices or other written communications at any reasonable time upon the giving of reasonable written notice to the Registrar.

All certifications and certificates required to be submitted to the Registrar pursuant to this Section 3.5 to effect a registration of transfer or exchange may be submitted by facsimile, with an original of such document to be sent promptly thereafter.

Section 3.6 Mutilated, Destroyed, Lost and Stolen Securities

If any mutilated Security is surrendered to the Trustee, subject to the provisions of this Section 3.6, the Company shall execute and the Trustee shall authenticate and deliver in exchange therefor a new Security of the same series containing identical terms and of like principal amount and bearing a number not contemporaneously outstanding.

If there be delivered to the Company and to the Trustee (i) evidence to their satisfaction of the destruction, loss or theft of any Security and (ii) such security or indemnity as may be required by them to save each of them and any agent of either of them harmless, then, in the absence of notice to the Company or to a Responsible Officer that such Security has been acquired by a "protected purchaser" (as such term is defined in the New York Uniform Commercial Code), the Company shall execute and, upon the Company's request the Trustee shall authenticate and deliver, in exchange for or in lieu of any such destroyed, lost or stolen Security, a new Security of the same series containing identical terms and of like principal amount and bearing a number not contemporaneously outstanding.

Notwithstanding the foregoing provisions of this Section 3.6, in case any mutilated, destroyed, lost or stolen Security has become or is about to become due and payable, the Company in its discretion may, instead of issuing a new Security, pay such Security.

Upon the issuance of any new Security under this Section 3.6, the Company may require the payment of a sum sufficient to cover any tax or other governmental charge that may be imposed in relation thereto and any other expenses (including the fees and expenses of the Trustee) connected therewith.

Every new Security issued pursuant to this Section 3.6 in lieu of any destroyed, lost or stolen Security shall constitute a separate obligation of the Company, whether or not the destroyed, lost or stolen Security shall be at any time enforceable by anyone, and shall be entitled to all the benefits of this Indenture equally and proportionately with any and all other Securities of such series duly issued hereunder.

The provisions of this Section 3.6, as amended or supplemented pursuant to this Indenture with respect to particular Securities or generally, shall be exclusive and shall preclude (to the extent lawful) all other rights and remedies with respect to the replacement or payment of mutilated, destroyed, lost or stolen Securities.

Section 3.7 Payment of Interest and Certain Additional Amounts; Rights to Interest and Certain Additional Amounts Preserved

Unless otherwise provided in or pursuant to this Indenture, any interest on and any Additional Amounts with respect to, any Registered Security that shall be payable, and are punctually paid or duly provided for, on any Interest Payment Date shall be paid to the Person in whose name such Security (or one or more Predecessor Securities) is registered as of the close of business on the Regular Record Date for such interest.

Unless otherwise provided in or pursuant to this Indenture, any interest on and any Additional Amounts with respect to, any Registered Security that shall be payable, but shall not be punctually paid or duly provided for, on any Interest Payment Date for such Registered Security (herein called "Defaulted Interest") shall forthwith cease to be payable to the Holder thereof on the relevant Regular Record Date by virtue of having been such Holder; and such Defaulted Interest may be paid by the Company, at its election in each case, as provided in clause (1) or (2) below:

(1) The Company may elect to make payment of any Defaulted Interest to the Person in whose name such Registered Security (or a Predecessor Security thereof) shall be registered at the close of business on a Special Record Date for the payment of such Defaulted Interest, which shall be fixed in the following manner. The Company shall notify the Trustee in writing of the amount of Defaulted Interest proposed to be paid on such Registered Security and the date of the proposed payment, and at the same time the Company shall deposit with the Trustee an amount of money equal to the aggregate amount proposed to be paid in respect of such Defaulted Interest or shall make arrangements satisfactory to the Trustee for such deposit on or prior to the date of the proposed payment, such money when so deposited to be held in trust for the benefit of the Person entitled to such Defaulted Interest as in this clause provided. Thereupon, the Trustee shall fix a Special Record Date for the payment of such Defaulted Interest which shall be not more than 15 days and not less than 10 days prior to the date of the proposed payment and not less than 10 days after the receipt by the Trustee of the notice of the proposed payment. The Trustee shall promptly notify the Company of such Special Record Date and, in the name and at the expense of the Company, shall cause notice of the proposed payment of such Defaulted Interest and the Special Record Date therefor to be mailed, first-class postage prepaid, to the Holder of such Registered Security (or a Predecessor Security thereof) at his address as it appears in the Security Register not less than 10 days prior to such Special Record Date. The Trustee may, in its discretion, in the name and at the expense of the Company, cause a similar notice to be published at least once in an Authorized Newspaper of general circulation in the Borough of Manhattan, The City of New York, but such publication shall not be a condition precedent to the establishment of such Special Record Date. Notice of the proposed payment of such Defaulted Interest and the Special Record Date therefor having been mailed as aforesaid, such Defaulted Interest shall be paid to the Person in whose name such Registered Security (or a Predecessor Security thereof) shall be registered at the close of business on such Special Record Date and shall no longer be payable pursuant to the following clause (2).

(2) The Company may make payment of any Defaulted Interest in any other lawful manner not inconsistent with the requirements of any securities exchange on which such Security may be listed, and upon such notice as may be required by such exchange, if, after notice given by the Company to the Trustee of the proposed payment pursuant to this clause, such payment shall be deemed practicable by the Trustee.

Unless otherwise provided in or pursuant to this Indenture or the Securities of any particular series pursuant to the provisions of this Indenture, at the option of the Company, interest on Registered Securities that bear interest may be paid by wire transfer in immediately available funds if the Holder of the Registered Security has provided to the Company and the Trustee wire instructions at least five Business Days prior to the applicable payment date or by check mailed to the address of that Holder as it appears on the books of the Securities Registrar if that Holder has not provided wire instructions; provided that any payment of principal (or premium, if any) in respect of any Security will be made only upon presentation and surrender of such Security at the applicable Office or Agency.

Subject to the foregoing provisions of this Section 3.7 and Section 3.5, each Security delivered under this Indenture upon registration of transfer of or in exchange for or in lieu of any other Security shall carry the rights to interest accrued and unpaid, and to accrue, which were carried by such other Security.

In the case of any Registered Security of any series that is convertible, which Registered Security is converted after any Regular Record Date and on or prior to the immediately succeeding Interest Payment Date (other than any Registered Security with respect to which the Maturity is prior to such Interest Payment Date), interest on such Interest Payment Date shall be payable on such Interest Payment Date notwithstanding such conversion, and such interest (whether or not punctually paid or duly provided for) shall be paid

to the Person in whose name that Registered Security (or one or more predecessor Registered Securities) is registered at the close of business on such Regular Record Date. Except as otherwise expressly provided in the immediately preceding sentence, in the case of any Registered Security which is converted, interest with respect to which the Stated Maturity is after the date of conversion of such Registered Security shall not be payable.

Section 3.8 Persons Deemed Owners

Prior to due presentment of a Registered Security for registration of transfer, the Company, the Trustee and any agent of the Company or the Trustee may treat the Person in whose name such Registered Security is registered in the Security Register as the owner of such Registered Security for the purpose of receiving payment of principal of, any premium and (subject to Section 3.5 and Section 3.7) interest on and any Additional Amounts with respect to, such Registered Security and for all other purposes whatsoever, whether or not any payment with respect to such Registered Security shall be overdue, and none of the Company, the Trustee or any agent of the Company or the Trustee shall be affected by notice to the contrary.

No holder of any beneficial interest in any Global Security held on its behalf by a Depositary shall have any rights under this Indenture with respect to such Global Security, and such Depositary may be treated by the Company, the Trustee and any agent of the Company or the Trustee as the owner of such Global Security for all purposes whatsoever. None of the Company, the Trustee, any Paying Agent or the Security Registrar will have any responsibility or liability for any aspect of the records relating to or payments made on account of beneficial ownership interests of a Global Security or for maintaining, supervising or reviewing any records relating to such beneficial ownership interests.

Section 3.9 Cancellation

All Securities surrendered for payment, redemption, registration of transfer, exchange or conversion or for credit against any sinking fund payment shall, if surrendered to any Person other than the Trustee, be delivered to the Trustee, and any such Securities, as well as Securities surrendered directly to the Trustee for any such purpose, shall be cancelled promptly by the Trustee. The Company may at any time deliver to the Trustee for cancellation any Securities previously authenticated and delivered hereunder which the Company may have acquired in any manner whatsoever, and all Securities so delivered shall be cancelled promptly by the Trustee. No Securities shall be authenticated in lieu of or in exchange for any Securities cancelled as provided in this Section 3.9, except as expressly permitted by or pursuant to this Indenture. All cancelled Securities held by the Trustee shall be disposed of by the Trustee in accordance with its customary procedures.

Section 3.10 Computation of Interest

Except as otherwise provided in or pursuant to this Indenture, or in any Security, interest on the Securities shall be computed on the basis of a 360-day year of twelve 30-day months.

Section 3.11 CUSIP and ISIN Numbers

The Company in issuing the Securities may use "CUSIP" and "ISIN" numbers (if then generally in use), and, if so, the Trustee shall use CUSIP and ISIN numbers in notices of redemption as a convenience to Holders; provided that any such notice may state that no representation is made as to the correctness of such numbers either as printed on the Securities or as contained in any notice of a redemption and that reliance may be placed only on the other identification numbers printed on the Securities, and any such redemption shall not be affected by any defect in or omission of such numbers. The Company will promptly notify the Trustee of any change in the CUSIP and ISIN numbers.

ARTICLE 4

SATISFACTION AND DISCHARGE OF INDENTURE

Section 4.1 Satisfaction and Discharge

Upon the direction of the Company by a Company Order, this Indenture shall cease to be of further effect with respect to any series of Securities specified in such Company Order and the Trustee, on receipt of a Company Order, at the expense of the Company, shall execute proper instruments acknowledging satisfaction and discharge of this Indenture as to such series, when

(1) either

(a) all Securities of such series theretofore authenticated and delivered have been delivered to the Trustee for cancellation (other than (i) Securities of such series that have been destroyed, lost or stolen and have been replaced or paid as provided in Section 3.6 and (ii) Securities of such series the payment of money for which has theretofore been deposited in trust or segregated and held in trust by the Company and thereafter repaid to the Company or discharged from such trust, as provided in Section 10.3); or

(b) all Securities of such series not theretofore delivered to the Trustee for cancellation:

(i) have become due and payable, or

(ii) will become due and payable at their Stated Maturity within one year, or

(iii) if redeemable at the option of the Company, are to be called for redemption within one year under arrangements satisfactory to the Trustee for the giving of notice of redemption by the Trustee in the name, and at the expense, of the Company,

and the Company, in the case of (i), (ii) or (iii) above, has deposited or caused to be deposited with the Trustee as trust funds in trust for such purpose, (x) money in an amount or (y) Government Obligations that through the payment of interest and principal in respect thereof in accordance with their terms will provide, not later than one day before the due date of any payment, in the opinion of a nationally recognized Independent Registered Public Accounting Firm expressed in a written certification thereof delivered to the Trustee, money in the amount, or (z) a combination of (x) and (y) in an amount in the Currency in which such series of Securities are payable sufficient to pay and discharge the entire indebtedness on such Securities not theretofore delivered to the Trustee for cancellation, including the principal of, any premium and interest on, and any Additional Amounts with respect to such Securities then determinable, to the date of such deposit (in the case of Securities which have become due and payable) or to the Maturity thereof, as the case may be;

(2) the Company has paid or caused to be paid all other sums payable hereunder by the Company with respect to the Outstanding Securities of such series; and

(3) the Company has delivered to the Trustee an Officer's Certificate and an Opinion of Counsel, each stating that all conditions precedent herein provided for relating to the satisfaction and discharge of this Indenture as to such series have been complied with.

In the event there are Securities of two or more series hereunder, the Trustee shall be required to execute an instrument acknowledging satisfaction and discharge of this Indenture only if requested to do so with respect to Securities of such series as to which it is Trustee and if the other conditions thereto are met.

Notwithstanding the satisfaction and discharge of this Indenture with respect to any series of Securities, the obligations of the Company to the Trustee under Section 6.7, the obligations of the Trustee under Section 4.3, if money, Government Obligations or a combination thereof shall have been deposited with the Trustee pursuant to subclause (b) of clause (1) of this Section 4.1, the obligations of the Company and the Trustee with respect to the Securities of such series under Section 3.4, Section 3.5, Section 3.6, Section 10.2 and Section 10.3, and the obligations of the Company with respect to the payment of Additional Amounts, if any, with respect to such Securities as contemplated by Section 10.4 (but only to the extent that the Additional Amounts payable with respect to such Securities exceed the amount deposited in respect of such Additional Amounts pursuant to Section 4.1(1)(b)), and with respect to any rights to convert or exchange such Securities into Common Stock or other securities, cash or other property shall survive such satisfaction and discharge.

Section 4.2 Defeasance and Covenant Defeasance

(1) Unless pursuant to Section 3.1, either or both of (i) defeasance of the Securities of a series under clause (2) of this Section 4.2 shall not be applicable with respect to the Securities of such series or (ii) covenant defeasance of the Securities of a series under clause (3) of this Section 4.2 shall not be applicable with respect to the Securities of such series, then such provisions, together with the other provisions of this Section 4.2 (with such modifications thereto as may be specified pursuant to Section 3.1 with respect to any Securities), shall be applicable to such Securities, and the Company may at its option by Board Resolution, at any time, with respect to such Securities, elect to have Section 4.2(2) or Section 4.2(3) be applied to such Outstanding Securities upon compliance with the conditions set forth below in this Section 4.2.

(2) Upon the Company's exercise of the above option applicable to this Section 4.2(2) with respect to any Securities of or within a series, the Company shall be deemed to have been discharged from its obligations with respect to such Outstanding Securities on the date the conditions set forth in clause (4) of this Section 4.2 are satisfied (hereinafter, "defeasance"). For this purpose, such defeasance means that the Company shall be deemed to have paid and discharged the entire indebtedness represented by such Outstanding Securities, which shall thereafter be deemed to be "Outstanding" only for the purposes of the Sections of this Indenture referred to in

clauses (i) and (ii) below, and to have satisfied all of its other obligations under such Securities and this Indenture insofar as such Securities are concerned (and the Trustee, at the expense of the Company, shall execute proper instruments acknowledging the same), except for the following which shall survive until otherwise terminated or discharged hereunder: (i) the rights of Holders of such Outstanding Securities to receive, solely from the trust fund described in clause (4) of this Section 4.2 and as more fully set forth in such Section, payments in respect of the principal of (and premium, if any) and interest, if any, on, and Additional Amounts, if any, with respect to, such Securities when such payments are due, and any rights of such Holder to convert or exchange such Securities into Common Stock or other securities, cash or other property, (ii) the obligations of the Company and the Trustee with respect to such Securities under Section 3.4, Section 3.5, Section 3.6, Section 10.2 and Section 10.3 and the obligations of the Company with respect to the payment of Additional Amounts, if any, on such Securities as contemplated by Section 10.4 (but only to the extent that the Additional Amounts payable with respect to such Securities exceed the amount deposited in respect of such Additional Amounts pursuant to Section 4.2(4)(a) below), and with respect to any rights to convert or exchange such Securities into Common Stock or other securities, cash or other property, (iii) the rights, powers, trusts, duties and immunities of the Trustee hereunder and (iv) this Section 4.2. The Company may exercise its option under this Section 4.2(2) notwithstanding the prior exercise of its option under clause (3) of this Section 4.2 with respect to such Securities.

