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

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

CORBUS PHARMACEUTICALS HOLDINGS, INC.
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

46-4348039
(I.R.S. Employer
Identification Number)

Corbus Pharmaceuticals Holdings, Inc.
100 River Ridge Drive
Norwood, MA 02062
(617) 963-0100
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Yuval Cohen
Chief Executive Officer
Corbus Pharmaceuticals Holdings, Inc.
100 River Ridge Drive
Norwood, MA 02062
(617) 963-0100
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies of all communications, including communications sent to the agent for service, to:

Michael J. Lerner, Esq.
Steven M. Skolnick, Esq.
Lowenstein Sandler LLP
1251 Avenue of the Americas
New York, New York 10020
Tel: (212) 262-6700

Approximate date of commencement of proposed sale to the public: From time to time after this Registration Statement becomes effective.

If the only securities being registered on this Form are to be 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 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, 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: Accelerated filer:

Non-accelerated filer: (Do not check if smaller reporting company) Smaller reporting company:

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered (1)	Amount to be registered(1) (2)	Proposed maximum offering price per unit(1) (2)	Proposed maximum aggregate offering price(1) (2)	Amount of registration fee(2)
Common Stock, par value \$0.0001 per share (3)				
Preferred Stock, par value \$0.0001 per share (4)				
Warrants (5)				
Debt Securities (6)				
Units (7)				
TOTAL:			\$100,000,000	\$10,070

(1) In no event will the aggregate offering price of all securities issued from time to time by the registrant under this registration statement exceed \$100,000,000 or its equivalent in any other currency, currency units, or composite currency or currencies. The securities covered by this registration statement may be sold separately, together or as units with other securities registered under this registration statement.

(2) The proposed maximum aggregate price has been estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended (the "Securities Act").

(3) Subject to note (1), this registration statement covers such an indeterminate amount of common stock (with accompanying purchase rights, if any), as may be sold, from time to time, at indeterminate prices, by the registrant and such indeterminate number of shares of common stock as may, from time to time, be issued upon conversion or exchange of other securities registered hereunder, to the extent any such securities are, by their terms, convertible or exchangeable for common stock

(4) Subject to note (1), this registration statement covers such an indeterminate number of shares of preferred stock (with accompanying purchase rights, if any) as may be sold from time to time at indeterminate prices by the registrant. Also covered is such an indeterminate amount of common stock (with accompanying purchase rights, if any,) (i) as may be issuable or deliverable upon conversion of shares of preferred stock, and (ii) as may be required for delivery upon conversion of shares of preferred stock as a result of anti-dilution provisions.

(5) Subject to note (1), this registration statement covers such an indeterminate amount and number of warrants (including subscription rights), representing rights to purchase common stock, preferred stock and debt securities registered under this registration statement as may be sold from time to time at indeterminate prices by the registrant. Also covered is such an indeterminate amount of common stock and preferred stock (in each case, with accompanying purchase rights, if any) and debt securities (i) as may be issuable or deliverable upon exercise of warrants, and (ii) as may be required for delivery upon exercise of any warrants as a result of anti-dilution provisions.

(6) Subject to note (1), this registration statement covers such an indeterminate amount of debt securities as may be sold from time to time at indeterminate prices by the registrant. If any debt securities are issued at an original issue discount, then the offering price shall be in such greater principal amount as shall result in an aggregate initial offering price not to exceed \$100,000,000. Also covered is such an indeterminate amount of common stock and preferred stock (in each case, with accompanying purchase rights, if any) (i) as may be issuable or deliverable upon the exercise or conversion of debt securities, and (ii) as may be required for delivery upon exercise or conversion of debt securities as a result of anti-dilution provisions.

(7) Each unit will represent an interest in two or more securities, which may or may not be separable from one another.

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 or until the Registration Statement shall become effective on such date as the Commission acting pursuant to said Section 8(a), may determine.

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The information in this prospectus is not complete and may be changed. A registration statement relating to these securities has been filed with the Securities and Exchange Commission. These securities may not be sold until the registration statement is effective. This prospectus is not an offer to sell these securities and does not solicit an offer to buy these securities in any state or other jurisdiction where the offer or sale is not permitted.

Subject to completion, preliminary prospectus dated November 10, 2015

Corbus Pharmaceuticals Holdings, Inc.



\$100,000,000

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

We may offer, issue and sell from time to time together or separately, in one or more offerings, any combination of (i) our common stock, (ii) our preferred stock, which we may issue in one or more series, (iii) warrants, (iv) senior or subordinated debt securities and (v) units. The debt securities may consist of debentures, notes, or other types of debt. The debt securities, preferred stock and warrants may be convertible into, or exercisable or exchangeable for, common or preferred stock or other securities of ours. The units may consist of any combination of the securities listed above.

The aggregate public offering price of the securities that we are offering will not exceed \$100,000,000. We will offer the securities in an amount and on terms that market conditions will determine at the time of the offering. Our common stock is listed on the Nasdaq Capital Market under the symbol "CRBP." The last reported sale price for our common stock on November 9, 2015 as quoted on the Nasdaq Capital Market was \$1.68 per share. You are urged to obtain current market quotations of our common stock. We have no preferred stock, warrants, debt securities or units listed on any market. Each prospectus supplement will indicate if the securities offered thereby will be listed on any securities exchange.

Investing in our securities involves risk. You should carefully consider the risks that we have described under the section captioned "[Risk Factors](#)" in this prospectus on page 3 before buying our Securities.

Should we offer any of the securities described in this prospectus, we will provide you with the specific terms of the particular securities being offered in supplements to this prospectus. You should read this prospectus and any supplement, together with additional information described under the headings "Additional Information" and "Incorporation of Certain Information by Reference," carefully before you invest. This prospectus may not be used to sell securities unless accompanied by a prospectus supplement.

We may sell these securities directly to our stockholders or to purchasers or through agents on our behalf or through underwriters or dealers as designated from time to time. If any agents or underwriters are involved in the sale of any of these securities, the applicable prospectus supplement will provide the names of the agents or underwriters and any applicable fees, commissions or discounts.

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 _____, 2015

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Corbus Pharmaceuticals Holdings, Inc. is referred to herein as “Corbus”, “the Company”, “we”, “us”, and “our”, unless the context indicates otherwise.

You may only rely on the information contained in this prospectus or that we have referred you to. We have not authorized anyone to provide you with different information. This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any securities other than the securities offered by this prospectus. This prospectus and any future prospectus supplement do not constitute an offer to sell or a solicitation of an offer to buy any securities in any circumstances in which such offer or solicitation is unlawful. Neither the delivery of this prospectus or any prospectus supplement nor any sale made hereunder shall, under any circumstances, create any implication that there has been no change in our affairs since the date of this prospectus or such prospectus supplement or that the information contained by reference to this prospectus or any prospectus supplement is correct as of any time after its date.