(3) Upon the Company's exercise of the above option applicable to this Section 4.2(3) with respect to any Securities of or within a series, (i) the Company shall be released from its obligations to comply with any term, provision or condition under Section 8.1 with respect to such Securities (and, to the extent specified pursuant to Section 3.1, any other restrictive covenant added for the benefit of such Securities) and (ii) unless otherwise specified pursuant to Section 3.1, the occurrence of any event specified in Section 5.1(7) shall not be deemed to be an Event of Default, in each case on and after the date the conditions set forth in clause (4) of this Section 4.2 are satisfied (hereinafter, "covenant defeasance"), and such Securities shall thereafter be deemed to be not "Outstanding" for the purposes of any direction, waiver, consent or declaration or Act of Holders (and the consequences of any thereof) in connection with any such covenant, but shall continue to be deemed "Outstanding" for all other purposes hereunder. For this purpose, such covenant defeasance means that, with respect to such Outstanding Securities, the Company may omit to comply with, and shall have no liability in respect of, any term, condition or limitation set forth in any such covenant, whether directly or indirectly, by reason of any reference elsewhere herein to any covenant or by reason of reference in any such covenant to any other provision herein or in any other document and such omission to comply shall not constitute a default or an Event of Default under Section 5.1(4), Section 5.1(7) or otherwise, as the case may be, insofar as it relates to Section 8.1 and, to the extent specified pursuant to Section 3.1, any other restrictive covenant added for the benefit of such Security, but, except as specified above, the remainder of this Indenture and such Securities shall be unaffected thereby; provided that the obligations of the Company with respect to the payment of Additional Amounts, if any, on such Securities as contemplated by Section 10.4 shall remain unsatisfied only to the extent that the Additional Amounts payable with respect to such Securities exceed the amount deposited in respect of such Additional Amounts pursuant to Section 4.2(4)(a) below; *provided, further*, that notwithstanding a covenant defeasance with respect to Section 8.1, any Person to whom a sale, assignment, transfer, lease, conveyance or other disposition is made pursuant to Section 8.1, shall as a condition to such sale, assignment, transfer, lease, conveyance or other disposition, assume by an indenture supplemental hereto in form satisfactory to the Trustee, executed by such successor Person and delivered to the Trustee, the obligations of the Company to the Trustee under Section 6.7 and the second to the last paragraph of Section 4.2.

(4) The following shall be the conditions to the application of clause (2) or (3) of this Section 4.2 to any Outstanding Securities of a series:

(a) The Company shall irrevocably have deposited or caused to be deposited with the Trustee (or another trustee satisfying the requirements of Section 6.8 who shall agree to comply with the provisions of this Section 4.2 applicable to it) as trust funds in trust for the purpose of making the following payments, specifically pledged as security for, and dedicated solely to, the benefit of the Holders of such Securities, (1) an amount in Dollars or in such Foreign Currency in which such Securities are then specified as payable at Stated Maturity, or (2) Government Obligations applicable to such Securities (determined on the basis of the Currency in which such Securities are then specified as payable at Stated Maturity), which through the scheduled payment of principal and interest in respect thereof in accordance with their terms will provide, not later than one day before the due date of any payment of principal of (and premium, if any) and interest, if any, on such Securities, money in an amount, or (3) a combination thereof, in any case, in an amount, sufficient, without consideration of any reinvestment of such principal and interest, in the opinion of a nationally recognized Independent Registered Public Accounting Firm expressed in a written certification thereof delivered to the Trustee, to pay and discharge, and which shall be applied by the Trustee (or other qualifying trustee) to pay and discharge, (y) the principal of (and premium, if any) and interest or Additional Amounts then determinable, if any, on such Outstanding Securities at the Maturity of such principal or installment of principal or interest, provided that the Company shall specify whether such Outstanding Securities are being defeased to Stated Maturity or to the Redemption Date and (z) any mandatory sinking fund payments or analogous payments applicable to such Outstanding Securities on the day on which such payments are due and payable in accordance with the terms of this Indenture and of such Securities.

(b) Such defeasance or covenant defeasance shall not result in a breach or violation of, or constitute a default under, this Indenture or any other material agreement or instrument to which the Company is a party or by which it is bound.

(c) No Event of Default or event that, with notice or lapse of time or both, would become an Event of Default with respect to such Securities shall have occurred and be continuing on the date of such deposit (other than an Event of Default resulting from non-compliance with any covenant from which the Company is released upon effectiveness of such defeasance or covenant defeasance, as applicable).

(d) In the case of an election under clause (2) of this Section 4.2, the Company shall have delivered to the Trustee an Opinion of Counsel stating that:

(i) the Company has received from the Internal Revenue Service a letter ruling, or there has been published by the Internal Revenue Service a Revenue Ruling, or

(ii) since the date of execution of this Indenture, there has been a change in the applicable federal income tax law,

in either case to the effect that, and based thereon such opinion shall confirm that, subject to customary assumptions and exclusions, the Holders of such Outstanding Securities will not recognize income, gain or loss for federal income tax purposes as a result of such defeasance and will be subject to federal income tax on the same amounts, in the same manner and at the same times as would have been the case if such defeasance had not occurred.

(e) In the case of an election under clause (3) of this Section 4.2, the Company shall have delivered to the Trustee an Opinion of Counsel to the effect that, subject to customary assumptions and exclusions, the Holders of such Outstanding Securities will not recognize income, gain or loss for federal income tax purposes as a result of such covenant defeasance and will be subject to federal income tax on the same amounts, in the same manner and at the same times as would have been the case if such covenant defeasance had not occurred.

(f) The Company shall have delivered to the Trustee an Officer's Certificate and an Opinion of Counsel, each stating that all conditions precedent to the defeasance or covenant defeasance under clause (2) or (3) of this Section 4.2 (as the case may be) have been complied with.

(g) If the Securities are to be redeemed prior to their Stated Maturity (other than from mandatory sinking fund payments or analogous payments), notice of such redemption shall have been duly given pursuant to this Indenture or provision therefor satisfactory to the Trustee shall have been made.

(h) Notwithstanding any other provisions of this Section 4.2(4), such defeasance or covenant defeasance shall be effected in compliance with any additional or substitute terms, conditions or limitations which may be imposed on the Company in connection therewith pursuant to Section 3.1.

The Company shall pay and indemnify the Trustee against any tax, fee or other charge, imposed on or assessed against the Government Obligations deposited pursuant to this Section 4.2 or the principal or interest received in respect thereof other than any such tax, fee or other charge which by law is for the account of the Holders of such Outstanding Securities.

Anything in this Section 4.2 to the contrary notwithstanding, the Trustee shall deliver or pay to the Company from time to time upon Company Request any money or Government Obligations (or other property and any proceeds therefrom) held by it as provided in clause (4) of this Section 4.2 which, in the opinion of a nationally recognized Independent Registered Public Accounting Firm expressed in a written certification thereof delivered to the Trustee, are in excess of the amount thereof which would then be required to be deposited to effect a defeasance or covenant defeasance, as applicable, in accordance with this Section 4.2.

Section 4.3 Application of Trust Money

Subject to the provisions of the last paragraph of Section 10.3, all money and Government Obligations (including the proceeds thereof) deposited with the Trustee or other qualifying trustee (solely for purposes of this Section 4.3, the Trustee and any such other trustee are referred to collectively as the "Trustee") pursuant to Section 4.1 or Section 4.2 in respect of any Outstanding Securities of any series shall be held in trust and applied by the Trustee, in accordance with the provisions of the Securities and this Indenture, to the payment, either directly or through any Paying Agent (including the Company acting as its own Paying Agent) as the Trustee may determine, to the Persons entitled thereto, of the principal, premium, if any, interest and Additional Amounts, if any, for whose payment such money has or Government Obligations have been deposited with or received by the Trustee; but such money and Government Obligations need not be segregated from other funds except to the extent required by law.

Section 4.4 Qualifying Trustee

Any trustee appointed pursuant to Section 4.2 for the purpose of holding trust funds deposited pursuant to that Section shall be appointed under an agreement in form acceptable to the Trustee and shall provide to the Trustee a certificate of such trustee, upon which certificate the Trustee shall be entitled to conclusively rely, that all conditions precedent provided for herein to the related defeasance or covenant defeasance have been complied with. In no event shall the Trustee be liable for any acts or omissions of said trustee.

ARTICLE 5

REMEDIES

Section 5.1 Events of Default

“Event of Default,” wherever used herein with respect to Securities of any series, means any one of the following events (whatever the reason for such Event of Default and whether it shall be voluntary or involuntary or be effected by operation of law or pursuant to any judgment, decree or order of any court or any order, rule or regulation of any administrative or governmental body), unless such event is specifically deleted or modified in or pursuant to the supplemental indenture, Board Resolution or Officer’s Certificate establishing the terms of such series pursuant to this Indenture:

(1) default for 30 days in the payment when due of any interest on or any Additional Amount in respect of any Security of such series;

(2) default in the payment of the principal of or any premium on any Security of such series when the principal or premium becomes due and payable at Maturity;

(3) default in the deposit of any sinking fund payment when and as due by the terms of any Security of such series, subject to any cure period specified in any Security of such series;

(4) failure on the part of the Company duly to observe or perform any other of the covenants or agreements (other than those described in clause (1), (2) or (3) above) on the part of the Company with respect to that series contained in such Securities or otherwise established with respect to that series of Securities pursuant to Section 3.1 hereof or contained in this Indenture (other than a covenant or agreement that has been expressly included in this Indenture solely for the benefit of one or more series of Securities other than such series), other than the covenant set forth in Section 7.4, and such failure shall continue for a period of 60 days after the date on which written notice of such failure, requiring the same to be remedied and stating that such notice is a “Notice of Default” shall have been given to the Company by the Trustee, upon direction of Holders of at least 25% in principal amount of the Outstanding Securities of that series; provided, however, that if such failure is not capable of cure within such 60-day period, such 60-day period shall be automatically extended by an additional 60 days so long as (i) such failure is subject to cure, and (ii) the Company is using commercially reasonable efforts to cure such failure; and provided, further, that a failure to comply with any such other agreement in the indenture that results from a change in GAAP shall not be deemed to be an Event of Default;

(5) a decree or order by a court having jurisdiction in the premises shall have been entered adjudging the Company bankrupt or insolvent, or approving as properly filed a petition seeking liquidation or reorganization of the Company under any applicable bankruptcy, insolvency, reorganization or other similar law, and such decree or order shall have continued unvacated and unstayed for a period of 90 days; an involuntary case shall be commenced under any applicable bankruptcy, insolvency, reorganization or other similar law in respect of the Company and shall continue undismissed for a period of 90 days or an order for relief in such case shall have been entered and such order shall have remained in force unvacated and unstayed for a period of 90 days; or a decree or order of a court having jurisdiction in the premises shall have been entered for the appointment on the ground of insolvency or bankruptcy of a receiver, custodian, liquidator, trustee or assignee in bankruptcy or insolvency of the Company or of its property, or for the winding up or liquidation of its affairs, and such decree or order shall have remained in force unvacated and unstayed for a period of 90 days;

(6) the Company shall institute proceedings to be adjudicated a voluntary bankrupt, shall consent to the filing of a bankruptcy proceeding against it, shall file a petition or answer or consent seeking liquidation or reorganization under any applicable bankruptcy, insolvency, reorganization or other similar law, shall consent to the filing of any such petition or shall consent to the appointment on the ground of insolvency or bankruptcy of a receiver or custodian or liquidator or trustee or assignee in bankruptcy or insolvency of it or of its property, or shall make a general assignment for the benefit of creditors; or

(7) any other Event of Default provided in or pursuant to the Indenture with respect to Securities of the series, provided that any such Event of Default that results from a change in GAAP shall not be deemed to be an Event of Default.

If an Event of Default specified in clause (5) or (6) of the definition thereof above occurs, the principal of all Securities shall automatically become due and payable without further action or notice, anything contained in this Indenture or the Securities of each series or established with respect to each series pursuant to Section 3.1 to the contrary notwithstanding. If (a) upon the occurrence and continuance of an Event of Default specified in clause (1) or (2) of the definition thereof, the Company and the Trustee receive notice in writing that Holders of not less than 25% in aggregate principal amount of the Outstanding Notes of that series, or (b) upon the occurrence and continuance of any other Event of Default other than an Event of Default specified in clause (1), (2), (5) and (6) of the definition thereof, the Company and the Trustee receive notice in writing that Holders of not less than a majority in aggregate principal amount of the Outstanding Notes of that series, have declared the principal of all Securities of that series to be due and payable immediately, then upon any such declaration the same shall become and shall be immediately due and payable, anything contained in this Indenture or in the Securities of that series or established with respect to that series to the contrary notwithstanding.

At any time after a declaration of acceleration or automatic acceleration with respect to the Securities of any series has been made and before a judgment or decree for payment of the money due has been obtained by the Trustee as hereafter in this Article 5 provided, the Holders of not less than a majority in principal amount of the Outstanding Securities of such series, by written notice to the Company and the Trustee, may rescind and annul the declaration or automatic acceleration and its consequences if:

(1) the Company has paid or deposited with the Trustee a sum of money sufficient to pay (A) all overdue installments of interest on all Securities of such series and any Additional Amounts payable with respect thereto, (B) the principal of and any premium on any Securities of the series which have become due otherwise than by the declaration of acceleration or automatic acceleration and interest thereon and any Additional Amounts with respect thereto at the rate or rates borne by or provided in such Securities, (C) interest upon overdue interest at the rate or rates prescribed therefor in such Securities and (D) all sums paid or advanced by the Trustee hereunder and the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel; and

(2) all Events of Default with respect to Securities of such series, other than the non-payment of the principal of, any premium and interest on, and any Additional Amounts with respect to, Securities of such series which shall have become due solely by the acceleration, shall have been cured or waived as provided in Section 5.3.

The sole remedy of the Holders for any failure on the part of the Company to duly observe or perform the covenants and agreements set forth in Section 7.4 shall be the right to receive Additional Interest if and to the extent required by any Security, under the circumstances specified therein.

The Company covenants that if:

(1) default is made in the payment of any installment of interest on any Security, or any Additional Amounts payable with respect thereto, when such interest or Additional Amounts shall have become due and payable and such default continues for any cure period specified with respect to such Security,

(2) default is made in the payment of any principal of or premium, if any, on, or any Additional Amounts payable in respect of any principal of or premium, if any, on any Security at its Maturity; or

(3) default is made in the deposit of any sinking fund payment, when and as due by the terms of any Security and such default continues for any cure period specified with respect to such Security;

the Company shall, upon demand of the Trustee, pay to the Trustee, for the benefit of the Holders of such Securities, the whole amount of money then due and payable with respect to such Securities, with interest upon the overdue principal, any premium and, to the extent that payment of such interest shall be legally enforceable, upon any overdue installments of interest and Additional Amounts at the rate or rates borne by or provided for in such Securities, and, in addition thereto, such further amount of money as shall be sufficient to cover the costs and expenses of collection, including the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel and all other amounts due to the Trustee under Section 6.7.

If the Company fails to pay the money it is required to pay the Trustee pursuant to the preceding paragraph forthwith upon the demand of the Trustee, the Trustee, in its own name and as trustee of an express trust, may institute a judicial proceeding for the collection of the money so due and unpaid, and may prosecute such proceeding to judgment or final decree, and may enforce the same against the Company or any other obligor upon such Securities and collect the monies adjudged or decreed to be payable in the manner provided by law out of the property of the Company or any other obligor upon such Securities, wherever situated.

If an Event of Default with respect to the Securities of any series occurs and is continuing, the Trustee may, and if (A) an Event of Default specified in clause (1), (2), (5) or (6) of the definition thereof occurs and is continuing, and Holders of not less than 25% in aggregate principal amount of the Outstanding Securities of such series direct, or (B) an Event of Default other than an Event of Default specified in clause (1), (2), (5) or (6) of the definition thereof occurs and is continuing, and Holders of not less than a majority in aggregate principal amount of the Outstanding Securities of such series direct, so long as such Holders shall have provided the Trustee with such indemnity as it shall require and subject to the provisions of Section 5.12, the Trustee shall, proceed to protect and enforce its rights and the rights of the Holders of Securities of such series by such appropriate judicial proceedings to protect and enforce any such rights, whether for the specific enforcement of any covenant or agreement in this Indenture or such Securities or in aid of the exercise of any power granted herein or therein, or to enforce any other proper remedy.

Section 5.4 Trustee May File Proofs of Claim

In case of the pendency of any receivership, insolvency, liquidation, bankruptcy, reorganization, arrangement, adjustment, composition or other judicial proceeding relative to the Company or any other obligor upon the Securities or the property of the Company or such other obligor or their creditors, the Trustee (irrespective of whether the principal of the Securities shall then be due and payable as therein expressed or by declaration or otherwise and irrespective of whether the Trustee shall have made any demand on the Company for the payment of any overdue principal, premium, interest or Additional Amounts) shall be entitled and empowered, by intervention in such proceeding or otherwise,

(1) to file and prove a claim for the whole amount, or such lesser amount as may be provided for in the Securities of such series, of the principal and any premium, interest and Additional Amounts owing and unpaid in respect of the Securities and to file such other papers or documents as may be necessary or advisable in order to have the claims of the Trustee (including any claim for the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents or counsel) and of the Holders of Securities allowed in such judicial proceeding, and

(2) to collect and receive any monies or other property payable or deliverable on any such claims and to distribute the same;

and any custodian, receiver, assignee, trustee, liquidator, sequestrator or other similar official in any such judicial proceeding is hereby authorized by each Holder of Securities to make such payments to the Trustee and, in the event that the Trustee shall consent to the making of such payments directly to the Holders of Securities, to pay to the Trustee any amount due to it for the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel and any other amounts due the Trustee under Section 6.7.