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission (“SEC”) using a “shelf” registration process. Under this shelf registration process, we may from time to time offer and sell, in one or more offerings, any or all of the securities described in this prospectus, separately or together, up to an aggregate initial offering price of \$100,000,000. This prospectus provides you with a general description of our securities being offered. When we issue the securities being offered by this prospectus, we will provide a prospectus supplement that will contain specific information about the terms of that offering. The prospectus supplement may also add, update or change information contained in this prospectus. You should read both this prospectus and any prospectus supplement together with additional information described under the heading “Additional Information” and “Incorporation of Certain Information by Reference.”

PROSPECTUS SUMMARY

The following summary highlights some information from this prospectus. It is not complete and does not contain all of the information that you should consider before making an investment decision. You should read this entire prospectus, including the “Risk Factors” section on page 3, the financial statements and related notes and the other more detailed information appearing elsewhere or incorporated by reference into this prospectus.

About Us

We are a clinical stage pharmaceutical company, focused on the development and commercialization of novel therapeutics to treat rare, chronic and serious inflammatory and fibrotic diseases with clear unmet medical needs. Our product Resunab™ is a novel synthetic oral endocannabinoid-mimetic drug that is intended to resolve chronic inflammation and halt fibrotic processes without causing immunosuppression. Resunab is currently being tested in three separate Phase 2 studies for the treatment of cystic fibrosis, diffuse cutaneous systemic sclerosis and skin-predominant dermatomyositis. The United States Food and Drug Administration has granted Resunab Orphan Designation as well as Fast Track Status for both cystic fibrosis and systemic sclerosis.

Since our inception, we have devoted substantially all of our efforts to business planning, research and development, recruiting management and technical staff, acquiring operating assets and raising capital. Our research and development activities have included completing pre-clinical studies, the development of manufacturing methods and manufacturing of our lead drug Resunab for clinical trials and the design of clinical protocols for clinical studies in patients.

Resunab is a synthetic, rationally-designed oral small molecule that selectively binds to CB2 receptors found on immune cells and fibroblasts. The CB2 receptor plays an endogenous role in modulating and resolving inflammation by, in effect, turning heightened inflammation “off” and restoring it to homeostasis. A number of preclinical and clinical pilot studies have shown that, through the activation of CB2, Resunab stimulates the production of anti-inflammatory mediators and causes a concomitant reduction in pro-inflammatory mediators and cytokines. Because it acts through this endogenous resolving pathway, Resunab offers a new mechanism to potentially treat a wide spectrum of chronic inflammatory diseases in which the resolution of inflammation (the “off” switch) fails to occur.

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Implications of Being an Emerging Growth Company

We are an “emerging growth company,” as defined in the Jumpstart Our Business Startups Act of 2012. We will remain an emerging growth company until the earlier of (1) January 1, 2020, (2) the last day of the first fiscal year in which our annual gross revenues exceed \$1 billion, (3) the date on which we become a “large accelerated filer” as defined in Rule 12b-2 under the Securities Exchange Act of 1934, as amended, which would occur if the market value of our common stock that is held by non-affiliates exceeds \$700 million as of the last business day of our most recently completed second fiscal quarter or (4) the date on which we have issued more than \$1 billion in non-convertible debt during the preceding three-year period.

For as long as we remain an “emerging growth company,” we may take advantage of certain exemptions from various reporting requirements that are applicable to public companies that are not “emerging growth companies” including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation and financial statements in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote to approve executive compensation and shareholder approval of any golden parachute payments not previously approved. We will take advantage of these reporting exemptions until we are no longer an “emerging growth company.”

Corporate Information

Corbus Pharmaceuticals, Inc. (formerly known as JB Therapeutics Inc.), was incorporated on April 24, 2009 under the laws of the State of Delaware. On April 11, 2014, JB Therapeutics Inc. completed a merger with Corbus Pharmaceuticals Holdings Inc. and changed its name to Corbus Pharmaceuticals, Inc. Upon the consummation of the merger, Corbus Pharmaceuticals, Inc. became a wholly owned subsidiary of Corbus Pharmaceuticals Holdings, Inc. which continues to operate the business of Corbus Pharmaceuticals, Inc. Our principal executive offices are located at 100 River Ridge Drive, Norwood, Massachusetts 02062, and our telephone number is (619) 963-0100. Our website address is www.corbuspharma.com. Our website and the information contained on, or that can be accessed through, our website will not be deemed to be incorporated by reference in, and are not considered part of, this prospectus. You should not rely on our website or any such information in making your decision whether to purchase our securities.

RISK FACTORS

An investment in our common stock is speculative and involves a high degree of risk including the risk of a loss of your entire investment. You should carefully consider the risks and uncertainties described below and any other information contained in this prospectus, or incorporated by reference into this prospectus and any applicable prospectus supplement before purchasing shares of our common stock. The risks set forth below are not the only ones facing us. Additional risks and uncertainties may exist that could also adversely affect our business, operations and prospects. If any of the following risks actually materialize, our business, financial condition, prospects and/or operations could suffer. In such event, the value of our common stock could decline, and you could lose all or a substantial portion of the money that you pay for our common stock. This prospectus is qualified in its entirety by these risk factors.

Risk Related to our Company and our Business

Risks Related to Our Financial Position and Need for Capital

We are a clinical stage pharmaceutical company with a limited operating history.

We are a clinical stage pharmaceutical company with a limited operating history. We must obtain FDA clearance of our Investigational New Drug applications, or INDs, before clinical trials can commence, and must receive regulatory approval of our New Drug Applications, or NDAs, before commercial sales of a product can commence. The likelihood of success of our business plan must be considered in light of the problems, substantial expenses, difficulties, complications and delays frequently encountered in connection with developing and expanding early-stage businesses and the regulatory and competitive environment in which we operate. Pharmaceutical product development is a highly speculative undertaking, involves a substantial degree of risk and is a capital-intensive business.

Accordingly, you should consider our prospects in light of the costs, uncertainties, delays and difficulties frequently encountered by companies in the early stages of development, especially clinical pharmaceutical companies such as ours. Potential investors should carefully consider the risks and uncertainties that a company with a limited operating history will face. In particular, potential investors should consider that we cannot assure you that we will be able to:

- receive FDA approval of INDs for commencing our clinical trials;
- successfully implement or execute our current business plan, or that our business plan is sound;
- successfully manufacture our clinical product and establish commercial drug supply;
- obtain DEA licenses necessary for the manufacturing of Resunab and for evaluating Resunab in our clinical trials;
- successfully complete clinical trials and obtain regulatory approval for the marketing of Resunab;
- secure market exclusivity and/or adequate intellectual property protection for Resunab;

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- attract and retain an experienced management and advisory team;
- secure acceptance of Resunab in the medical community and with third party payors and consumers;
- launch commercial sales of Resunab, whether alone or in collaboration with others; and
- raise sufficient funds in the capital markets to effectuate our business plan including clinical development, regulatory approval and commercialization for Resunab.

If we cannot successfully execute any one of the foregoing, our business may not succeed and your investment will be adversely affected.

We have incurred operating losses in each year since our inception and expect to continue to incur substantial losses for the foreseeable future. We may never become profitable or, if achieved, be able to sustain profitability.

We expect to incur substantial expenses without corresponding revenues unless and until we are able to obtain regulatory approval and successfully commercialize Resunab. We have been engaged in developing Resunab since 2009. To date, we have not generated any revenue from Resunab and we expect to incur significant expense to complete our clinical program for Resunab in the United States and elsewhere. We may never be able to obtain regulatory approval for the marketing of Resunab in any indication in the United States or internationally. Even if we are able to commercialize Resunab or any other product candidate, there can be no assurance that we will generate significant revenues or ever achieve profitability. Our net losses for the nine months ended September 30, 2015 and the year ended December 31, 2014 were approximately \$6,352,000 and \$2,540,000, respectively. As of September 30, 2015, we had an accumulated deficit of approximately \$10,779,000.

If we were to obtain FDA approval for Resunab, we would expect that our research and development expenses will continue to increase as we advance to clinical trials for indications for the treatment of cystic fibrosis, systemic sclerosis and dermatomyositis. We may elect to pursue FDA approval for Resunab in other indications, which will result in significant additional research and development expenses. As a result, we expect to continue to incur substantial losses for the foreseeable future, and these losses will increase. We are uncertain when or if we will be able to achieve or sustain profitability. If we achieve profitability in the future, we may not be able to sustain profitability in subsequent periods. Failure to become and remain profitable would impair our ability to sustain operations and adversely affect the price of our common stock and our ability to raise capital.

Our cash or cash equivalents will only fund our operations for a limited time and we will need to raise additional capital to support our development and commercialization efforts.

We are currently operating at a loss and expect our operating costs will increase significantly as we incur costs related to the clinical trials for Resunab. We believe we have sufficient financial resources to fund our operations into at least the fourth quarter of 2016.

We do not currently have any arrangements or credit facilities in place as a source of funds, and there can be no assurance that we will be able to raise sufficient additional capital on acceptable terms, or at all. We may seek additional capital through a combination of private and public equity offerings, debt financings and strategic

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collaborations. Debt financing, if obtained, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, and could increase our expenses and require that our assets secure such debt.

Equity financing, if obtained, could result in dilution to our then existing stockholders and/or require such stockholders to waive certain rights and preferences. If such financing is not available on satisfactory terms, or is not available at all, we may be required to delay, scale back or eliminate the development of business opportunities and our operations and financial condition may be materially adversely affected. We can provide no assurances that any additional sources of financing will be available to us on favorable terms, if at all. In addition, if we are unable to secure sufficient capital to fund our operations, we might have to enter into strategic collaborations that could require us to share commercial rights to Resunab with third parties in ways that we currently do not intend or on terms that may not be favorable to us. If we choose to pursue additional indications and/or geographies for Resunab or otherwise expand more rapidly than we presently anticipate we may also need to raise additional capital sooner than expected.

Risks Related to Product Development, Regulatory Approval, Manufacturing and Commercialization

We depend entirely on the success of Resunab, which has not yet demonstrated efficacy in Phase 2 clinical trials. If we are unable to generate revenues from Resunab, our ability to create stockholder value will be limited.

Our only product candidate currently is Resunab, which has successfully completed Phase 1 safety studies and has commenced Phase 2 clinical studies for cystic fibrosis, systemic sclerosis and dermatomyositis. We do not generate revenues from any FDA approved drug products and have no other product candidates in development. There is no guarantee that our Phase 2 clinical trials will be successful or that we will continue with clinical studies to support an approval from the FDA for any indication. We note that most drug candidates never reach the clinical development stage and even those that do reach clinical development have only a small chance of successfully completing clinical development and gaining regulatory approval. Therefore, our business currently depends entirely on the successful development, regulatory approval and commercialization of Resunab, which may never occur.

If we are not able to obtain any required regulatory approvals for Resunab, we will not be able to commercialize our only product candidate and our ability to generate revenue will be limited.

We must successfully complete clinical trials for Resunab before we can apply for marketing approval. Even if we complete our clinical trials, it does not assure FDA approval. Our Phase 2 clinical trials may be unsuccessful, which would materially harm our business. Even if these Phase 2 clinical trials are successful, we are required to conduct additional clinical trials to establish Resunab's safety and efficacy, before a New Drug Application, or NDA, can be filed with the FDA for marketing approval of Resunab.

Clinical testing is expensive, is difficult to design and implement, can take many years to complete and is uncertain as to outcome. Success in early phases of pre-clinical and clinical trials does not ensure that later clinical

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trials will be successful, and interim results of a clinical trial do not necessarily predict final results. A failure of one or more of our clinical trials can occur at any stage of testing. We may experience numerous unforeseen events during, or as a result of, the clinical trial process that could delay or prevent our ability to receive regulatory approval or commercialize Resunab. The research, testing, manufacturing, labeling, packaging, storage, approval, sale, marketing, advertising and promotion, pricing, export, import and distribution of drug products are subject to extensive regulation by the FDA and other regulatory authorities in the United States and other countries, which regulations differ from country to country. We are not permitted to market Resunab as a prescription pharmaceutical product in the United States until we receive approval of an NDA from the FDA, or in any foreign countries until we receive the requisite approval from such countries. In the United States, the FDA generally requires the completion of clinical trials of each drug to establish its safety and efficacy and extensive pharmaceutical development to ensure its quality before an NDA is approved. Regulatory authorities in other jurisdictions impose similar requirements. Of the large number of drugs in development, only a small percentage result in the submission of an NDA to the FDA and even fewer are eventually approved for commercialization. We have never submitted an NDA to the FDA or comparable applications to other regulatory authorities. If our development efforts for Resunab, including regulatory approval, are not successful for its planned indications, or if adequate demand for Resunab is not generated, our business will be harmed.