Nothing herein contained shall be deemed to authorize the Trustee to authorize or consent to or accept or adopt on behalf of any Holder of a Security any plan of reorganization, arrangement, adjustment or composition affecting the Securities or the rights of any Holder thereof, or to authorize the Trustee to vote in respect of the claim of any Holder of a Security in any such proceeding.

Section 5.5 Trustee May Enforce Claims without Possession of Securities

All rights of action and claims under this Indenture or any of the Securities may be prosecuted and enforced by the Trustee without the possession of any of the Securities or the production thereof in any proceeding relating thereto, and any such proceeding instituted by the Trustee shall be brought in its own name as trustee of an express trust, and any recovery or judgment, after provision for the payment of the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel, shall be for the ratable benefit of each and every Holder of a Security in respect of which such judgment has been recovered.

Section 5.6 Application of Money Collected

Any money collected by the Trustee pursuant to this Article 5 with respect to Securities of any series shall be applied in the following order, at the date or dates fixed by the Trustee and, in case of the distribution of such money on account of principal, or any premium, interest or Additional Amounts, upon presentation of such Securities, and the notation thereon of the payment if only partially paid and upon surrender thereof if fully paid:

FIRST: To the payment of all amounts due the Trustee and any predecessor Trustee under Section 6.7;

SECOND: To the payment of the amounts then due and unpaid upon such Securities for principal and any premium, interest and Additional Amounts in respect of which or for the benefit of which such money has been collected, ratably, without preference or priority of any kind, according to the aggregate amounts due and payable on such Securities for principal and any premium, interest and Additional Amounts, respectively; and

THIRD: The balance, if any, to the Company.

Section 5.7 Limitations on Suits

No Holder of any Security of any series shall have any right to institute any proceeding, judicial or otherwise, with respect to this Indenture, or for the appointment of a receiver or trustee, or for any other remedy hereunder, unless

(1) such Holder has previously given written notice to the Trustee of a continuing Event of Default with respect to the Securities of such series;

(2) (a) in the case of an Event of Default specified in clause (1), (2), (5) and (6) of the definition thereof, Holders of not less than 25%, or (b) in the case of an Event of Default other than as specified in clause (1), (2), (5) and (6) of the definition thereof, Holders of not less than a majority, in aggregate principal amount of the Outstanding Securities of such series shall have made written request to the Trustee to institute proceedings in respect of such Event of Default in its own name as Trustee hereunder;

(3) such Holder or Holders have offered to the Trustee indemnity satisfactory to it against the costs, expenses and liabilities to be incurred in compliance with such request;

(4) the Trustee for 60 days after its receipt of such notice, request and offer of indemnity has failed to institute any such proceeding; and

(5) no direction inconsistent with such written request has been given to the Trustee during such 60-day period by the Holders of a majority in principal amount of the Outstanding Securities of such series;

it being understood and intended that no one or more of such Holders shall have any right in any manner whatever by virtue of, or by availing of, any provision of this Indenture or any Security to affect, disturb or prejudice the rights of any other such Holders or Holders of Securities of any other series, or to obtain or to seek to obtain priority or preference over any other Holders or to enforce any right under this Indenture, except in the manner herein provided and for the equal and ratable benefit of all such Holders.

Section 5.8 Unconditional Right of Holders to Receive Principal and any Premium, Interest and Additional Amounts

Notwithstanding any other provision in this Indenture, the Holder of any Security shall have the right, which is absolute and unconditional, to receive payment of the principal of, any premium and (subject to Section 3.5 and Section 3.7) interest on, and any Additional Amounts with respect to, such Security, on the respective Stated Maturity or Maturities therefor specified in such Security (or, in the case of redemption, on the Redemption Date or, in the case of repayment at the option of such Holder if provided in or pursuant to this Indenture, on the date such repayment is due) and to institute suit for the enforcement of any such payment, and such right shall not be impaired without the consent of such Holder.

Section 5.9 Restoration of Rights and Remedies

If the Trustee or any Holder of a Security has instituted any proceeding to enforce any right or remedy under this Indenture and such proceeding has been discontinued or abandoned for any reason, or has been determined adversely to the Trustee or to such Holder, then and in every such case the Company, the Trustee and each such Holder shall, subject to any determination in such proceeding, be restored severally and respectively to their former positions hereunder, and thereafter all rights and remedies of the Trustee and each such Holder shall continue as though no such proceeding had been instituted.

Section 5.10 Rights and Remedies Cumulative

Except as otherwise provided with respect to the replacement or payment of mutilated, destroyed, lost or stolen Securities in the last paragraph of Section 3.6, no right or remedy herein conferred upon or reserved to the Trustee or to each and every Holder of a Security is intended to be exclusive of any other right or remedy, and every right and remedy, to the extent permitted by law, shall be cumulative and in addition to every other right and remedy given hereunder or now or hereafter existing at law or in equity or otherwise. The assertion or employment of any right or remedy hereunder, or otherwise, shall not, to the extent permitted by law, prevent the concurrent assertion or employment of any other appropriate right or remedy.

Section 5.11 Delay or Omission Not Waiver

No delay or omission of the Trustee or of any Holder of any Security to exercise any right or remedy accruing upon any Event of Default shall impair any such right or remedy or constitute a waiver of any such Event of Default or an acquiescence therein. Every right and remedy given by this Article 5 or by law to the Trustee or to any Holder of a Security may be exercised from time to time, and as often as may be deemed expedient, by the Trustee or by such Holder, as the case may be.

Section 5.12 Control by Holders of Securities

The Holders of a majority in principal amount of the Outstanding Securities of any series shall have the right to direct the time, method and place of conducting any proceeding for any remedy available to the Trustee or exercising any trust or power conferred on the Trustee with respect to the Securities of such series, provided that:

(1) such direction shall not be in conflict with any rule of law or with this Indenture or with the Securities of any series and would not involve the Trustee in personal liability,

(2) the Trustee may take any other action deemed proper by the Trustee which is not inconsistent with such direction, and

(3) such direction is not unduly prejudicial to the rights of the other Holders of Securities of such series not joining in such action.

Section 5.13 Waiver of Past or Existing Defaults

The Holders of not less than a majority in principal amount of the Outstanding Securities of any series on behalf of the Holders of all the Securities of such series may waive any past or existing default or Event of Default hereunder with respect to such series and its consequences, except a continuing default:

(1) in the payment of the principal of, any premium or interest on, or any Additional Amounts with respect to, any Security of such series, or

(2) in respect of a covenant or provision hereof which under Article 9 hereof cannot be modified or amended without the consent of the Holder of each Outstanding Security of such series affected.

Upon any such waiver, such default or Event of Default shall cease to exist, and any Event of Default arising therefrom shall be deemed to have been cured, for every purpose of this Indenture; but no such waiver shall extend to any subsequent or other default or impair any right consequent thereon.

Section 5.14 Waiver of Stay or Extension Laws

The Company covenants that (to the extent that it may lawfully do so) it will not at any time insist upon, or plead, or in any manner whatsoever claim or take the benefit or advantage of, any stay or extension law wherever enacted, now or at any time hereafter in force, which may affect the covenants or the performance of this Indenture; and the Company expressly waives (to the extent that it may lawfully do so) all benefit or advantage of any such law and covenants that it will not hinder, delay or impede the execution of any power herein granted to the Trustee, but will suffer and permit the execution of every such power as though no such law had been enacted.

Section 5.15 Undertaking for Costs

All parties to this Indenture agree, and each Holder of any Security by his or her acceptance thereof shall be deemed to have agreed, that any court may in its discretion require, in any suit for the enforcement of any right or remedy under this Indenture, or in any suit against the Trustee for any action taken or omitted by it as Trustee, the filing by any party litigant in such suit of any undertaking to pay the costs of such suit, and that such court may in its discretion assess reasonable costs, including reasonable attorneys' fees and expenses, against any party litigant in such suit having due regard to the merits and good faith of the claims or defenses made by such party litigant; but the provisions of this Section 5.15 shall not apply to any suit instituted by the Trustee, to any suit instituted by any Holder, or group of Holders, holding in the aggregate more than 10% in principal amount of Outstanding Securities of any series, or to any suit instituted by any Holder for the enforcement of the payment of the principal of (or premium, if any) or interest, if any, on or Additional Amounts, if any, with respect to any Security on or after the respective Stated Maturities expressed in such Security (or, in the case of redemption, on or after the Redemption Date, and, in the case of repayment, on or after the date for repayment) or for the enforcement of the right, if any, to convert or exchange any Security into Common Stock or other securities, cash or other property in accordance with its terms.

ARTICLE 6

THE TRUSTEE

Section 6.1 Certain Duties and Responsibilities

The duties and responsibilities of the Trustee shall be as provided by the Trust Indenture Act. Except during the continuance of an Event of Default with respect to the Securities of a series of which a Responsible Officer has actual knowledge, the Trustee undertakes to perform such duties and only such duties as are specifically set forth in this Indenture with respect to such Securities, and no implied covenants or obligations shall be read into this Indenture with respect to such Securities against the Trustee. In case an Event of Default of which a Responsible Officer has actual knowledge with respect to the Securities of a series has occurred (which has not been cured or waived), the Trustee shall exercise the rights and powers vested in it by this Indenture, and use the same degree of care and skill in their exercise, with respect to such Securities, as a prudent person would exercise or use under the circumstances in the conduct of such person's own affairs. Notwithstanding the foregoing, no provision of this Indenture shall require the Trustee to expend or risk its own funds or otherwise incur any financial liability in the performance of any of its duties hereunder, or in the exercise of any of its rights or powers. Whether or not therein expressly so provided, every provision of this Indenture relating to the conduct or affecting the liability of or affording protection to the Trustee shall be subject to the provisions of this Section 6.1.

Section 6.2 Certain Rights of Trustee

Subject to the provisions of Section 6.1:

(1) the Trustee may conclusively rely and shall be fully protected in acting or refraining from acting upon any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, bond, debenture, note, coupon, other evidence of indebtedness or other paper or document (whether in its original or facsimile form) believed by it to be genuine and to have been signed or presented by the proper party or parties;

(2) any request or direction of the Company mentioned herein shall be sufficiently evidenced by a Company Request or a Company Order (in each case, other than delivery of any Security to the Trustee for authentication and delivery pursuant to Section 3.3 which shall be sufficiently evidenced as provided therein) and any resolution of the Board of Directors of the Company may be sufficiently evidenced by a Board Resolution;

(3) whenever in the administration of this Indenture the Trustee shall deem it desirable that a matter be proved or established prior to taking, suffering or omitting any action hereunder, the Trustee (unless other evidence shall be herein specifically prescribed) may, in the absence of bad faith on its part, request and conclusively rely upon an Officer's Certificate;

(4) the Trustee may consult with counsel of its selection and the advice of such counsel or any Opinion of Counsel shall be full and complete authorization and protection in respect of any action taken, suffered or omitted by it hereunder in good faith and in reliance thereon;

(5) the Trustee shall be under no obligation to exercise any of the rights or powers vested in it by or pursuant to this Indenture or to institute, conduct or defend any litigation hereunder or in relation hereto at the request or direction of any of the Holders of Securities of any series pursuant to this Indenture, unless such Holders shall have

offered to the Trustee security or indemnity reasonably satisfactory to it against the costs, expenses and liabilities which might be incurred by it in compliance with such request or direction;

(6) the Trustee shall not be bound to make any investigation into the facts or matters stated in any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, bond, debenture, coupon, note, other evidence of indebtedness or other paper or document, but the Trustee, in its discretion, may but shall not be obligated to make such further inquiry or investigation into such facts or matters as it may see fit, and, if the Trustee shall determine to make such further inquiry or investigation, it shall be entitled to examine, during business hours and upon reasonable notice, the books, records and premises of the Company, personally or by agent or attorney at the expense of the Company and shall incur no liability or additional liability of any kind by reason of such inquiry or investigation;

(7) the Trustee may execute any of the trusts or powers hereunder or perform any duties hereunder either directly or by or through agents, attorneys or custodians and the Trustee shall not be responsible for any misconduct or negligence on the part of any agent, attorney or custodians appointed with due care by it hereunder;

(8) the Trustee shall not be liable in its individual capacity for any action taken or suffered to be taken, unless it shall be proved that the Trustee was negligent, acted in bad faith or engaged in willful misconduct;

(9) the Authenticating Agent, Paying Agent, and Security Registrar shall have the same protections as the Trustee set forth hereunder;

(10) the Trustee shall not be liable in its individual capacity with respect to any action taken, suffered or omitted to be taken by it in good faith in accordance with this Indenture, and, to the extent not so provided herein, with respect to any act requiring the Trustee to exercise its own discretion, relating to the time, method and place of conducting any proceeding for any remedy available to the Trustee, or exercising any trust or power conferred upon the Trustee, under this Indenture or any Securities, unless it shall be proved that, in connection with any such action taken, suffered or omitted or any such act, the Trustee was negligent, acted in bad faith or engaged in willful misconduct;

(11) no provision of this Indenture shall require the Trustee to expend or risk its own funds or otherwise incur any financial liability in the performance of any of its duties hereunder, or in the exercise of any of its rights or powers;

(12) the Trustee shall not be charged with knowledge or required to take notice of any default or Event of Default with respect to the Securities unless either (A) a Responsible Officer shall have actual knowledge of such default or Event of Default or (B) written notice of such default or Event of Default, which references the Securities and this Indenture, shall have been given to a Responsible Officer by the Company or other obligor on such Securities or by any Holder of such Securities;

(13) the Trustee shall not be liable in its individual capacity for any action taken, suffered or omitted by it in good faith and reasonably believed by it to be authorized or within the discretion or rights or powers conferred upon it by this Indenture;

(14) the rights, privileges, protections, immunities and benefits given to the Trustee, including, without limitation, its right to be indemnified, are extended to, and shall be enforceable by, the Trustee in each of its capacities hereunder, and each agent, custodian, director, officer, employee and other Person employed to act hereunder;

(15) the Trustee may request that the Company deliver an Officer's Certificate setting forth the names of individuals and/or titles of Officers authorized at such time to take specified actions pursuant to this Indenture, which Officer's Certificate may be signed by any person authorized to sign an Officer's Certificate, including any person specified as so authorized in any such certificate previously delivered and not superseded;

(16) the permissive rights of the Trustee to take certain actions under or perform any discretionary act enumerated in this Indenture shall not be construed as a duty unless so specified herein, and the Trustee shall not be answerable for other than its negligence or willful misconduct in the performance of such action or act;

(17) the Trustee shall not be liable in its individual capacity with respect to any action taken, suffered or omitted to be taken by it in good faith in accordance with this Indenture or at the direction of the Holders of a majority in aggregate principal amount of the Outstanding Securities relating to the time, method and place of conducting any proceeding for any remedy available to the Trustee, or exercising or omitting to exercise any trust or power conferred upon the Trustee, under this Indenture;

(18) in no event shall the Trustee be liable for special, indirect or consequential loss or damage of any kind whatsoever (including but not limited to lost profits) even if the Trustee has been advised of the likelihood of such loss or damage and regardless of the form of action; and

(19) in no event shall the Trustee be responsible or liable for any failure or delay in the performance of its obligations hereunder arising out of or caused by, directly or indirectly, forces beyond its control, including, without limitation strikes, work stoppages, accidents, acts of war or terrorism, civil or military disturbances, nuclear or natural catastrophes or acts of God, and interruptions, loss or malfunctions of utilities, communications or computer (software and hardware) services; it being understood that the Trustee shall use reasonable efforts which are consistent with accepted practices in the banking industry to resume performance as soon as practicable under the circumstances.