Our success depends on the receipt of regulatory approval and the issuance of such regulatory approvals is uncertain and subject to a number of risks, including the following:

- the FDA or comparable foreign regulatory authorities or institutional review boards, or IRBs, may disagree with the design or implementation of our clinical trials;
- we may not be able to provide acceptable evidence of Resunab's safety and efficacy;
- the results of our clinical trials may not be satisfactory or may not meet the level of statistical or clinical significance required by the FDA, European Medicines Agency, or EMA, or other comparable foreign regulatory authorities for marketing approval;
- the dosing of Resunab in a particular clinical trial may not be at an optimal level;
- patients in our clinical trials may suffer adverse effects for reasons that may or may not be related to Resunab;
- the data collected from clinical trials may not be sufficient to support the submission of an NDA or other submission or to obtain regulatory approval in the United States or elsewhere;
- the FDA or comparable foreign regulatory authorities may fail to approve the manufacturing processes or facilities of third- party manufacturers with which we contract for clinical and commercial supplies; and
- the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

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Failure to obtain regulatory approval for Resunab for the foregoing or any other reasons will prevent us from commercializing this product candidate as a prescription product, and our ability to generate revenue will be materially impaired. We cannot guarantee that regulators will agree with our assessment of the results of the clinical trials we intend to conduct in the future or that such trials will be successful. The FDA, EMA and other regulators have substantial discretion in the approval process and may refuse to accept any application or may decide that our data is insufficient for approval and require additional clinical trials, or pre-clinical or other studies. In addition, varying interpretations of the data obtained from pre-clinical and clinical testing could delay, limit or prevent regulatory approval of a product candidate.

We are a clinical stage company and we have not submitted an NDA or received regulatory approval to market Resunab in any jurisdiction. We have only limited experience in filing the applications necessary to gain regulatory approvals and expect to rely on consultants and third party contract research organizations, or CROs, with expertise in this area to assist us in this process. Securing FDA approval requires the submission of pre-clinical, clinical, and/or pharmacokinetic data, information about product manufacturing processes and inspection of facilities and supporting information to the FDA for each therapeutic indication to establish a product candidate's safety and efficacy for each indication. Resunab may prove to have undesirable or unintended side effects, toxicities or other characteristics that may preclude our obtaining regulatory approval or prevent or limit commercial use with respect to one or all intended indications.

The process of obtaining regulatory approvals is expensive, often takes many years, if approval is obtained at all, and can vary substantially based upon, among other things, the type, complexity and novelty of the product candidates involved, the jurisdiction in which regulatory approval is sought and the substantial discretion of the regulatory authorities. Changes in the regulatory approval policy during the development period, changes in or the enactment of additional statutes or regulations, or changes in regulatory review for a submitted product application may cause delays in the approval or rejection of an application. Regulatory approval obtained in one jurisdiction does not necessarily mean that a product candidate will receive regulatory approval in all jurisdictions in which we may seek approval, but the failure to obtain approval in one jurisdiction may negatively impact our ability to seek approval in a different jurisdiction. Failure to obtain regulatory marketing approval for Resunab in any indication will prevent us from commercializing the product candidate, and our ability to generate revenue will be materially impaired.

Resunab is our only product candidate in development. If we fail to successfully commercialize Resunab, we may need to acquire additional product candidates and our business will be adversely affected.

We have never commercialized any product candidates and do not have any other compounds in pre-clinical testing, lead optimization or lead identification stages beyond Resunab. We cannot be certain that Resunab will prove to be sufficiently effective and safe to meet applicable regulatory standards for any indication. If we fail to successfully commercialize Resunab as a treatment for cystic fibrosis, systemic sclerosis, dermatomyositis or any other indication, whether as a stand-alone therapy or in combination with other treatments, our business would be adversely affected.

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Even if we receive regulatory approval for Resunab, we still may not be able to successfully commercialize this product, and the revenue that we generate from its sales, if any, may be limited.

If approved for marketing, the commercial success of Resunab will depend upon its acceptance by the medical community, including physicians, patients and health care payors. The degree of market acceptance of Resunab will depend on a number of factors, including:

- demonstration of clinical safety and efficacy;
- relative convenience, pill burden and ease of administration;
- the prevalence and severity of any adverse effects;
- the willingness of physicians to prescribe Resunab and of the target patient population to try new therapies;
- efficacy of Resunab compared to competing products;
- the introduction of any new products that may in the future become available to treat indications for which Resunab may be approved;
- new procedures or methods of treatment that may reduce the incidences of any of the indications in which Resunab may show utility;
- pricing and cost-effectiveness;
- the inclusion or omission of Resunab in applicable treatment guidelines;
- the effectiveness of our or any future collaborators' sales and marketing strategies;
- limitations or warnings contained in FDA-approved labeling;
- our ability to obtain and maintain sufficient third-party coverage or reimbursement from government health care programs, including Medicare and Medicaid, private health insurers and other third-party payors; and
- the willingness of patients to pay out-of-pocket in the absence of third-party coverage or reimbursement.

If Resunab is approved, but does not achieve an adequate level of acceptance by physicians, health care payors and patients, we may not generate sufficient revenue and we may not be able to achieve or sustain profitability. Our efforts to educate the medical community and third-party payors on the benefits of Resunab may require significant resources and may never be successful.

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In addition, even if we obtain regulatory approvals, the timing or scope of any approvals may prohibit or reduce our ability to commercialize Resunab successfully. For example, if the approval process takes too long, we may miss market opportunities and give other companies the ability to develop competing products or establish market dominance. Any regulatory approval we ultimately obtain may be limited or subject to restrictions or post-approval commitments that render Resunab not commercially viable. For example, regulatory authorities may approve Resunab for fewer or more limited indications than we request, may not approve the price we intend to charge for Resunab, may grant approval contingent on the performance of costly post-marketing clinical trials, or may approve Resunab with a label that does not include the labeling claims necessary or desirable for the successful commercialization of that indication. Further, the FDA or comparable foreign regulatory authorities may place conditions on approvals, such as risk management plans and a Risk Evaluation and Mitigation Strategy, or REMS, to assure the safe use of the drug. If the FDA concludes a REMS is needed, the sponsor of the NDA must submit a proposed REMS; the FDA will not approve the NDA without an approved REMS, if required. A REMS could include medication guides, physician communication plans, or elements to assure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. The FDA may also require a REMS for an approved product when new safety information emerges. Any of these limitations on approval or marketing could restrict the commercial promotion, distribution, prescription or dispensing of Resunab. Moreover, product approvals may be withdrawn for non-compliance with regulatory standards or if problems occur following the initial marketing of the product. Any of the foregoing scenarios could materially harm the commercial success of Resunab.

Even if we obtain marketing approval for Resunab, we will be subject to ongoing obligations and continued regulatory review, which may result in significant additional expense. Additionally, Resunab could be subject to labeling and other restrictions and withdrawal from the market and we may be subject to penalties if we fail to comply with regulatory requirements or if we experience unanticipated problems with Resunab.

Even if we obtain United States regulatory approval of Resunab for an indication, the FDA may still impose significant restrictions on its indicated uses or marketing or the conditions of approval, or impose ongoing requirements for potentially costly and time-consuming post-approval studies, including Phase 4 clinical trials, and post-market surveillance to monitor safety and efficacy. Resunab will also be subject to ongoing regulatory requirements governing the manufacturing, labeling, packaging, storage, distribution, safety surveillance, advertising, promotion, recordkeeping and reporting of adverse events and other post-market information. These requirements include registration with the FDA, as well as continued compliance with current Good Clinical Practices regulations, or cGCPs, for any clinical trials that we conduct post-approval. In addition, manufacturers of drug products and their facilities are subject to continual review and periodic inspections by the FDA and other regulatory authorities for compliance with current Good Manufacturing Practices, or cGMP, requirements relating to quality control, quality assurance and corresponding maintenance of records and documents.

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The FDA has the authority to require a risk evaluation and mitigation strategy, or REMS, as part of an NDA or after approval, which may impose further requirements or restrictions on the distribution or use of an approved drug, such as limiting prescribing to certain physicians or medical centers that have undergone specialized training, limiting treatment to patients who meet certain safe-use criteria or requiring patient testing, monitoring and/or enrollment in a registry.

With respect to sales and marketing activities by us or any future partner, advertising and promotional materials must comply with FDA rules in addition to other applicable federal, state and local laws in the United States and similar legal requirements in other countries. In the United States, the distribution of product samples to physicians must comply with the requirements of the U.S. Prescription Drug Marketing Act. Application holders must obtain FDA approval for product and manufacturing changes, depending on the nature of the change. We may also be subject, directly or indirectly through our customers and partners, to various fraud and abuse laws, including, without limitation, the U.S. Anti-Kickback Statute, U.S. False Claims Act, and similar state laws, which impact, among other things, our proposed sales, marketing, and scientific/educational grant programs. If we participate in the U.S. Medicaid Drug Rebate Program, the Federal Supply Schedule of the U.S. Department of Veterans Affairs, or other government drug programs, we will be subject to complex laws and regulations regarding reporting and payment obligations. All of these activities are also potentially subject to U.S. federal and state consumer protection and unfair competition laws. Similar requirements exist in many of these areas in other countries.

In addition, if Resunab is approved for an indication, our product labeling, advertising and promotion would be subject to regulatory requirements and continuing regulatory review. The FDA strictly regulates the promotional claims that may be made about prescription products. In particular, a product may not be promoted for uses that are not approved by the FDA as reflected in the product's approved labeling. If we receive marketing approval for Resunab, physicians may nevertheless legally prescribe our products to their patients in a manner that is inconsistent with the approved label. If we are found to have promoted such off-label uses, we may become subject to significant liability and government fines. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses by a company, and any company that is found to have improperly promoted off-label uses may be subject to significant sanctions. The federal government has levied large civil and criminal fines against companies for alleged improper promotion and has enjoined several companies from engaging in off-label promotion. The FDA has also requested that companies enter into consent decrees of permanent injunctions under which specified promotional conduct is changed or curtailed.

If we or a regulatory agency discover previously unknown problems with a product, such as adverse events of unanticipated severity or frequency, problems with the facility where the product is manufactured, or if we or our manufacturers fail to comply with applicable regulatory requirements, we may be subject to the following administrative or judicial sanctions:

- restrictions on the marketing or manufacturing of the product, withdrawal of the product from the market, or voluntary or mandatory product recalls;
- issuance of warning letters or untitled letters;

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- clinical holds;
- injunctions or the imposition of civil or criminal penalties or monetary fines;
- suspension of any ongoing clinical trials;
- refusal to approve pending applications or supplements to approved applications filed by us, or suspension or revocation of product license approvals;
- suspension or imposition of restrictions on operations, including costly new manufacturing requirements; or
- product seizure or detention or refusal to permit the import or export of product.

The occurrence of any event or penalty described above may inhibit our ability to commercialize Resunab and generate revenue. Adverse regulatory action, whether pre-or post-approval, can also potentially lead to product liability claims and increase our product liability exposure.

We currently have no sales and marketing organization. If we are unable to secure a sales and marketing partner or establish satisfactory sales and marketing capabilities, we may not successfully commercialize Resunab.

At present, we have no sales or marketing personnel. In order to commercialize products that are approved for commercial sales, we must either collaborate with third parties that have such commercial infrastructure or develop our own sales and marketing infrastructure. If we are not successful entering into appropriate collaboration arrangements, or recruiting sales and marketing personnel or in building a sales and marketing infrastructure, we will have difficulty successfully commercializing Resunab, which would adversely affect our business, operating results and financial condition.

We may not be able to enter into collaboration agreements on terms acceptable to us or at all. In addition, even if we enter into such relationships, we may have limited or no control over the sales, marketing and distribution activities of these third parties. Our future revenues may depend heavily on the success of the efforts of these third parties. If we elect to establish a sales and marketing infrastructure we may not realize a positive return on this investment. In addition, we will have to compete with established and well-funded pharmaceutical and biotechnology companies to recruit, hire, train and retain sales and marketing personnel. Factors that may inhibit our efforts to commercialize Resunab without strategic partners or licensees include:

- our inability to recruit and retain adequate numbers of effective sales and marketing personnel;
- the inability of sales personnel to obtain access to or persuade adequate numbers of physicians to prescribe Resunab;
- the lack of complementary products to be offered by sales personnel, which may put us at a competitive disadvantage relative to companies with more extensive product lines; and
- unforeseen costs and expenses associated with creating an independent sales and marketing organization.

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We face competition from other biotechnology and pharmaceutical companies and our operating results will suffer if we fail to compete effectively.

The biotechnology and pharmaceutical industries are intensely competitive and subject to rapid and significant technological change. We have competitors in a number of jurisdictions, many of which have substantially greater name recognition, commercial infrastructures and financial, technical and personnel resources than we have. Established competitors may invest heavily to quickly discover and develop novel compounds that could make Resunab obsolete or uneconomical. Any new product that competes with an approved product may need to demonstrate compelling advantages in efficacy, cost, convenience, tolerability and safety to be commercially successful. Other competitive factors, including generic competition, could force us to lower prices or could result in reduced sales. In addition, new products developed by others could emerge as competitors to Resunab. If we are not able to compete effectively against our current and future competitors, our business will not grow and our financial condition and operations will suffer.

Our potential competitors both in the United States and Europe include companies developing and/or marketing drugs for cystic fibrosis, including Vertex, Nivalis Therapeutics, Inc. and PTC Therapeutics (NasdaqGS: PTCT), as well as companies working in the systemic sclerosis field, including Bristol-Myers Squibb and Sanofi.