Section 6.3 Notice of Defaults

Within 90 days after the occurrence of any default hereunder with respect to the Securities of any series of which a Responsible Officer has actual knowledge, the Trustee shall give the Holders of Securities of such series entitled to receive reports pursuant to Section 7.3, notice of such default hereunder actually known to a Responsible Officer, unless such default shall have been cured or waived; provided, however, that, except in the case of a default in the payment of the principal of (or premium, if any), or interest, if any, on, or Additional Amounts or any sinking fund or purchase fund installment with respect to, any Security of such series, the

Trustee shall be protected in withholding such notice if and so long as the board of directors, the executive committee or a trust committee of directors and/or Responsible Officers in good faith determine that the withholding of such notice is in the best interest of the Holders of Securities of such series; and provided, further, that in the case of any default of the character specified in Section 5.1(4) with respect to Securities of such series, no such notice to Holders shall be given until at least 30 days after the occurrence thereof. For the purpose of this Section, the term “default” means any event that is, or after notice or lapse of time or both would become, an Event of Default with respect to Securities of such series.

Section 6.4 Not Responsible for Recitals or Issuance of Securities

The recitals contained herein and in the Securities, except the Trustee’s certificate of authentication, shall be taken as the statements of the Company, and neither the Trustee nor any Authenticating Agent assumes any responsibility for their correctness. The Trustee makes no representations as to the validity, sufficiency or priority of this Indenture or of the Securities. Neither the Trustee nor any Authenticating Agent shall be accountable for the use or application by the Company of the Securities or the proceeds thereof. Except with respect to the authentication of Securities pursuant to Section 3.3, the Trustee shall not be responsible for the legality or the validity of this Indenture or any Securities issued or to be issued hereunder.

Section 6.5 May Hold Securities

The Trustee, any Authenticating Agent, any Paying Agent, any Security Registrar or any other Person that may be an agent of the Trustee or the Company, in its individual or any other capacity, may become the owner or pledgee of Securities and, subject to Sections 310(b) and 311 of the Trust Indenture Act, may otherwise deal with the Company with the same rights it would have if it were not the Trustee, Authenticating Agent, Paying Agent, Security Registrar or such other Person.

Section 6.6 Money Held in Trust

Money held by the Trustee in trust hereunder need not be segregated from other funds except to the extent required by law. The Trustee shall be under no liability for interest on any money received by it hereunder except as otherwise agreed in writing with the Company.

Section 6.7 Compensation and Reimbursement

The Company agrees:

(1) to pay to the Trustee from time to time such compensation as shall be agreed upon from time to time in writing between the Company and the Trustee for all services rendered by the Trustee hereunder (which compensation shall not be limited by any provision of law in regard to the compensation of a trustee of an express trust);

(2) except as otherwise expressly provided herein, to reimburse the Trustee upon its request for all reasonable expenses, disbursements and advances incurred or made by the Trustee in accordance with any provision of this Indenture arising out of or in connection with the acceptance or administration of the trust or trusts hereunder (including the reasonable compensation and the expenses and disbursements of its agents and counsel), except any such expense, disbursement or advance as may be caused by the Trustee’s own negligence or willful misconduct; and

(3) to fully indemnify each of the Trustee and any predecessor Trustee and its agents, officers, directors and employees for, and to hold them harmless against, any loss, liability, damage, claim or expense (including reasonable legal fees and expenses), including taxes (other than taxes based on the income of the Trustee), incurred without negligence or willful misconduct on their part, arising out of or in connection with the acceptance or administration of the trust or trusts hereunder, including the reasonable costs and expenses of defending themselves against any claim or liability (whether asserted by the Company, a Holder of Securities, or any other Person) in connection with the exercise or performance of any of their powers or duties hereunder.

As security for the performance of the payment obligations of the Company under this Section 6.6, the Trustee shall have a lien prior to the Securities of any series upon all property and funds held or collected by the Trustee as such, except funds held in trust for the payment of principal of, and premium or interest on, or any Additional Amounts with respect to, particular Securities. Such lien shall survive the resignation or removal of the Trustee and the satisfaction and discharge of this Indenture. Without prejudice to any other rights available to the Trustee under applicable law, when the Trustee incurs expenses or renders services after a default or Event of Default specified in Section 5.1(5) and 5.1(6) hereof occurs, the expenses and the compensation for the services (including the fees and expense of its agents and counsel) are intended to constitute expense of administration under U.S. Code, Title 11 or any other similar foreign, federal or state law for the relief of debtors.

Without prejudice to any other rights available to the Trustee under applicable law, to the extent permitted by law any compensation or expense incurred by the Trustee after a default specified in or pursuant to Section 5.1 is intended to constitute an expense of administration under any then applicable bankruptcy or insolvency law. "Trustee" for purposes of this Section 6.7 shall include any predecessor Trustee but the negligence or willful misconduct of any Trustee shall not affect the rights of any other Trustee under this Section 6.7.

Notwithstanding any other provision of this Indenture to the contrary, in no event shall the Trustee be liable for special, indirect or consequential damages of any kind whatsoever (including but not limited to lost profits) even if the Trustee had been advised of the likelihood of such loss or damage and regardless of the form of action.

The provisions of this Section 6.7 shall survive the satisfaction and discharge of this Indenture or the earlier resignation or removal of the Trustee and shall apply with equal force and effect to the Trustee in its capacity as Authenticating Agent, Paying Agent or Security Registrar.

Section 6.8 Corporate Trustee Required; Eligibility; Conflicting Interests

There shall at all times be a Trustee hereunder that is a Corporation or a national banking association, organized and doing business under the laws of the United States of America, any state thereof or the District of Columbia, eligible under Section 310(a)(1) of the Trust Indenture Act to act as trustee under an indenture qualified under the Trust Indenture Act and that has a combined capital and surplus (computed in accordance with Section 310(a)(2) of the Trust Indenture Act) of at least \$50,000,000 subject to supervision or examination by federal or state authority. If at any time the Trustee shall cease to be eligible in accordance with the provisions of this Section 6.8, it shall resign immediately in the manner and with the effect hereinafter specified in this Article 6.

If the Trustee has or shall acquire a conflicting interest within the meaning of the Trust Indenture Act, the Trustee shall either eliminate such interest or resign, to the extent and in the manner provided by, and subject to the provisions of, the Trust Indenture Act and this Indenture. To the extent permitted by such Act, the Trustee shall not be deemed to have a conflicting interest by virtue of being a trustee under this Indenture with respect to Securities of more than one series.

Section 6.9 Resignation and Removal; Appointment of Successor

(1) No resignation or removal of the Trustee and no appointment of a successor Trustee pursuant to this Article 6 shall become effective until the acceptance of appointment by the successor Trustee pursuant to Section 6.10.

(2) The Trustee may resign at any time with respect to the Securities of one or more series by giving written notice thereof to the Company. If the instrument of acceptance by a successor Trustee required by Section 6.10 shall not have been delivered to the Trustee within 30 days after the giving of such notice of resignation, the resigning Trustee may petition, at the expense of the Company, any court of competent jurisdiction for the appointment of a successor Trustee with respect to such series.

(3) The Trustee may be removed at any time with respect to the Securities of any series by Act of the Holders of a majority in principal amount of the Outstanding Securities of such series, delivered to the Trustee and the Company. If the instrument of acceptance by a successor Trustee required by Section 6.10 shall not have been delivered to the Trustee within 30 days after the giving of such notice of removal, the Trustee being removed may petition, at the expense of the Company, any court of competent jurisdiction for the appointment of a successor Trustee with respect to such series. The Trustee for one or more series of Securities may be removed by the Company, so long as no default or Event of Default has occurred and is continuing with respect to such series.

(4) If at any time:

(a) the Trustee shall fail to comply with the obligations imposed upon it under Section 310(b) of the Trust Indenture Act with respect to Securities of any series after written request therefor by the Company or any Holder of a Security of such series who has been a bona fide Holder of a Security of such series for at least six months,

(b) the Trustee shall cease to be eligible under Section 6.8 and shall fail to resign after written request therefor by the Company or any such Holder, or

(c) the Trustee shall become incapable of acting or shall be adjudged bankrupt or insolvent or a receiver of the Trustee or of its property shall be appointed or any public officer shall take charge or control of the Trustee or of its property or affairs for the purpose of rehabilitation, conservation or liquidation,

then, in any such case,

- (i) the Company, by or pursuant to a Company Order, may remove the Trustee with respect to all Securities or the Securities of such series, or
- (ii) subject to Section 5.15, any Holder of a Security who has been a bona fide Holder of a Security of such series for at least six months may, on behalf of himself and all others similarly situated, petition any court of competent jurisdiction for the removal of the Trustee with respect to all Securities of such series and the appointment of a successor Trustee or Trustees.

(5) If the Trustee shall resign, be removed or become incapable of acting, or if a vacancy shall occur in the office of Trustee for any cause, with respect to the Securities of one or more series, the Company, by or pursuant to a Company Order, shall promptly appoint a successor Trustee or Trustees with respect to the Securities of such series (it being understood that any such successor Trustee may be appointed with respect to the Securities of one or more or all of such series and that at any time there shall be only one Trustee with respect to the Securities of any particular series) and shall comply with the applicable requirements of Section 6.10. If, within one year after such resignation, removal or incapacity, or the occurrence of such vacancy, a successor Trustee with respect to the Securities of any series shall be appointed by Act of the Holders of a majority in principal amount of the Outstanding Securities of such series delivered to the Company and the retiring Trustee, the successor Trustee so appointed shall, forthwith upon its acceptance of such appointment in accordance with the applicable requirements of Section 6.10, become the successor Trustee with respect to the Securities of such series and to that extent supersede the successor Trustee appointed by the Company. If no successor Trustee with respect to the Securities of any series shall have been so appointed by the Company or the Holders of Securities and accepted appointment in the manner required by Section 6.10, any Holder of a Security who has been a bona fide Holder of a Security of such series for at least six months may, on behalf of himself and all others similarly situated, petition any court of competent jurisdiction for the appointment of a successor Trustee with respect to the Securities of such series.

(6) The Company shall give notice of each resignation and each removal of the Trustee with respect to the Securities of any series and each appointment of a successor Trustee with respect to the Securities of any series by mailing written notice of such event by first-class mail, postage prepaid, to the Holders of Registered Securities, if any, of such series as their names and addresses appear in the Security Register. Each notice shall include the name of the successor Trustee with respect to the Securities of such series and the address of its Corporate Trust Office.

(7) In no event shall any retiring Trustee be liable for the acts or omissions of any successor Trustee hereunder.

Section 6.10 Acceptance of Appointment by Successor

(1) Upon the appointment hereunder of any successor Trustee with respect to all Securities, such successor Trustee so appointed shall execute, acknowledge and deliver to the Company and the retiring Trustee an instrument accepting such appointment, and thereupon the resignation or removal of the retiring Trustee shall become effective and such successor Trustee, without any further act, deed or conveyance, shall become vested with all the rights, powers, trusts and duties hereunder of the retiring Trustee; but, on the request of the Company or such successor Trustee, such retiring Trustee, upon payment of its charges, shall execute and deliver an instrument transferring to such successor Trustee all the rights, powers and trusts of the retiring Trustee and, subject to Section 10.3, shall duly assign, transfer and deliver to such successor Trustee all property and money held by such retiring Trustee hereunder, subject nevertheless to its lien, if any, provided for in Section 6.7.

(2) Upon the appointment hereunder of any successor Trustee with respect to the Securities of one or more (but not all) series, the Company, the retiring Trustee and such successor Trustee shall execute and deliver an indenture supplemental hereto wherein each successor Trustee shall accept such appointment and which (a) shall contain such provisions as shall be necessary or desirable to transfer and confirm to, and to vest in, such successor Trustee all the rights, powers, trusts and duties of the retiring Trustee with respect to the Securities of that or those series to which the appointment of such successor Trustee relates, (b) if the retiring Trustee is not retiring with respect to all Securities, shall contain such provisions as shall be deemed necessary or desirable to confirm that all the rights, powers, trusts and duties of the retiring Trustee with respect to the Securities of that or those series as to which the retiring Trustee is not retiring and shall continue to be vested in the retiring Trustee and (c) shall add to or change any of the provisions of this Indenture as shall be necessary to provide for or facilitate the administration of the trusts hereunder by more than one Trustee, it being understood that nothing herein or in such supplemental indenture shall constitute such Trustees co-trustees of the same trust, that each such Trustee shall be trustee of a trust or trusts hereunder separate and apart from any trust or trusts hereunder administered by any other such Trustee and that no Trustee shall be responsible for any notice given to, or received by, or any act or failure to act on the part of any other Trustee hereunder, and, upon the execution and delivery of such supplemental indenture, the resignation or removal of the retiring Trustee shall become effective to the extent provided therein, such retiring Trustee shall have no further responsibility for the exercise of rights and powers or for the performance of the duties and obligations vested in the Trustee under this Indenture with respect to the Securities of that or those series to which the appointment of such successor Trustee relates other than as hereinafter expressly set forth, and such successor Trustee, without any further act, deed or conveyance, shall become vested with all

the rights, powers, trusts and duties of the retiring Trustee with respect to the Securities of that or those series to which the appointment of such successor Trustee relates; but, on request of the Company or such successor Trustee, such retiring Trustee, upon payment of its charges with respect to the Securities of that or those series to which the appointment of such successor Trustee relates and subject to Section 10.3 shall duly assign, transfer and deliver to such successor Trustee, to the extent contemplated by such supplemental indenture, the property and money held by such retiring Trustee hereunder with respect to the Securities of that or those series to which the appointment of such successor Trustee relates, subject to its lien, if any, provided for in Section 6.7.

(3) Upon request of any Person appointed hereunder as a successor Trustee, the Company shall execute any and all instruments for more fully and certainly vesting in and confirming to such successor Trustee all such rights, powers and trusts.

(4) No Person shall accept its appointment hereunder as a successor Trustee unless at the time of such acceptance such successor Person shall be qualified and eligible under this Article 6.

Section 6.11 Merger; Conversion; Consolidation; or Succession to Business

Any Corporation or national banking association into which the Trustee may be merged or converted or with which it may be consolidated, or any Corporation or national banking association resulting from any merger, conversion or consolidation to which the Trustee shall be a party, or any Corporation or national banking association succeeding to all or substantially all of the corporate trust business of the Trustee by sale or otherwise, shall be the successor of the Trustee hereunder, provided such Corporation or national banking association shall otherwise be qualified and eligible under this Article 6, in each case without the execution or filing of any paper or any further act on the part of any of the parties hereto. In case any Securities shall have been authenticated but not delivered by the Trustee then in office, any successor by merger, conversion or consolidation to such authenticating Trustee may adopt such authentication and deliver the Securities so authenticated with the same effect as if such successor Trustee had itself authenticated such Securities.

Section 6.12 Appointment of Authenticating Agent

The Trustee may appoint one or more Authenticating Agents acceptable to the Company with respect to one or more series of Securities which shall be authorized to act on behalf of the Trustee to authenticate Securities of that or those series issued upon original issue, exchange, registration of transfer, partial redemption or partial repayment or pursuant to Section 3.6, and Securities so authenticated shall be entitled to the benefits of this Indenture and shall be valid and obligatory for all purposes as if authenticated by the Trustee hereunder. Wherever reference is made in this Indenture to the authentication and delivery of Securities by the Trustee or the Trustee's certificate of authentication, such reference shall be deemed to include authentication and delivery on behalf of the Trustee by an Authenticating Agent and a certificate of authentication executed on behalf of the Trustee by an Authenticating Agent.

Each Authenticating Agent must be acceptable to the Company and, except as provided in or pursuant to this Indenture, shall at all times be a Corporation or national banking association that would be permitted by the Trust Indenture Act to act as trustee under an indenture qualified under the Trust Indenture Act, is authorized under applicable law and by its charter to act as an Authenticating Agent and has a combined capital and surplus (computed in accordance with Section 310(a)(2) of the Trust Indenture Act) of at least \$50,000,000. If at any time an Authenticating Agent shall cease to be eligible in accordance with the provisions of this Section 6.12, it shall resign immediately in the manner and with the effect specified in this Section 6.12.

Any Corporation or national banking association into which an Authenticating Agent may be merged or converted or with which it may be consolidated, or any Corporation or national banking association resulting from any merger, conversion or consolidation to which such Authenticating Agent shall be a party, or any Corporation or national banking association succeeding to all or substantially all of the corporate agency or corporate trust business of an Authenticating Agent, shall be the successor of such Authenticating Agent hereunder, provided such Corporation or national banking association shall be otherwise eligible under this Section 6.12, without the execution or filing of any paper or any further act on the part of the Trustee or the Authenticating Agent.