Recently enacted and future legislation may increase the difficulty and cost for us to obtain marketing approval of and commercialize Resunab and affect the prices we may obtain.

In the United States and some foreign jurisdictions, there have been a number of legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay marketing approval for Resunab, restrict or regulate post-approval activities and affect our ability to profitably sell Resunab. Legislative and regulatory proposals have been made to expand post-approval requirements and restrict sales and promotional activities for pharmaceutical products. We do not know whether additional legislative changes will be enacted, or whether the FDA regulations, guidance or interpretations will be changed, or what the impact of such changes on the marketing approvals of Resunab, if any, may be. In addition, increased scrutiny by the U.S. Congress of the FDA's approval process may significantly delay or prevent marketing approval, as well as subject us to more stringent product labeling and post-marketing testing and other requirements.

In the United States, the Medicare Modernization Act, or MMA, changed the way Medicare covers and pays for pharmaceutical products. The legislation expanded Medicare coverage for drug purchases by the elderly and introduced a new reimbursement methodology based on average sales prices for drugs. In addition, this legislation authorized Medicare Part D prescription drug plans to use formularies where they can limit the number of drugs that will be covered in any therapeutic class. As a result of this legislation and the expansion of federal coverage of drug products, we expect that there will be additional pressure to contain and reduce costs. These cost

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reduction initiatives and other provisions of this legislation could decrease the coverage and price that we receive for Resunab and could seriously harm our business. While the MMA applies only to drug benefits for Medicare beneficiaries, private payors often follow Medicare coverage policy and payment limitations in setting their own reimbursement rates, and any reduction in reimbursement that results from the MMA may result in a similar reduction in payments from private payors.

In March 2010, President Obama signed into law the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act of 2010 or, collectively, the Health Care Reform Law, a sweeping law intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, enhance remedies against fraud and abuse, add new transparency requirements for healthcare and health insurance industries, impose new taxes and fees on the health industry and impose additional health policy reforms. Effective October 1, 2010, the Health Care Reform Law revised the definition of “average manufacturer price” for reporting purposes, which could increase the amount of Medicaid drug rebates to states. Further, the new law imposed a significant annual fee on companies that manufacture or import branded prescription drug products. Substantial new provisions affecting compliance have also been enacted, which may require us to modify our business practices with healthcare practitioners, and incur substantial costs to ensure compliance.

Despite initiatives to invalidate the Health Care Reform Law, at this time it appears the implementation of the Health Care Reform Law will continue. We will not know the full effects of the Health Care Reform Law until applicable federal and state agencies issue regulations or guidance under the new law. Although it is too early to determine the effect of the Health Care Reform Law, the new law appears likely to continue the pressure on pharmaceutical pricing, especially under the Medicare program, and may also increase our regulatory burdens and operating costs.

In addition, other legislative changes have been proposed and adopted in the United States since the Health Care Reform Law was enacted. On August 2, 2011, the Budget Control Act of 2011 among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least \$1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation’s automatic reduction to several government programs. This includes aggregate reductions to Medicare payments to providers of up to 2% per fiscal year, starting in 2013. On January 2, 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, or the ATRA, which delayed for another two months the budget cuts mandated by these sequestration provisions of the Budget Control Act of 2011. The ATRA, among other things, also reduced Medicare payments to several providers, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. We expect that additional federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, and in turn could significantly reduce the projected value of certain development projects and reduce our profitability.

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Our future growth depends, in part, on our ability to penetrate foreign markets, where we would be subject to additional regulatory burdens and other risks and uncertainties.

Our future profitability will depend, in part, on our ability to commercialize Resunab in foreign markets for which we intend to rely on collaborations with third parties. If we commercialize Resunab in foreign markets, we would be subject to additional risks and uncertainties, including:

- our customers' ability to obtain reimbursement for Resunab in foreign markets;
- our inability to directly control commercial activities because we are relying on third parties;
- the burden of complying with complex and changing foreign regulatory, tax, accounting and legal requirements;
- different medical practices and customs in foreign countries affecting acceptance in the marketplace;
- import or export licensing requirements;
- longer accounts receivable collection times;
- longer lead times for shipping;
- language barriers for technical training;
- reduced protection of intellectual property rights in some foreign countries;
- foreign currency exchange rate fluctuations; and
- the interpretation of contractual provisions governed by foreign laws in the event of a contract dispute.

Foreign sales of Resunab could also be adversely affected by the imposition of governmental controls, political and economic instability, trade restrictions and changes in tariffs, any of which may adversely affect our results of operations.

If we market Resunab in a manner that violates healthcare fraud and abuse laws, or if we violate government price reporting laws, we may be subject to civil or criminal penalties.

The FDA enforces laws and regulations which require that the promotion of pharmaceutical products be consistent with the approved prescribing information. While physicians may prescribe an approved product for a so-called "off label" use, it is unlawful for a pharmaceutical company to promote its products in a manner that is inconsistent with its approved label and any company which engages in such conduct may be subject to significant liability. Similarly, industry codes in the European Union and other foreign jurisdictions prohibit companies from engaging in off-label promotion and regulatory agencies in various countries enforce violations of the code with civil penalties. While we intend to ensure that our promotional materials are consistent with our label, regulatory

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agencies may disagree with our assessment and may issue untitled letters, warning letters or may institute other civil or criminal enforcement proceedings. In addition to FDA restrictions on marketing of pharmaceutical products, several other types of state and federal healthcare fraud and abuse laws have been applied in recent years to restrict certain marketing practices in the pharmaceutical industry. These laws include the U.S. Anti-Kickback Statute, U.S. False Claims Act and similar state laws. Because of the breadth of these laws and the narrowness of the safe harbors, it is possible that some of our business activities could be subject to challenge under one or more of these laws.

The U.S. Anti-Kickback Statute prohibits, among other things, knowingly and willfully offering, paying, soliciting or receiving remuneration to induce, or in return for, purchasing, leasing, ordering or arranging for the purchase, lease or order of any healthcare item or service reimbursable under Medicare, Medicaid or other federally financed healthcare programs. This statute has been interpreted broadly to apply to arrangements between pharmaceutical manufacturers on the one hand and prescribers, purchasers and formulary managers on the other. Although there are several statutory exemptions and regulatory safe harbors protecting certain common activities from prosecution, the exemptions and safe harbors are drawn narrowly, and practices that involve remuneration intended to induce prescribing, purchasing or recommending may be subject to scrutiny if they do not qualify for an exemption or safe harbor. Our practices may not, in all cases, meet all of the criteria for safe harbor protection from anti-kickback liability. Moreover, recent health care reform legislation has strengthened these laws. For example, the Health Care Reform Law, among other things, amends the intent requirement of the U.S. Anti-Kickback Statute and criminal health care fraud statutes; a person or entity no longer needs to have actual knowledge of this statute or specific intent to violate it. In addition, the Health Care Reform Law provides that the government may assert that a claim including items or services resulting from a violation of the U.S. Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the U.S. False Claims Act. Federal false claims laws prohibit any person from knowingly presenting, or causing to be presented, a false claim for payment to the federal government or knowingly making, or causing to be made, a false statement to get a false claim paid.

Over the past few years, pharmaceutical and other healthcare companies have been prosecuted under these laws for a variety of alleged promotional and marketing activities, such as: allegedly providing free trips, free goods, sham consulting fees and grants and other monetary benefits to prescribers; reporting to pricing services inflated average wholesale prices that were then used by federal programs to set reimbursement rates; engaging in off-label promotion that caused claims to be submitted to Medicare or Medicaid for non-covered, off-label uses; and submitting inflated best price information to the Medicaid Rebate Program to reduce liability for Medicaid rebates. Most states also have statutes or regulations similar to the U.S. Anti-Kickback Statute and the U.S. False Claims Act, which apply to items and services reimbursed under Medicaid and other state programs, or, in several states, apply regardless of the payor. Sanctions under these federal and state laws may include substantial civil monetary penalties, exclusion of a manufacturer's products from reimbursement under government programs, substantial criminal fines and imprisonment.

We are, and will be, completely dependent on third parties to manufacture Resunab, and our commercialization of Resunab could be halted, delayed or made less profitable if those third parties fail to obtain manufacturing approval from the FDA or comparable foreign regulatory authorities, fail to provide us with sufficient quantities of Resunab or fail to do so at acceptable quality levels or prices.

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We do not currently have, nor do we plan to acquire, the capability or infrastructure to manufacture the active pharmaceutical ingredient, or API, in Resunab for use in our clinical trials or for commercial product, if any. In addition, we do not have the capability to encapsulate Resunab as a finished drug product for commercial distribution. As a result, we will be obligated to rely on contract manufacturers, if and when Resunab is approved for commercialization. We have not entered into an agreement with any contract manufacturers for commercial supply and may not be able to engage a contract manufacturer for commercial supply of Resunab on favorable terms to us, or at all.

The facilities used by our contract manufacturers to manufacture Resunab must be approved by the FDA pursuant to inspections that will be conducted after we submit our NDA to the FDA. We do not control the manufacturing process of, and are completely dependent on, our contract manufacturing partners for compliance with cGMPs for manufacture of both active drug substances and finished drug products. These cGMP regulations cover all aspects of the manufacturing, testing, quality control and record keeping relating to Resunab. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or others, they will not be able to secure and/or maintain regulatory approval for their manufacturing facilities. If the FDA or a comparable foreign regulatory authority does not approve these facilities for the manufacture of Resunab or if it withdraws any such approval in the future, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain regulatory approval for or market Resunab, if approved.

Our contract manufacturers will be subject to ongoing periodic unannounced inspections by the FDA and corresponding state and foreign agencies for compliance with cGMPs and similar regulatory requirements. We will not have control over our contract manufacturers' compliance with these regulations and standards. Failure by any of our contract manufacturers to comply with applicable regulations could result in sanctions being imposed on us, including fines, injunctions, civil penalties, failure to grant approval to market Resunab, delays, suspensions or withdrawals of approvals, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect our business. In addition, we will not have control over the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel. Failure by our contract manufacturers to comply with or maintain any of these standards could adversely affect our ability to develop, obtain regulatory approval for or market Resunab.

If for any reason, these third parties are unable or unwilling to perform, we may not be able to terminate our agreements with them, and we may not be able to locate alternative manufacturers or formulators or enter into favorable agreements with them and we cannot be certain that any such third parties will have the manufacturing capacity to meet future requirements. If these manufacturers or any alternate manufacturer of finished drug product experiences any significant difficulties in its respective manufacturing processes for our API or finished Resunab product or should cease doing business with us, we could experience significant interruptions in the supply of Resunab or may not be able to create a supply of Resunab at all. Were we to encounter manufacturing issues, our

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ability to produce a sufficient supply of Resunab might be negatively affected. Our inability to coordinate the efforts of our third party manufacturing partners, or the lack of capacity available at our third party manufacturing partners, could impair our ability to supply Resunab at required levels. Because of the significant regulatory requirements that we would need to satisfy in order to qualify a new bulk or finished product manufacturer, if we face these or other difficulties with our current manufacturing partners, we could experience significant interruptions in the supply of Resunab if we decided to transfer the manufacture of Resunab to one or more alternative manufacturers in an effort to deal with the difficulties.

Any manufacturing problem or the loss of a contract manufacturer could be disruptive to our operations and result in lost sales. Additionally, we rely on third parties to supply the raw materials needed to manufacture our potential products. Any reliance on suppliers may involve several risks, including a potential inability to obtain critical materials and reduced control over production costs, delivery schedules, reliability and quality. Any unanticipated disruption to a future contract manufacturer caused by problems at suppliers could delay shipment of Resunab, increase our cost of goods sold and result in lost sales.

We cannot guarantee that our manufacturing and supply partners will be able to reduce the costs of commercial scale manufacturing of Resunab over time. If the commercial-scale manufacturing costs of Resunab are higher than expected, these costs may significantly impact our operating results. In order to reduce costs, we may need to develop and implement process improvements. However, in order to do so, we will need, from time to time, to notify or make submissions with regulatory authorities, and the improvements may be subject to approval by such regulatory authorities. We cannot be sure that we will receive these necessary approvals or that these approvals will be granted in a timely fashion. We also cannot guarantee that we will be able to enhance and optimize output in our commercial manufacturing process. If we cannot enhance and optimize output, we may not be able to reduce our costs over time.

Our product candidate aljuemic acid, Resunab, is currently classified as a Schedule I controlled substance subject to U.S. controlled substance laws and regulations, including regulations of the Drug Enforcement Agency and the U.S. Food and Drug Administration. Failure to obtain the necessary licenses and registrations and failure to comply with these laws could result in the delay in the manufacturing and distribution of Resunab and could delay the completion of clinical studies. Such delays and the cost of compliance with these laws and regulations, could adversely affect our business operations and our financial condition.

In the United States, our product candidate, Resunab, is currently classified as Schedule I controlled substance as defined in the Controller Substance Act (“CSA”). This designation is based on Resunab’s chemical structure pharmacology (namely, it being a synthetic endocannabinoid mimetic that binds to the CB2 receptor). Even though Resunab mechanism of action is to modulate the immune system and results to date from clinical studies have demonstrated that drug has no psychotropic effects (which we believe is unlike other members of its chemical class), the DEA classifies Resunab as a Schedule I substance.