An Authenticating Agent may resign at any time by giving written notice thereof to the Trustee and the Company. The Trustee may at any time terminate the agency of an Authenticating Agent by giving written notice thereof to such Authenticating Agent and the Company. Upon receiving such a notice of resignation or upon such a termination, or in case at any time such Authenticating Agent shall cease to be eligible in accordance with the provisions of this Section 6.12, the Trustee may appoint a successor Authenticating Agent which shall be acceptable to the Company and shall mail written notice of such appointment by first-class mail, postage prepaid, to all Holders of Registered Securities, if any, of the series with respect to which such Authenticating Agent shall serve, as their names and addresses appear in the Security Register. Any successor Authenticating Agent, upon acceptance of its appointment hereunder, shall become vested with all the rights, powers and duties of its predecessor hereunder, with like effect as if originally named as an Authenticating Agent. No successor Authenticating Agent shall be appointed unless eligible under the provisions of this Section 6.12.

The Company agrees to pay each Authenticating Agent from time to time reasonable compensation for its services under this Section 6.12 to the extent agreed in writing.

The provisions of Section 3.3, Section 6.1, Section 6.4 and Section 6.5 shall be applicable to each Authenticating Agent.

If an Authenticating Agent is appointed with respect to one or more series of Securities pursuant to this Section 6.12, the Securities of such series may have endorsed thereon, in addition to or in lieu of the Trustee's certificate of authentication, an alternate certificate of authentication in substantially the following form:

This is one of the Securities of the series designated therein referred to in the within-mentioned Indenture.

as Trustee

By: _____
As Authenticating Agent

By: _____
Authorized Officer

Dated:

If all of the Securities of any series may not be originally issued at one time, and if the Trustee does not have an office capable of authenticating Securities upon original issuance located in a Place of Payment where the Company wishes to have Securities of such series authenticated upon original issuance, the Trustee, if so requested by Company Request (which writing need not be accompanied by or contained in an Officer's Certificate), shall appoint in accordance with this Section 6.12 (and subject to such procedures as shall be acceptable to the Trustee) an Authenticating Agent having an office in a Place of Payment designated by the Company with respect to such series of Securities.

ARTICLE 7

HOLDERS LISTS AND REPORTS BY TRUSTEE AND COMPANY

Section 7.1 Company to Furnish Trustee Names and Addresses of Holders

In accordance with Section 312(a) of the Trust Indenture Act, the Company shall furnish or cause to be furnished to the Trustee:

(1) semi-annually with respect to Securities of each series not later than 15 days after each Regular Record Date in respect of Securities of a series, a list, in each case in such form as the Trustee may reasonably require, of the names and addresses of Holders of such Securities as of the applicable date, and

(2) at such other times as the Trustee may request in writing, within 30 days after the receipt by the Company of any such request, a list of similar form and content as of a date not more than 15 days prior to the time such list is furnished,

provided, however, that so long as the Trustee is the Security Registrar no such list shall be required to be furnished.

Section 7.2 Preservation of Information; Communications to Holders

The Trustee shall comply with the obligations imposed upon it pursuant to Section 312 of the Trust Indenture Act.

Every Holder of Securities, by receiving and holding the same, agrees with the Company and the Trustee that neither the Company, the Trustee, any Paying Agent or any Security Registrar shall be held accountable by reason of the disclosure of any such information as to the names and addresses of the Holders of Securities in accordance with Section 312 of the Trust Indenture Act, regardless of the source from which such information was derived, and that the Trustee shall not be held accountable by reason of mailing any material pursuant to a request made under Section 312(b) of the Trust Indenture Act.

Section 7.3 Reports by Trustee

(1) Within 60 days after May 15 of each year commencing with the first May 15 following the first issuance of Securities pursuant to Section 3.1, if required by Section 313(a) of the Trust Indenture Act, the Trustee shall transmit, pursuant to Section 313(c) of the Trust Indenture Act, a brief report dated as of such May 15 with respect to any of the events specified in said Section 313(a) that may have occurred since the later of the immediately preceding May 15 and the date of this Indenture.

(2) The Trustee shall transmit any reports required by Section 313(a) of the Trust Indenture Act at the times specified therein.

(3) A copy of each report, if any, described in Section 7.3(1) and (2) shall, at the time of such transmission to Holders, be filed by the Trustee with each stock exchange, if any, upon which the Securities are listed, with the Commission and with the Company. The Company will promptly notify the Trustee when the Securities are listed on any stock exchange and of any delisting thereof.

Section 7.4 Reports by Company

The Company, pursuant to Section 314(a) of the Trust Indenture Act, shall:

(1) file with the Trustee, within 30 days after the Company has filed the same with the Commission, unless such reports are available on the Commission's EDGAR filing system (or any successor thereto), copies of the annual reports and of the information, documents and other reports (or copies of such portions of any of the foregoing as the Commission may from time to time by rules and regulations prescribe) which the Company may be required to file with the Commission pursuant to Section 13 or Section 15(d) of the Exchange Act; or, if the Company is not required to file information, documents or reports pursuant to either of Section 13 or Section 15(d) of the Exchange Act, then it shall file with the Trustee and the Commission, in accordance with rules and regulations prescribed from time to time by the Commission, such of the supplementary and periodic information, documents and reports which may be required pursuant to Section 13 of the Exchange Act in respect of a security listed and registered on a national securities exchange as may be prescribed from time to time in such rules and regulations;

(2) file with the Trustee and the Commission, in accordance with rules and regulations prescribed from time to time by the Commission, such additional information, documents and reports with respect to compliance by the Company with the conditions and covenants of this Indenture as may be required from time to time by such rules and regulations; and

(3) transmit within 30 days after the filing thereof with the Trustee, in the manner and to the extent provided in Section 313(c) of the Trust Indenture Act, such summaries of any information, documents and reports required to be filed by the Company pursuant to paragraphs (1) and (2) of this Section 7.4 as may be required by rules and regulations prescribed from time to time by the Commission.

Delivery of such reports, information and documents to the Trustee is for informational purposes only and the Trustee's receipt of such shall not constitute constructive notice of any information contained therein or determinable from information contained therein, including the Company's compliance with any of its covenants hereunder (as to which the Trustee is entitled to rely exclusively on Officer's Certificates).

ARTICLE 8

CONSOLIDATION, MERGER AND SALES

Section 8.1 Company May Consolidate, etc., Only on Certain Terms

The Company shall not directly or indirectly consolidate with or merge with or into, or sell, assign, transfer, lease, convey or otherwise dispose of all or substantially all of its assets and properties and the assets and properties of its Subsidiaries (taken as a whole) to another Person in one or more related transactions unless:

(1) either: (A) the Company is the survivor; or (B) the Person formed by or surviving any such consolidation or merger (if other than the Company) or to which such sale, assignment, transfer, lease, conveyance or other disposition has been made is a Person organized or existing under the laws of the United States, any state of the United States or the District of Columbia;

(2) the Person formed by or surviving any such consolidation or merger (if other than the Company) or the Person to which such sale, assignment, transfer, lease, conveyance or other disposition has been made shall expressly assume, by an indenture (or indentures, if at such time there is more than one Trustee) supplemental hereto, in form reasonably satisfactory to the Trustee, executed by the successor Person and delivered to the Trustee, the due and punctual payment of the principal of, any premium and

interest on and any Additional Amounts with respect to, all the Securities and the performance of every obligation in this Indenture and the Outstanding Securities on the part of the Company to be performed or observed and shall provide for conversion or exchange rights in accordance with the provisions of the Securities of any series that are convertible or exchangeable into Common Stock or other securities, cash or other property;

(3) either the Company or the successor Person shall have delivered to the Trustee an Officer's Certificate and an Opinion of Counsel, each stating that such consolidation, merger, sale, assignment, transfer, lease, conveyance or other disposition and, if a supplemental indenture is required in connection with such transaction, such supplemental indenture comply with this Article 8 and that all conditions precedent herein provided for relating to such transaction have been complied with; and

(4) immediately after giving effect to such transaction, no Event of Default or event which, after notice or lapse of time, or both, would become an Event of Default, shall have occurred and be continuing.

Section 8.2 Successor Person Substituted for Company

Upon any consolidation by the Company with or merger of the Company into any other Person or Persons where the Company is not the survivor or any sale, assignment, transfer, lease, conveyance or other disposition of all or substantially all of the properties and assets of the Company and the properties and assets of its Subsidiaries (taken as a whole) to any Person or Persons in accordance with Section 8.1, the successor Person formed by such consolidation or into which the Company is merged or to which such sale, assignment, transfer, lease, conveyance or other disposition is made shall succeed to, and be substituted for, and may exercise every right and power of, the Company under this Indenture with the same effect as if such successor Person had been named as the Company herein; and thereafter, except in the case of a lease, the predecessor Person shall be released from all obligations and covenants under this Indenture and the Securities.

ARTICLE 9

SUPPLEMENTAL INDENTURES

Section 9.1 Supplemental Indentures Without Consent of Holders

Without the consent of any Holders of Securities, the Company (when authorized by or pursuant to a Board Resolution) and the Trustee, at any time and from time to time, may enter into one or more indentures supplemental hereto, in form satisfactory to the Trustee, for any of the following purposes:

(1) to evidence the succession of another Person to the Company, and the assumption by any such successor of the covenants of the Company contained herein and in the Securities;

(2) to add to the covenants of the Company for the benefit of the Holders of all or any series of Securities (as shall be specified in such supplemental indenture or indentures) or to surrender any right or power herein conferred upon the Company; provided, that in respect of any such additional covenant, such supplemental indenture may provide for a particular period of grace after default (which period may be shorter or longer than that allowed in the case of other defaults) or may provide for an immediate enforcement upon such a default or may limit the remedies available to the Trustee upon an Event of Default or may limit the right of the Holders of a majority in aggregate principal amount of the Securities of such series to waive such an Event of Default;

(3) to establish the form or terms of Securities of any series as permitted by Section 2.1 and Section 3.1;

(4) to evidence and provide for the acceptance of appointment hereunder by a successor Trustee with respect to the Securities of one or more series and to add to or change any of the provisions of this Indenture as shall be necessary to provide for or facilitate the administration of the trusts hereunder by more than one Trustee, pursuant to the requirements of Section 6.10;

(5) to cure any ambiguity, to correct or supplement any provision herein which may be defective or inconsistent with any other provision herein, or to make any other provisions with respect to matters or questions arising under this Indenture; provided that no action pursuant to this clause (5) shall adversely affect the interests of the Holders of Securities of any series then Outstanding in any material respect;

(6) to add to, delete from or revise the conditions, limitations and restrictions on the authorized amount, terms or purposes of issue, authentication and delivery of Securities, as herein set forth;

(7) to add any additional Events of Default with respect to all or any series of Securities (as shall be specified in such supplemental indenture);

(8) to supplement any of the provisions of this Indenture to such extent as shall be necessary for the defeasance and discharge of any series of Securities pursuant to Article 4, provided that any such action shall not adversely affect the interests of any Holder of an Outstanding Security of such series or any other Security in any material respect;

(9) to make provisions with respect to conversion or exchange rights of Holders of Securities of any series;

(10) to add guarantees in respect of the Securities of one or more series and to provide for the terms and conditions of release thereof;

(11) to convey, transfer, assign, mortgage or pledge to the Trustee as security for the Securities of one or more series any property or assets and to provide for the terms and conditions of release thereof;

(12) to change or eliminate any of the provisions of this Indenture, provided that any such change or elimination shall become effective only when there is no Outstanding Security of any series created prior to the execution of such supplemental indenture that is entitled to the benefit of such provision;

(13) to provide for Definitive Securities in addition to or in place of Global Securities;

(14) to qualify the Indenture under the Trust Indenture Act;

(15) with respect to the Securities of a series, to conform the text of the Indenture or the Securities of such series to any provision of the description thereof in the Company's offering memorandum or prospectus relating to the initial offering of such Securities, to the extent that such provision, in the good faith judgment of the Company, was intended to be a verbatim recitation of a provision of the Indenture or such Securities; or

(16) to make any other change that does not adversely affect the rights of Holders of Outstanding Securities in any material respect.

The Trustee is hereby required to join with the Company and any guarantors in the execution of any such supplemental indenture, to make any further appropriate agreements and stipulations which may be therein contained and to accept the conveyance, transfer, assignment, mortgage or pledge of any property thereunder, but the Trustee shall not be obligated to enter into any such supplemental indenture that affects the Trustee's own rights, duties or immunities under this Indenture or otherwise.

Section 9.2 Supplemental Indentures With Consent of Holders

With the consent of the Holders of not less than a majority (or such greater amount as is provided for a particular series of Securities) in principal amount of the Outstanding Securities of each series affected by such supplemental indenture (including consents obtained in connection with a purchase of, or tender offer or exchange offer for, Securities of such series), by Act of said Holders delivered to the Company and the Trustee, the Company (when authorized by or pursuant to a Board Resolution) and the Trustee may enter into an indenture or indentures supplemental hereto for the purpose of adding any provisions to or changing in any manner or eliminating any of the provisions of this Indenture or of modifying in any manner the rights of the Holders of Securities of such series under this Indenture or of the Securities of such series; provided, however, that no such supplemental indenture, without the consent of the Holder of each Outstanding Security affected thereby, shall:

(1) change the Stated Maturity of the principal of, or any premium or installment of interest on or any Additional Amounts with respect to, any Security, or reduce the principal amount thereof or the rate (or modify the calculation of such rate in a manner that reduces such rate) of interest thereon or any Additional Amounts with respect thereto, or any premium payable upon the redemption thereof or otherwise, or change the obligation of the Company to pay Additional Amounts pursuant to Section 10.4, or reduce the amount of the principal of an Original Issue Discount Security that would be due and payable upon a declaration of acceleration of the Maturity thereof pursuant to Section 5.2 or the amount thereof provable in bankruptcy pursuant to Section 5.4, change the redemption provisions or adversely affect the right of repayment at the option of any Holder as contemplated by Article 13, or change the Place of Payment for any Security or the Currency in which the principal of, any premium or interest on, or any Additional Amounts with respect to any Security is payable, or impair the right to institute suit for the enforcement of any such payment on or after the Stated Maturity thereof (or, in the case of redemption, on or after the Redemption Date or, in the case of repayment at the option of the Holder, on or after the date for repayment);

(2) reduce the percentage in principal amount of the Outstanding Securities of any series the consent of the Holders of which are required for any such supplemental indenture, or the consent of whose Holders is required for any waiver (of compliance with certain provisions of this Indenture or certain defaults hereunder and their consequences) provided for in this Indenture, or reduce the requirements of Section 15.4 for quorum or voting;

(3) modify any of the provisions of this Section 9.2 or Section 5.13 or Section 10.5, except to increase any such percentage or to provide that certain other provisions of this Indenture cannot be modified or waived without the consent of the Holder of each Outstanding Security affected thereby; or

(4) make any change that adversely affects the right to convert or exchange any Security into or for Common Stock or other securities, cash or other property in accordance with the terms of such Security.

A supplemental indenture that changes or eliminates any covenant or other provision of this Indenture that shall have been included expressly and solely for the benefit of one or more particular series of Securities, or that modifies the rights of the Holders of Securities of such series with respect to such covenant or other provision, shall be deemed not to affect the rights under this Indenture of the Holders of Securities of any other series.

It shall not be necessary for any Act of Holders of Securities under this Section 9.2 to approve the particular form of any proposed supplemental indenture, but it shall be sufficient if such Act shall approve the substance thereof.

Upon the request of the Company, accompanied by a copy of a Board Resolution authorizing the execution of any such supplemental indenture, and upon the filing with the Trustee of evidence of the consent of Holders of Securities as aforesaid, the Trustee shall join with the Company and any guarantors in the execution of such supplemental indenture unless such supplemental indenture affects the Trustee's own rights, duties or immunities under this Indenture or otherwise, in which case the Trustee may in its discretion, but shall not be obligated to, enter into such supplemental indenture.

Section 9.3 Execution of Supplemental Indentures

As a condition to executing, or accepting the additional trusts created by, any supplemental indenture permitted by this Article 9 or the modifications thereby of the trusts created by this Indenture, the Trustee shall be entitled to receive, and shall be fully protected in relying upon, an Officer's Certificate and Opinion of Counsel stating that the execution of such supplemental indenture is authorized or permitted by this Indenture. The Trustee may, but shall not be obligated to, enter into any such supplemental indenture that affects the Trustee's own rights, duties or immunities under this Indenture or otherwise.

Section 9.4 Revocation of Consents

Notwithstanding clause (5) of Section 1.4, any Holder of a Security or future Holder of the same Security may revoke a consent as to its Security or portion of a Security. Any revocation of a consent by the Holder of a Security or any such future Holder shall be effective only if the Trustee receives the notice of revocation before the date on which the Trustee receives an Officer's Certificate from the Company certifying that the requisite number of consents have been received. If, however, a record date is fixed pursuant to Section 1.4, then notwithstanding the second preceding sentence, those Persons who were Holders at such record date (or their duly designated proxies), and only those Persons, shall be entitled to revoke any consent previously given, whether or not such Persons continue to be Holders after such record date.

Section 9.5 Effect of Supplemental Indentures

A supplemental indenture or waiver becomes effective upon the (a) receipt by the Company or the Trustee of the requisite number of consents (if required), (b) satisfaction of any conditions to effectiveness as set forth in this Indenture or any such supplemental indenture or waiver and (c) with respect to a supplemental indenture, execution of such supplemental indenture by the Company and the Trustee. After a supplemental indenture or waiver becomes effective, it shall bind every Holder, unless it makes a change described in any of clauses (1) through (4) of Section 9.2, in which case, the supplemental indenture or waiver shall bind a Holder of a Security who is affected thereby only if it has consented to such supplemental indenture or waiver and every subsequent Holder of a Security or portion of a Security that evidences the same debt as the consenting Holder's Security. Upon the effectiveness of any supplemental indenture under this Article, this Indenture shall be modified in accordance therewith, and such supplemental indenture shall form a part of this Indenture for all purposes; and, except as provided in the preceding sentence, every Holder of Securities theretofore or thereafter authenticated and delivered hereunder shall be bound thereby.

Section 9.6 Reference in Securities to Supplemental Indentures

Securities of any series authenticated and delivered after the execution of any supplemental indenture pursuant to this Article 9 may, and shall if required by the Trustee, bear a notation in form approved by the Trustee as to any matter provided for in such supplemental indenture. If the Company shall so determine, new Securities of any series so modified as to conform, in the opinion of the Trustee and the Company, to any such supplemental indenture may be prepared and executed by the Company and authenticated and delivered by the Trustee in exchange for Outstanding Securities of such series.

Section 9.7 Conformity with Trust Indenture Act

Every supplemental indenture executed pursuant to this Article 9 shall conform to the requirements of the Trust Indenture Act as then in effect.

Section 9.8 Notice of Supplemental Indenture

Promptly after the execution by the Company and the Trustee of any supplemental indenture pursuant to Section 9.2, the Company shall transmit to the Holders of Outstanding Securities of any series affected thereby a notice setting forth the substance of such supplemental indenture; provided, that any failure to provide, or any defect in any such notice, shall not impair the validity of any such supplemental indenture.

ARTICLE 10

COVENANTS

Section 10.1 Payment of Principal, any Premium, Interest and Additional Amounts

The Company covenants and agrees for the benefit of the Holders of the Securities of each series that it will duly and punctually pay the principal of, any premium and interest on and any Additional Amounts with respect to, the Securities of such series in accordance with the terms thereof and this Indenture.

Section 10.2 Maintenance of Office or Agency

The Company shall maintain in each Place of Payment for any series of Securities an Office or Agency where Securities of such series may be presented or surrendered for payment, where Securities of such series may be surrendered for registration of transfer or exchange, where Securities of such series that are convertible or exchangeable may be surrendered for conversion or exchange, and where notices and demands to or upon the Company in respect of the Securities of such series relating thereto and this Indenture may be served. The Company will give prompt written notice to the Trustee of the location, and any change in the location, of such Office or Agency. If at any time the Company shall fail to maintain any such required Office or Agency or shall fail to furnish the Trustee with the address thereof, such presentations, surrenders, notices and demands may be made or served at the Corporate Trust Office of the Trustee, and the Company hereby appoints the Trustee as its agent to receive all such presentations, surrenders, notices and demands.

The Company may also from time to time designate one or more other Offices or Agencies where the Securities of one or more series may be presented or surrendered for any or all such purposes and may from time to time rescind such designations; provided, however, that no such designation or rescission shall in any manner relieve the Company of its obligation to maintain an Office or Agency in each Place of Payment for Securities of any series for such purposes. The Company shall give prompt written notice to the Trustee of any such designation or rescission and of any change in the location of any such other Office or Agency.

Unless otherwise provided in or pursuant to this Indenture, the Company hereby designates as the Place of Payment for each series of Securities the Borough of Manhattan, The City of New York, and initially appoints the Corporate Trust Office of , located at , as the Office or Agency of the Company in the Borough of Manhattan, The City of New York for such purpose. The Company may subsequently appoint a different Office or Agency in the Borough of Manhattan, The City of New York for the Securities of any series.

Section 10.3 Money for Securities Payments to Be Held in Trust

If the Company shall at any time act as its own Paying Agent with respect to any series of Securities, it shall, on or before each due date of the principal of, any premium or interest on or Additional Amounts with respect to any of the Securities of such series, segregate and hold in trust for the benefit of the Persons entitled thereto a sum in the currency or currencies, currency unit or units or composite currency or currencies in which the Securities of such series are payable (except as otherwise specified pursuant to

Section 3.1 for the Securities of such series) sufficient to pay the principal or any premium, interest or Additional Amounts so becoming due until such sums shall be paid to such Persons or otherwise disposed of as herein provided, and shall promptly notify the Trustee of its failure so to act.

Whenever the Company shall have one or more Paying Agents for any series of Securities, it shall, on or prior to each due date of the principal of, any premium or interest on or any Additional Amounts with respect to any Securities of such series, deposit with any Paying Agent a sum (in the currency or currencies, currency unit or units or composite currency or currencies described in the preceding paragraph) sufficient to pay the principal or any premium, interest or Additional Amounts so becoming due, such sum to be held in trust for the benefit of the Persons entitled thereto, and (unless such Paying Agent is the Trustee) the Company will promptly notify the Trustee of its failure so to act.

The Company shall cause each Paying Agent for any series of Securities (other than the Trustee) to execute and deliver to the Trustee an instrument in which such Paying Agent shall agree with the Trustee, subject to the provisions of this Section 10.3, that such Paying Agent shall:

(1) hold all sums held by it for the payment of the principal of, any premium or interest on or any Additional Amounts with respect to Securities of such series in trust for the benefit of the Persons entitled thereto until such sums shall be paid to such Persons or otherwise disposed of as provided in or pursuant to this Indenture;

(2) give the Trustee notice of any default by the Company (or any other obligor upon the Securities of such series) in the making of any payment of principal, any premium or interest on or any Additional Amounts with respect to the Securities of such series; and

(3) at any time during the continuance of any such default, upon the written request of the Trustee, forthwith pay to the Trustee all sums so held in trust by such Paying Agent.

The Company may at any time, for the purpose of obtaining the satisfaction and discharge of this Indenture or for any other purpose, pay, or by Company Order direct any Paying Agent to pay, to the Trustee all sums held in trust by the Company or such Paying Agent, such sums to be held by the Trustee upon the same terms as those upon which such sums were held by the Company or such Paying Agent; and, upon such payment by any Paying Agent to the Trustee, such Paying Agent shall be released from all further liability with respect to such sums.

Except as otherwise provided herein or pursuant hereto, any money deposited with the Trustee or any Paying Agent, or then held by the Company, in trust for the payment of the principal of, any premium or interest on or any Additional Amounts with respect to any Security of any series and remaining unclaimed for two years after such principal or any such premium or interest or any such Additional Amounts shall have become due and payable shall be paid to the Company on Company Request, or (if then held by the Company) shall be discharged from such trust; and the Holder of such Security shall thereafter, as an unsecured general creditor, look only to the Company for payment thereof, and all liability of the Trustee or such Paying Agent with respect to such trust money, and all liability of the Company as trustee thereof, shall thereupon cease; provided, however, that the Trustee or such Paying Agent, before being required to make any such repayment, may at the expense of the Company either cause to be published once, in an Authorized Newspaper in each Place of Payment for such series, or may cause to be mailed once to Holders of Registered Securities of such series, notice that such money remains unclaimed and that, after a date specified therein, which shall not be less than 30 days from the date of such publication or mailing nor later than two years after such principal and any premium or interest or Additional Amounts shall have become due and payable, any unclaimed balance of such money then remaining will be repaid to the Company.

Section 10.4 Additional Amounts

If any Securities of a series provide for the payment of Additional Amounts, the Company agrees to pay to the Holder of any such Security Additional Amounts as provided in or pursuant to this Indenture or such Securities. Whenever in this Indenture there is mentioned, in any context, the payment of the principal of or any premium or interest on, or in respect of, any Security of any series, such mention shall be deemed to include mention of the payment of Additional Amounts provided by the terms of such series established hereby or pursuant hereto to the extent that, in such context, Additional Amounts are, were or would be payable in respect thereof pursuant to such terms, and express mention of the payment of Additional Amounts (if applicable) in any provision hereof shall not be construed as excluding Additional Amounts in those provisions hereof where such express mention is not made.

Except as otherwise provided in or pursuant to this Indenture or the Securities of the applicable series, if the Securities of a series provide for the payment of Additional Amounts, at least 10 days prior to the first Interest Payment Date with respect to such series of Securities (or if the Securities of such series shall not bear interest prior to Maturity, the first day on which a payment of principal is made), and at least 10 days prior to each date of payment of principal or interest if there has been any change with respect to the matters set forth in the below-mentioned Officer's Certificate, the Company shall furnish to the Trustee and the principal Paying

Agent or Paying Agents, if other than the Trustee, an Officer's Certificate instructing the Trustee and such Paying Agent or Paying Agents whether such payment of principal of and premium, if any, or interest on the Securities of such series shall be made to Holders of Securities of such series who are United States Aliens (as demonstrated by delivery of appropriate tax forms) without withholding for or on account of any tax, assessment or other governmental charge described in the Securities of such series. If any such withholding shall be required, then such Officer's Certificate shall specify by country the amount, if any, required to be withheld on such payments to such Holders of Securities, and the Company agrees to pay to the Trustee or such Paying Agent the Additional Amounts required by the terms of such Securities. The Company covenants to indemnify the Trustee and any Paying Agent for, and to hold them harmless against, any loss, liability or expense reasonably incurred without negligence or bad faith on their part arising out of or in connection with actions taken or omitted by any of them in reliance on any Officer's Certificate furnished pursuant to this Section 10.4.

Section 10.5 Waiver of Certain Covenants

The Company may omit in any particular instance to comply with any term, provision or condition specified pursuant to Section 3.1 with respect to the Securities of any series if the Company shall have obtained or filed with the Trustee, prior to the time of such failure or omission, evidence (as described in Section 1.4) of the consent of the Holders of a majority in aggregate principal amount of the Outstanding Securities of such series, by Act of such Holders, either waiving such compliance in such instance or generally waiving compliance with such term, provision or condition, but no such waiver shall extend to or affect such term, provision or condition except to the extent so expressly waived, and, until such waiver shall become effective in accordance with Section 9.5, the obligations of the Company and the duties of the Trustee in respect of any such term, provision or condition shall remain in full force and effect.

Section 10.6 Company Statement as to Compliance

(1) If any Securities are Outstanding under this Indenture, the Company shall deliver to the Trustee, within 120 days after the end of each fiscal year, a written statement (which need not be contained in or accompanied by an Officer's Certificate) signed by the principal executive officer, the principal financial officer or the principal accounting officer, stating that:

(a) in the course of the performance of his or her duties as an officer of the Company he or she would normally have knowledge of any default by the Company in the performance of the covenants contained in this Indenture, and

(b) to his or her knowledge, the Company has complied with all the conditions and covenants imposed on it under this Indenture throughout such year, or, if there has been a noncompliance in the fulfillment of any such condition or covenant, specifying each such noncompliance known to him or her and the nature and status thereof.

(2) The Trustee shall have no duty to monitor the Company's compliance with the covenants contained in this Indenture other than to receive written notices described in Section 10.6(1).

ARTICLE 11

REDEMPTION OF SECURITIES

Section 11.1 Applicability of Article

Redemption of Securities of any series at the option of the Company as permitted or required by the terms of such Securities shall be made in accordance with the terms of such Securities and (except as otherwise provided herein or pursuant hereto) this Article 11.

Section 11.2 Election to Redeem; Notice to Trustee

The election of the Company to optionally redeem any Securities shall be evidenced by or pursuant to a Board Resolution. In case of any redemption at the election of the Company of the Securities of any series, the Company shall, at least 60 days prior to the Redemption Date fixed by the Company (unless a shorter notice shall be satisfactory to the Trustee), notify the Trustee of such Redemption Date and of the principal amount of Securities of such series to be redeemed. In the case of any redemption of Securities (a) prior to the expiration of any restriction on such redemption provided in the terms of such Securities or elsewhere in this Indenture, or (b) pursuant to an election of the Company that is subject to a condition specified in the terms of such Securities or elsewhere in this Indenture, the Company shall furnish the Trustee with an Officer's Certificate evidencing compliance with such restriction or condition.

Section 11.3 Selection by Trustee of Securities to be Redeemed

If less than all of the Securities of any series with the same issue date, interest rate or formula, Stated Maturity and other terms are to be redeemed, the particular Securities to be redeemed shall be selected not more than 60 days prior to the Redemption Date by the Trustee from the Outstanding Securities of such series not previously called for redemption on a pro rata basis or by lot (whichever is consistent with the Trustee's customary practice); provided, however, that no such partial redemption shall reduce the portion of the principal amount of a Registered Security of such series not redeemed to less than the minimum denomination for a Security of such series established herein or pursuant hereto.

The Trustee shall promptly notify the Company and the Security Registrar (if other than itself) in writing of the Securities selected for redemption and, in the case of any Securities selected for partial redemption, the principal amount thereof to be redeemed.

For all purposes of this Indenture, unless the context otherwise requires, all provisions relating to the redemption of Securities shall relate, in the case of any Securities redeemed or to be redeemed only in part, to the portion of the principal of such Securities that has been or is to be redeemed.

Unless otherwise specified in or pursuant to this Indenture or the Securities of any series, if any Security selected for partial redemption is converted into or exchanged for Common Stock or other securities, cash or other property in part before termination of the conversion or exchange right with respect to the portion of the Security so selected, the converted portion of such Security shall be deemed (so far as may be) to be the portion selected for redemption. Securities that have been converted or exchanged during a selection of Securities to be redeemed shall be treated by the Trustee as Outstanding for the purpose of such selection.

Section 11.4 Notice of Redemption

Notice of redemption shall be given in the manner provided in Section 1.6, not less than 30 nor more than 60 days prior to the Redemption Date, unless a shorter period is specified in the Securities to be redeemed, to the Holders of Securities to be redeemed. Failure to give notice by mailing in the manner herein provided to the Holder of any Registered Securities designated for redemption as a whole or in part, or any defect in the notice to any such Holder, shall not affect the validity of the proceedings for the redemption of any other Securities or portion thereof.

Any notice that is mailed to the Holder of any Registered Securities in the manner herein provided shall be conclusively presumed to have been duly given, whether or not such Holder receives the notice.

All notices of redemption shall state:

- (1) the Redemption Date;
- (2) the Redemption Price or if not then ascertainable, the manner of calculation thereof;
- (3) if less than all Outstanding Securities of any series are to be redeemed, the identification (and, in the case of partial redemption, the principal amount) of the particular Security or Securities to be redeemed;
- (4) in case any Security is to be redeemed in part only, the notice which relates to such Security shall state that on and after the Redemption Date, upon surrender of such Security, the Holder of such Security will receive, without charge, a new Security or Securities of authorized denominations for the principal amount thereof remaining unredeemed;
- (5) that, on the Redemption Date, the Redemption Price shall become due and payable upon each such Security or portion thereof to be redeemed, and, if applicable, that interest thereon shall cease to accrue on and after said date, subject to such conditions as may be specified pursuant to Section 3.1 with respect to such Security;
- (6) the place or places where such Securities are to be surrendered for payment of the Redemption Price and any accrued interest and Additional Amounts pertaining thereto;
- (7) that the redemption is for a sinking fund, if such is the case;
- (8) in the case of Securities of any series that are convertible or exchangeable into Common Stock or other securities, cash or other property, the conversion or exchange price or rate, the date or dates on which the right to convert or exchange the principal of the Securities of such series to be redeemed will commence or terminate and the place or places where such Securities may be surrendered for conversion or exchange; and
- (9) the CUSIP number (or any other numbers used by a Depository to identify such Securities).

A notice of redemption published as contemplated by Section 1.6 need not identify particular Registered Securities to be redeemed.

Notice of redemption of Securities to be redeemed at the election of the Company shall be given by the Company or, upon Company Request, by the Trustee in the name and at the expense of the Company.

Section 11.5 Deposit of Redemption Price

At or prior to 10:00 a.m., New York City time, on any Redemption Date, the Company shall deposit, with respect to the Securities of any series called for redemption pursuant to Section 11.4, with the Trustee or with a Paying Agent (or, if the Company is acting as its own Paying Agent, segregate and hold in trust as provided in Section 10.3) an amount of money in the applicable Currency sufficient to pay the Redemption Price of, and (except if the Redemption Date shall be an Interest Payment Date, unless otherwise specified pursuant to Section 3.1 or in the Securities of such series) any accrued interest on and Additional Amounts with respect to such accrued interest, all such Securities or portions thereof which are to be redeemed on that date.

Section 11.6 Securities Payable on Redemption Date

Notice of redemption having been given as aforesaid and all conditions specified pursuant to Section 3.1 having been satisfied, the Securities so to be redeemed shall, on the Redemption Date, become due and payable at the Redemption Price therein specified, and from and after such date (unless the Company shall default in the payment of the Redemption Price and accrued interest) such Securities shall cease to bear interest. Upon surrender of any such Security for redemption in accordance with said notice, such Security shall be paid by the Company at the Redemption Price, together with any accrued interest and Additional Amounts to the Redemption Date; provided, however, that, except as otherwise specified in or pursuant to this Indenture or the Registered Securities of such series, installments of interest on Registered Securities whose Stated Maturity is on or prior to the Redemption Date shall be payable to the Holders of such Securities, or one or more Predecessor Securities, registered as such at the close of business on the Regular Record Dates therefor according to their terms and the provisions of Section 3.7.

Unless otherwise specified in or pursuant to this Indenture or the Securities of any series, if any Security called for redemption shall not be so paid upon surrender thereof for redemption, the principal and any premium, until paid, shall bear interest from the Redemption Date at the rate prescribed therefor in the Security.

Section 11.7 Securities Redeemed in Part

Any Registered Security to be redeemed only in part shall be surrendered at any Office or Agency for such Security (with, if the Company or the Trustee so requires, due endorsement by, or a written instrument of transfer in form satisfactory to the Company and the Trustee duly executed by, the Holder thereof or his attorney duly authorized in writing) and the Company shall execute and the Trustee shall authenticate and deliver to the Holder of such Security without service charge, a new Registered Security or Securities of the same series, containing identical terms and provisions, of any authorized denomination as requested by such Holder in aggregate principal amount equal to and in exchange for the unredeemed portion of the principal amount of the Security so surrendered. If a Global Security is so surrendered, the Company shall execute, and the Trustee shall authenticate and deliver to or on behalf of the U.S. Depositary or other Depositary for such Global Security as shall be specified in the Company Order with respect thereto to the Trustee, without service charge, a new Global Security in a denomination equal to and in exchange for the unredeemed portion of the principal of the Global Security so surrendered.

Section 11.8 Repurchases on the Open Market

The Company or any Affiliate of the Company may at any time or from time to time repurchase any of the Securities in the open market or otherwise. Such Securities may, at the option of the Company or the relevant Affiliate of the Company, be held, resold or surrendered to the Trustee for cancellation.

ARTICLE 12

SINKING FUNDS

Section 12.1 Applicability of Article

The provisions of this Article 12 shall be applicable to any sinking fund for the retirement of Securities of a series, except as otherwise permitted or required in or pursuant to this Indenture or any Security of such series issued pursuant to this Indenture.

The minimum amount of any sinking fund payment provided for by the terms of Securities of any series is herein referred to as a “mandatory sinking fund payment,” and any payment in excess of such minimum amount provided for by the terms of Securities of such series is herein referred to as an “optional sinking fund payment.” If provided for by the terms of Securities of any series, the cash amount of any sinking fund payment may be subject to reduction as provided in Section 12.2. Each sinking fund payment shall be applied to the redemption of Securities of any series as provided for by the terms of Securities of such series and this Indenture.

Section 12.2 Satisfaction of Sinking Fund Payments with Securities

The Company may, in satisfaction of all or any part of any sinking fund payment with respect to the Securities of any series to be made pursuant to the terms of such Securities (1) deliver Outstanding Securities of such series (other than any of such Securities previously called for redemption or any of such Securities in respect of which cash shall have been released to the Company) and (2) apply as a credit Securities of such series which have been redeemed either at the election of the Company pursuant to the terms of such series of Securities or through the application of permitted optional sinking fund payments pursuant to the terms of such Securities, provided that such Securities have not been previously so credited. Such Securities shall be received and credited for such purpose by the Trustee at the Redemption Price specified in such Securities for redemption through operation of the sinking fund and the amount of such sinking fund payment shall be reduced accordingly. If as a result of the delivery or credit of Securities of any series in lieu of cash payments pursuant to this Section 12.2, the principal amount of Securities of such series to be redeemed in order to satisfy the remaining sinking fund payment shall be less than \$100,000, the Trustee need not call Securities of such series for redemption, except upon Company Request, and such cash payment shall be held by the Trustee or a Paying Agent and applied to the next succeeding sinking fund payment, provided, however, that the Trustee or such Paying Agent shall at the request of the Company from time to time pay over and deliver to the Company any cash payment so being held by the Trustee or such Paying Agent upon delivery by the Company to the Trustee of Securities of that series purchased by the Company having an unpaid principal amount equal to the cash payment requested to be released to the Company.

Section 12.3 Redemption of Securities for Sinking Fund

Not less than 60 days prior to each sinking fund payment date for any series of Securities, the Company shall deliver to the Trustee an Officer’s Certificate specifying the amount of the next ensuing mandatory sinking fund payment for that series pursuant to the terms of that series, the portion thereof, if any, which is to be satisfied by payment of cash and the portion thereof, if any, which is to be satisfied by delivering and crediting of Securities of that series pursuant to Section 12.2, and the basis for such credit and the optional amount, if any, to be added in cash to the next ensuing mandatory sinking fund payment, and will also deliver to the Trustee any Securities to be so credited and not theretofore delivered. If such Officer’s Certificate shall specify an optional amount to be added in cash to the next ensuing mandatory sinking fund payment, the Company shall thereupon be obligated to pay the amount therein specified. Not less than 60 days before each such sinking fund payment date the Trustee shall select the Securities to be redeemed upon such sinking fund payment date in the manner specified in Section 11.3 and cause notice of the redemption thereof to be given in the name of and at the expense of the Company in the manner provided in Section 11.4. Such notice having been duly given, the redemption of such Securities shall be made upon the terms and in the manner stated in Section 11.6 and Section 11.7.

ARTICLE 13

REPAYMENT AT THE OPTION OF HOLDERS

Section 13.1 Applicability of Article

Securities of any series which are repayable at the option of the Holders thereof before their Stated Maturity shall be repaid in accordance with the terms of the Securities of such series. The repayment of any principal amount of Securities pursuant to such option of the Holder to require repayment of Securities before their Stated Maturity, for purposes of Section 3.9, shall not operate as a payment, redemption or satisfaction of the indebtedness represented by such Securities unless and until the Company, at its option, shall deliver or surrender the same to the Trustee with a directive that such Securities be cancelled. Notwithstanding anything to the contrary contained in this Section 13.1, in connection with any repayment of Securities, the Company may arrange for the purchase of any Securities by an agreement with one or more investment bankers or other purchasers to purchase such Securities by paying to the Holders of such Securities on or before the close of business on the repayment date an amount not less than the repayment price payable by the Company on repayment of such Securities, and the obligation of the Company to pay the repayment price of such Securities shall be satisfied and discharged to the extent such payment is so paid by such purchasers.

ARTICLE 14

SECURITIES IN FOREIGN CURRENCIES

Section 14.1 Applicability of Article

Whenever this Indenture provides for (i) any action by, or the determination of any of the rights of, Holders of Securities of any series in which not all of such Securities are denominated in the same Currency, or (ii) any distribution to Holders of Securities, in the absence of any provision to the contrary pursuant to this Indenture or the Securities of any particular series, any amount in respect of any Security denominated in a Foreign Currency shall be treated for any such action or distribution as that amount of Dollars that could be obtained for such amount on such reasonable basis of exchange and as of the record date with respect to Registered Securities of such series (if any) for such action, determination of rights or distribution (or, if there shall be no applicable record date, such other date reasonably proximate to the date of such action, determination of rights or distribution) as the Company may specify in a written notice to the Trustee or, in the absence of such written notice, as the Trustee may determine.

ARTICLE 15

MEETINGS OF HOLDERS OF SECURITIES

Section 15.1 Purposes for Which Meetings May Be Called

A meeting of Holders of Securities of any series may be called at any time and from time to time pursuant to this Article 15 to make, give or take any request, demand, authorization, direction, notice, consent, waiver or other Act provided by this Indenture to be made, given or taken by Holders of Securities of such series.

Section 15.2 Call, Notice and Place of Meetings

(1) The Trustee may at any time call a meeting of Holders of Securities of any series for any purpose specified in Section 15.1, to be held at such time and at such place in the Borough of Manhattan, The City of New York as the Trustee may select and as shall be acceptable to the Company. Notice of every meeting of Holders of Securities of any series, setting forth the time and the place of such meeting and in general terms the action proposed to be taken at such meeting, shall be given, in the manner provided in Section 1.6, not less than 21 nor more than 180 days prior to the date fixed for the meeting.

(2) In case at any time the Company (by or pursuant to a Board Resolution) or the Holders of at least 25% in principal amount of the Outstanding Securities of any series shall have requested the Trustee to call a meeting of the Holders of Securities of such series for any purpose specified in Section 15.1, by written request setting forth in reasonable detail the action proposed to be taken at the meeting, and the Trustee shall not have mailed notice of such meeting within 21 days after receipt of such request or shall not thereafter proceed to cause the meeting to be held as provided herein, then the Company or the Holders of Securities of such series in the amount above specified, as the case may be, may determine the time and the place in the Borough of Manhattan, The City of New York for such meeting and may call such meeting for such purposes by giving notice thereof as provided in clause (1) of this Section 15.4.

Section 15.3 Persons Entitled to Vote at Meetings

To be entitled to vote at any meeting of Holders of Securities of any series, a Person shall be (1) a Holder of one or more Outstanding Securities of such series, or (2) a Person appointed by an instrument in writing as proxy for a Holder or Holders of one or more Outstanding Securities of such series by such Holder or Holders. The only Persons who shall be entitled to be present or to speak at any meeting of Holders of Securities of any series shall be the Persons entitled to vote at such meeting and their counsel, any representatives of the Trustee and its counsel and any representatives of the Company and its counsel.

Section 15.4 Quorum; Action

The Persons entitled to vote a majority in principal amount of the Outstanding Securities of a series shall constitute a quorum for a meeting of Holders of Securities of such series; provided, however, that if any action is to be taken at such meeting with respect to a consent or waiver which this Indenture expressly provides may be given by the Holders of a different percentage in principal amount of the Outstanding Securities of a series, the Persons entitled to vote such percentage in principal amount of the Outstanding Securities of such series shall constitute a quorum. In the absence of a quorum within 30 minutes after the time appointed for any such meeting, the meeting shall, if convened at the request of Holders of Securities of such series, be dissolved. In any other case the meeting may be adjourned for a period of not less than 10 days as determined by the chairman of the meeting prior to the adjournment

of such meeting. In the absence of a quorum at any such adjourned meeting, such adjourned meeting may be further adjourned for a period of not less than 10 days as determined by the chairman of the meeting prior to the adjournment of such adjourned meeting. Notice of the reconvening of any adjourned meeting shall be given as provided in Section 15.2(1), except that such notice need be given only once not less than five days prior to the date on which the meeting is scheduled to be reconvened. Notice of the reconvening of an adjourned meeting shall state expressly the percentage, as provided above, of the principal amount of the Outstanding Securities of such series which shall constitute a quorum.

Except as limited by the proviso to Section 9.2, any resolution presented to a meeting or adjourned meeting duly reconvened at which a quorum is present as aforesaid may be adopted only by the affirmative vote of the Holders of a majority in principal amount of the Outstanding Securities of that series; provided, however, that, except as limited by the proviso to Section 9.2, any resolution with respect to any consent or waiver which this Indenture or any supplemental indenture expressly provides may be given by the Holders of at least 66-2/3% in principal amount of the Outstanding Securities of a series may be adopted at a meeting or an adjourned meeting duly convened and at which a quorum is present as aforesaid only by the affirmative vote of the Holders of 66-2/3% in principal amount of the Outstanding Securities of that series; and provided, further, that, except as limited by the proviso to Section 9.2, any resolution with respect to any request, demand, authorization, direction, notice, consent, waiver or other Act which this Indenture or any supplemental indenture expressly provides may be made, given or taken by the Holders of a different specified percentage, which is less than a majority, in principal amount of the Outstanding Securities of a series, may be adopted at a meeting or an adjourned meeting duly reconvened and at which a quorum is present as aforesaid by the affirmative vote of the Holders of such specified percentage in principal amount of the Outstanding Securities of such series.

Any resolution passed or decision taken at any meeting of Holders of Securities of any series duly held in accordance with this Section 15.4 shall be binding on all the Holders of Securities of such series, whether or not such Holders were present or represented at the meeting.

Section 15.5 Determination of Voting Rights; Conduct and Adjournment of Meetings

(1) Notwithstanding any other provisions of this Indenture, the Trustee may make such reasonable regulations as it may deem advisable for any meeting of Holders of Securities of such series in regard to proof of the holding of Securities of such series and of the appointment of proxies and in regard to the appointment and duties of inspectors of votes, the submission and examination of proxies, certificates and other evidence of the right to vote, and such other matters concerning the conduct of the meeting as it shall deem appropriate. Except as otherwise permitted or required by any such regulations, the holding of Securities shall be proved in the manner specified in Section 1.4 and the appointment of any proxy shall be proved in the manner specified in Section 1.4. Such regulations may provide that written instruments appointing proxies, regular on their face, may be presumed valid and genuine without the proof specified in Section 1.4 or other proof.

(2) The Trustee shall, by an instrument in writing, appoint a temporary chairman of the meeting, unless the meeting shall have been called by the Company or by Holders of Securities as provided in Section 15.2(2), in which case the Company or the Holders of Securities of the series calling the meeting, as the case may be, shall in like manner appoint a temporary chairman. A permanent chairman and a permanent secretary of the meeting shall be elected by vote of the Persons entitled to vote a majority in principal amount of the Outstanding Securities of such series represented at the meeting.

(3) At any meeting, each Holder of a Security of such series or proxy shall be entitled to one vote for each \$1,000 principal amount of Securities of such series held or represented by him; provided, however, that no vote shall be cast or counted at any meeting in respect of any Security challenged as not Outstanding and ruled by the chairman of the meeting to be not Outstanding. The chairman of the meeting shall have no right to vote, except as a Holder of a Security of such series or proxy.

(4) Any meeting of Holders of Securities of any series duly called pursuant to Section 15.2 at which a quorum is present may be adjourned from time to time by Persons entitled to vote a majority in principal amount of the Outstanding Securities of such series represented at the meeting; and the meeting may be held as so adjourned without further notice.

Section 15.6 Counting Votes and Recording Action of Meetings

The vote upon any resolution submitted to any meeting of Holders of Securities of any series shall be by written ballots on which shall be subscribed the signatures of the Holders of Securities of such series or of their representatives by proxy and the principal amounts and serial numbers of the Outstanding Securities of such series held or represented by them. The permanent chairman of the meeting shall appoint two inspectors of votes who shall count all votes cast at the meeting for or against any resolution and who shall make and file with the permanent secretary of the meeting their verified written reports in triplicate of all votes cast at the meeting. A record, at least in triplicate, of the proceedings of each meeting of Holders of Securities of any series shall be prepared by the permanent secretary of the meeting and there shall be attached to said record the original reports of the inspectors of votes on any vote by ballot taken thereat and affidavits by one or more Persons having knowledge of the facts setting forth a copy of the notice of the

meeting and showing that said notice was given as provided in Section 15.2 and, if applicable, Section 15.4. Each copy shall be signed and verified by the affidavits of the permanent chairman and secretary of the meeting and one such copy shall be delivered to the Company, and another to the Trustee to be preserved by the Trustee, the latter to have attached thereto the ballots voted at the meeting. Any record so signed and verified shall be conclusive evidence of the matters therein stated.

IN WITNESS WHEREOF, the parties hereto have caused this Indenture to be duly executed as of the day and year first above written.

CATALYST BIOSCIENCES, INC.

By: _____
Name: _____
Title: _____

_____,
as Trustee

By: _____
Name: _____
Title: _____

March 16, 2016

Catalyst Biosciences, Inc.
260 Littlefield Ave.
South San Francisco, CA 94080

Re: Shelf Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as counsel to Catalyst Biosciences, Inc., a Delaware corporation (the "Company"), in connection with the Registration Statement on Form S-3 (the "Registration Statement") to be filed by the Company under the Securities Act of 1933, as amended (the "Securities Act"). The Company has provided us with a base prospectus (the "Base Prospectus"), which forms part of the Registration Statement. The Base Prospectus provides that it will be supplemented in the future by one or more prospectus supplements (each, a "Prospectus Supplement"). The Registration Statement, including the Base Prospectus as supplemented from time to time by one or more Prospectus Supplements, will provide for the registration by the Company of:

- (i) shares of common stock, \$0.001 par value per share, of the Company (the "Common Stock");
- (ii) shares of preferred stock, \$0.001 par value per share, of the Company (the "Preferred Stock");
- (iii) debt securities, which may be senior or subordinated, and which may be issued in one or more series (the "Debt Securities"), under the form of indenture filed as Exhibit 4.6 to the Registration Statement, as such indenture may be supplemented from time to time (the "Indenture");
- (v) warrants to purchase Common Stock, Preferred Stock or Debt Securities (the "Warrants"), which may be issued under warrant agreements, to be dated on or about the date of the first issuance of the applicable Warrants thereunder, by and between a warrant agent to be selected by the Company (the "Warrant Agent") and the Company, in the forms that will be filed as exhibits to the Registration Statement, as such agreements may be supplemented from time to time (each, a "Warrant Agreement"); and
- (vi) units comprised of shares of Common Stock, shares of Preferred Stock, Debt Securities, debt obligations of third parties, including U.S. treasury securities, warrants or any combination thereof (the "Units"), which may be issued under unit agreements, to be dated on or about the date of the first issuance of the applicable Units thereunder, by and between a unit agent to be selected by the Company (the "Unit Agent") and the Company, in the forms that will be filed as exhibits to the Registration Statement, as such agreements may be supplemented from time to time (each, a "Unit Agreement").

The Common Stock, the Preferred Stock, the Debt Securities, the Warrants and the Units are collectively referred to herein as the "Shelf Securities." The Shelf Securities are being registered for offering and sale from time to time pursuant to Rule 415 under the Securities Act. The aggregate public offering price of the Shelf Securities being registered will not exceed \$50,000,000.

We also have acted as counsel to the Company in connection with the sale through JonesTrading Institutional Services LLC as the sales agent (the "Sales Agent") from time to time by the Company of shares of Common Stock (the "Sales Agreement Shares") having an aggregate offering price of up to \$6,500,000 pursuant to the Registration Statement, the Base Prospectus and the related Prospectus Supplement for the sale of the Sales Agreement Shares included in the Registration Statement (the "Sales Agreement Supplement"), and that certain Sales Agreement dated as of March 16, 2016, between the Sales Agent and the Company (the "Sales Agreement"). The Sales Agreement Shares, together with the Shelf Securities, are collectively referred to herein as the "Securities."

In connection with this opinion, we have examined such corporate records, documents, instruments, certificates of public officials and of the Company and such questions of law as we have deemed necessary for the purpose of rendering the opinions set forth herein. We also have examined the Registration Statement, the Indenture and the Sales Agreement.

In such examination, we have assumed the genuineness of all signatures and the authenticity of all items submitted to us as originals and the conformity with originals of all items submitted to us as copies. In making our examination of documents executed by parties other than the Company, we have assumed that each other party has the power and authority (or where such party is an individual, the capacity) to execute and deliver, and to perform and observe the provisions of, such documents, and the due authorization by each such party of all requisite action and the due execution and delivery of such documents by each such party, and that such documents constitute the legal, valid and binding obligations of each such party enforceable against such party in accordance with their terms.

The opinions hereinafter expressed are subject to the following qualifications and exceptions:

- (i) the effect of bankruptcy, insolvency, reorganization, arrangement, moratorium or other similar laws relating to or affecting the rights of creditors generally, including, without limitation, laws relating to fraudulent transfers or conveyances, preferences and equitable subordination;
- (ii) limitations imposed by general principles of equity upon the availability of equitable remedies or the enforcement of provisions of any Debt Securities, Common Stock, Preferred Stock, Warrants or Units, and the effect of judicial decisions which have held that certain provisions are unenforceable where their enforcement would violate the implied covenant of good faith and fair dealing, or would be commercially unreasonable, or where their breach is not material; and
- (iii) our opinion is based upon current statutes, rules, regulations, cases and official interpretive opinions, and it covers certain items that are not directly or definitively addressed by such authorities.

With respect to our opinion as to the Common Stock, we have assumed that, at the time of issuance and sale, a sufficient number of shares of Common Stock are authorized and available for issuance and that the consideration for the issuance and sale of the Common Stock (or Preferred Stock convertible into Common Stock, Debt Securities convertible into Common Stock or Warrants exercisable for Common Stock) is in an amount that is not less than the par value of the Common Stock.

With respect to our opinion as to the Preferred Stock, we have assumed that, at the time of issuance and sale, a sufficient number of shares of Preferred Stock are authorized, designated and available for issuance and that the consideration for the issuance and sale of the Preferred Stock (or Debt Securities convertible into Preferred Stock or Warrants exercisable for Preferred Stock) is in an amount that is not less than the par value of the Preferred Stock.

We have also assumed that any Warrants and Units offered under the Registration Statement, and the related Warrant Agreement and Unit Agreement, as applicable, will be duly authorized, executed and delivered in the forms that will be filed as exhibits to the Registration Statement or incorporated by reference therein.

We have also assumed that with respect to Securities being issued upon conversion of any convertible Preferred Stock, the applicable Preferred Stock will be duly authorized, validly issued, fully paid and nonassessable.

We have also assumed that (i) all Securities will be issued and sold in compliance with the Trust Indenture Act of 1939 and the securities or blue sky laws of various states and in the manner stated in the Registration Statement and the applicable prospectus supplement and (ii) the trustee under the Indenture (the "Trustee") will be qualified pursuant to the Trust Indenture Act of 1939 at the time the Securities are offered or issued (or such later time as may be permitted pursuant to the rules, regulations, interpretations or positions of the Securities and Exchange Commission) as contemplated by the Registration Statement.

Our opinion herein is expressed solely with respect to Federal Securities Laws, the Delaware General Corporation Law and, as to the Debt Securities constituting valid and legally binding obligations of the Company, solely with respect to the laws of the State of New York.

Our opinion is based on these laws as in effect on the date hereof. We express no opinion as to whether the laws of any jurisdiction are applicable to the subject matter hereof. We are not rendering any opinion as to compliance with any federal law or state law, rule or regulation relating to securities, or to the sale or issuance thereof.

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

1. With respect to the Common Stock offered under the Registration Statement, including the Sales Agreement Shares, provided that (i) the Registration Statement and any required post-effective amendment thereto have all become effective under the Securities Act and the Base Prospectus, the Sales Agreement Supplement (with respect to the Sales Agreement Shares) and any and all other Prospectus Supplement(s) required by applicable laws have been delivered and filed as required

by such laws; (ii) the issuance of the Common Stock has been duly authorized by all necessary corporate action on the part of the Company; (iii) the issuance and sale of the Common Stock do not violate any applicable law, are in conformity with the Company's then operative Amended and Restated Certificate of Incorporation, as amended (the "Certificate of Incorporation") and Bylaws (the "Bylaws"), do not result in a default under or breach of any agreement or instrument binding upon the Company and comply with any applicable requirement or restriction imposed by any court or governmental body having jurisdiction over the Company; and (iv) the certificates for the Common Stock have been duly executed by the Company, countersigned by the transfer agent therefor and duly delivered to the purchasers thereof against payment therefor, then the Common Stock, when issued and sold as contemplated in the Registration Statement, the Base Prospectus, the Sales Agreement Supplement (with respect to the Sales Agreement Shares) and any other related Prospectus Supplement(s) and in accordance with any applicable duly authorized, executed and delivered purchase, underwriting or similar agreement, will be duly authorized, validly issued, fully paid and nonassessable.

2. With respect to the Preferred Stock offered under the Registration Statement, provided that (i) the Registration Statement and any required post-effective amendment thereto have all become effective under the Securities Act and the Base Prospectus and any and all Prospectus Supplement(s) required by applicable laws have been delivered and filed as required by such laws; (ii) the terms and issuance of the Preferred Stock have been duly authorized by all necessary corporate action on the part of the Company; (iii) the terms of the shares of Preferred Stock and their issuance and sale do not violate any applicable law, are in conformity with the Certificate of Incorporation and Bylaws, do not result in a default under or breach of any agreement or instrument binding upon the Company and comply with any applicable requirement or restriction imposed by any court or governmental body having jurisdiction over the Company; and (iv) the certificates for the Preferred Stock have been duly executed by the Company, countersigned by the transfer agent therefor and duly delivered to the purchasers thereof against payment therefor, then the Preferred Stock, when issued and sold as contemplated in the Registration Statement, the Base Prospectus and the related Prospectus Supplement(s) and in accordance with any applicable duly authorized, executed and delivered purchase, underwriting or similar agreement, will be duly authorized, validly issued, fully paid and nonassessable.

3. With respect to any series of the Debt Securities issued under the Indenture and offered under the Registration Statement, provided that (i) the Registration Statement and any required post-effective amendment thereto have all become effective under the Securities Act and the Base Prospectus and any and all Prospectus Supplement(s) required by applicable laws have been delivered and filed as required by such laws; (ii) the Indenture has been duly authorized by the Company and the Trustee by all necessary corporate action; (iii) the Indenture in substantially the form that is filed as an exhibit to the Registration Statement has been duly executed and delivered by the Company and the Trustee; (iv) the issuance and terms of the Debt Securities have been duly authorized by the Company by all necessary corporate action; (v) the terms of the Debt Securities and of their issuance and sale have been duly established in conformity with the Indenture so as not to violate any applicable law or result in a default under or breach of any agreement or instrument binding upon the Company, so as to be in conformity with the Certificate of Incorporation and Bylaws, and so as to comply with any requirement, restriction, consent, approval, license or authorization imposed or granted by any court or governmental body having jurisdiction over the Company; and (vi) the Debt Securities have been duly executed and delivered by the Company and authenticated by the Trustee pursuant to the Indenture and delivered against payment therefor, then the Debt Securities, when issued and sold in accordance with the Indenture and a duly authorized, executed and delivered purchase, underwriting or similar agreement, or upon exercise of any Warrants under the Warrant Agreement, will be valid and legally binding obligations of the Company, enforceable against the Company in accordance with their terms.

4. With respect to the Warrants issued under the Warrant Agreement and offered under the Registration Statement, provided that (i) the Registration Statement and any required post-effective amendment thereto have all become effective under the Securities Act and the Base Prospectus and any and all Prospectus Supplement(s) required by applicable laws have been delivered and filed as required by such laws; (ii) the Warrant Agreement has been duly authorized by the Company and the Warrant Agent by all necessary corporate action; (iii) the Warrant Agreement has been duly executed and delivered by the Company and the Warrant Agent; (iv) the issuance and terms of the Warrants have been duly authorized by the Company by all necessary corporate action; (v) the terms of the Warrants and of their issuance and sale have been duly established in conformity with the Warrant Agreement and as described in the Registration Statement, the Base Prospectus and the related Prospectus Supplement(s), so as not to violate any applicable law or result in a default under or breach of any agreement or instrument binding upon the Company, so as to be in conformity with the Certificate of Incorporation and Bylaws, and so as to comply with any requirement, restriction, consent, approval, license or authorization imposed or granted by any court or governmental body having jurisdiction over the Company; and (vi) the Warrants have been duly executed and delivered by the Company and authenticated by the Warrant Agent pursuant to the Warrant Agreement and delivered against payment therefor, then the Warrants, when issued and sold in accordance with the Warrant Agreement and a duly authorized, executed and delivered purchase, underwriting or similar agreement, will be valid and legally binding obligations of the Company, enforceable against the Company in accordance with their terms.

5. With respect to the Units issued under the Unit Agreement and offered under the Registration Statement, provided that (i) the Registration Statement and any required post-effective amendment thereto have all become effective under the Securities Act and the Base Prospectus and any and all Prospectus Supplement(s) required by applicable laws have been delivered and filed as required by such laws; (ii) the Unit Agreement has been duly authorized by the Company and the Unit Agent by all necessary corporate action; (iii) the Unit Agreement has been duly executed and delivered by the Company and the Unit Agent; (iv) the issuance and terms of the Units have been duly authorized by the Company by all necessary corporate action; (v) the terms of the Units and of their issuance and sale have been duly established in conformity with the Unit Agreement and as described in the Registration Statement, the Base Prospectus and the related Prospectus Supplement(s), so as not to violate any applicable law or result in a default under or breach of any agreement or instrument binding upon the Company, so as to be in conformity with the Certificate of Incorporation and Bylaws, and so as to comply with any requirement or restriction imposed by any court or governmental body having jurisdiction over the Company; and (vi) the Units have been duly executed and delivered by the Company and authenticated by the Unit Agent pursuant to the Unit Agreement and delivered against payment therefor, then the Units, when issued and sold in accordance with the Unit Agreement and a duly authorized, executed and delivered purchase, underwriting or similar agreement, will be valid and legally binding obligations of the Company, enforceable against the Company in accordance with their terms.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement and to the reference to our firm under the caption "Legal Matters" in the Base Prospectus and the Sales Agreement Supplement which form parts of the Registration Statement. In giving such permission, we do not admit hereby that we come within the category of persons whose consent is required under Section 7 of the Securities Act, or the rules and regulations of promulgated thereunder. This opinion is expressed as of the date hereof, and we disclaim any undertaking to advise you of any subsequent changes of the facts stated or assumed herein or of any subsequent changes in applicable law.

Very truly yours,

/s/ Morrison & Foerster LLP

COMPUTATION OF RATIO OF EARNINGS TO FIXED CHARGES

The following table sets forth the computation of our ratio of earnings to fixed charges and our ratio of earnings to combined fixed charges and preferred dividend requirements for the periods indicated (*in thousands*):

	Year Ended December 31,				
	2015	2014	2013	2012	2011
Earnings:					
Net income (loss)	\$(14,762)	\$(6,613)	\$(9,966)	\$(19,073)	\$(5,882)
Fixed charges	1,711	341	335	323	311
Total Deficiency of Earnings	\$(13,051)	\$(6,272)	\$(9,631)	\$(18,750)	\$(5,571)
Fixed Charges:					
Interest Expense	\$ 1,478	\$ —	\$ —	\$ —	\$ —
Portion of rent expense representative of interest	233	341	335	323	311
Total Fixed Charges	\$ 1,711	\$ 341	\$ 335	\$ 323	\$ 311
Ratio of Earnings to Fixed Charges (1)	—	—	—	—	—

- (1) For purposes of computing the ratio of earnings to fixed charges, earnings consist of net income (loss) plus fixed charges. Fixed charges consist of interest expense, amortization of issuance costs and discount or premium related to indebtedness, whether expensed or capitalized, and that portion of rental payments under operating leases we believe to be representative of interest. Earnings were insufficient to cover fixed charges for each of the periods presented. The amount of coverage deficiency was \$13.1 million, \$6.3 million, \$9.6 million, \$18.8 million and \$5.6 million for the years ended December 31, 2015, 2014, 2013, 2012 and 2011, respectively.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the Registration Statement of Catalyst Biosciences, Inc. on Form S-3 and prospectus supplement to be filed on or about March 16, 2016 of our report dated March 9, 2016, on our audits of the consolidated financial statements as of December 31, 2015 and 2014, and for each of the years in the three-year period ended December 31, 2015.

We also consent to the references to our firm under the caption "Experts" in the Registration Statement on Form S-3 and prospectus supplement.

/s/ EisnerAmper LLP

Iselin, New Jersey
March 16, 2016