Schedule I controlled substances are pharmaceutical products subject to specific regulation under the CSA, that establishes, among other things, certain registration, manufacturing quotas, security, recordkeeping, reporting,

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import, export and other requirements administered by the DEA. All parties responsible for the manufacturing, distribution and testing the drug in clinical studies must apply for and obtain a license from the DEA before they are permitted to perform these activities with Resunab. Furthermore, these parties must have the security, control, recordkeeping, reporting and inventory mechanisms required by the DEA to prevent drug loss and diversion. All licensed facilities are required to renew their registrations annually if they intend to continue to work with our drug. The DEA conducts periodic inspections of certain registered establishments that handle controlled substances. We have been working with our manufacturers, distributors, exporters and clinical sites to obtain the necessary licenses to work with Resunab. The parties responsible for the manufacturing, distribution and export of Resunab have already applied for and have been granted DEA licenses and a number of institutions responsible for conducting our Phase 2 clinical studies have also been granted DEA licenses. However the failure to maintain the necessary registrations and the delay or failure of additional clinical sites to obtain DEA registrations, could delay the manufacturing, distribution and export of Resunab and could delay the completion of the Phase 2 clinical studies. Furthermore, failure to maintain compliance with the CSA, particularly non-compliance resulting in loss or diversion, could result in regulatory action that could have a material adverse effect on our business, financial condition and results of operations. The DEA may seek civil penalties, refuse to renew necessary registrations, or initiate proceedings to restrict, suspend or revoke those registrations. In certain circumstances, violations could lead to criminal proceedings. In addition, if the FDA, DEA, or any foreign regulatory authority determines that Resunab may have potential for abuse, it may require us to generate more clinical or other data than we currently anticipate to establish whether or to what extent the substance has an abuse potential, which could increase the cost and/or delay the launch of Resunab.

Individual states have also established controlled substance laws and regulations. Though state-controlled substances laws often mirror federal law, because the states are separate jurisdictions, they may separately schedule drugs, as well. While some states automatically schedule a drug based on federal action, other states schedule drugs through rulemaking or a legislative action. The requirement for state registrations could also result in delay of the manufacturing, distribution of Resunab or in the completion of the Phase 2 clinical studies. We and our manufacturing vendors and clinical sites must also obtain separate state registrations, permits or licenses in order to be able to obtain, handle, and distribute controlled substances for clinical trials or commercial sale, and failure to meet applicable regulatory requirements could lead to enforcement and sanctions by the states in addition to those from the DEA or otherwise arising under federal law.

The manufacturing and distribution of Resunab is subject to the DEA's annual manufacturing and procurement quota requirements. The annual quota allocated to us or our contract manufacturers for the controlled substances in Resunab may not be sufficient to complete clinical trials. Consequently, any delay or refusal by the DEA in establishing our, or our contract manufacturers', procurement and/or production quota for controlled substances could delay or stop our clinical trials or product launches, which could have a material adverse effect on our business, financial position and operations.

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Delays in shipping Resunab could have a material adverse effect on our business, results of operations and financial condition.

The import and export of Resunab requires import and export licenses. However, because Resunab is currently a Schedule I controlled substance in the United States, in addition to the FDA and U.S. Customs and Border Protection, its import and export is also regulated by the DEA. We may not be granted, or if granted, maintain, such licenses for import or export from the authorities these regulatory agencies. Even if we obtain the relevant licenses, shipments of Resunab may be held up in transit by any of these authorities, which could cause significant delays and may lead to product batches which no longer meet specifications for use in clinical trials or commercial distribution. Such events could result in delayed development timelines, increased expenses and partial or total loss of revenue from Resunab.

We expect that we will rely on third parties to conduct clinical trials for Resunab. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, we may not be able to obtain regulatory approval for or commercialize Resunab and our business would be substantially harmed.

We expect to enter into agreements with third-party CROs to conduct and manage our clinical programs including contracting with clinical sites to perform our clinical studies. We plan to rely heavily on these parties for execution of clinical studies for Resunab and will control only certain aspects of their activities. Nevertheless, we will be responsible for ensuring that each of our studies is conducted in accordance with the applicable protocol, legal, regulatory and scientific standards, and our reliance on CROs and clinical sites will not relieve us of our regulatory responsibilities. We and our CROs will be required to comply with cGCPs, which are regulations and guidelines enforced by the FDA, the Competent Authorities of the Member States of the European Economic Area and comparable foreign regulatory authorities for any products in clinical development. The FDA enforces these cGCP regulations through periodic inspections of trial sponsors, principal investigators and trial sites. If we or our CROs fail to comply with applicable cGCPs, the clinical data generated in our clinical trials may be deemed unreliable and the FDA or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. We cannot assure you that, upon inspection, the FDA will determine that any of our clinical trials comply with cGCPs. In addition, our clinical trials must be conducted with products produced under cGMP regulations and will require a large number of test subjects. Our failure or the failure of our CROs or clinical sites to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process and could also subject us to enforcement action up to and including civil and criminal penalties.

Although we intend to design the clinical trials for Resunab in consultation with CROs, we expect that the CROs will manage all of the clinical trials conducted at contracted clinical sites. As a result, many important aspects of our drug development programs would be outside of our direct control. In addition, the CROs and clinical sites may not perform all of their obligations under arrangements with us or in compliance with regulatory requirements. If the CROs or clinical sites do not perform clinical trials in a satisfactory manner, breach their obligations to us or fail to comply with regulatory requirements, the development and commercialization of Resunab for the subject

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indication may be delayed or our development program materially and irreversibly harmed. We cannot control the amount and timing of resources these CROs and clinical sites will devote to our program or Resunab. If we are unable to rely on clinical data collected by our CROs, we could be required to repeat, extend the duration of, or increase the size of our clinical trials, which could significantly delay commercialization and require significantly greater expenditures.

If any of our relationships with these third-party CROs or clinical sites terminate, we may not be able to enter into arrangements with alternative CROs or clinical sites. If CROs do not successfully carry out their contractual duties or obligations or meet expected deadlines, if they need to be replaced or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols, regulatory requirements or for other reasons, any such clinical trials may be extended, delayed or terminated, and we may not be able to obtain regulatory approval for or successfully commercialize Resunab. As a result, our financial results and the commercial prospects for Resunab would be harmed, our costs could increase and our ability to generate revenue could be delayed.

Any termination or suspension of or delays in the commencement or completion of any necessary studies of Resunab for any indications could result in increased costs to us, delay or limit our ability to generate revenue and adversely affect our commercial prospects.

The commencement and completion of clinical studies can be delayed for a number of reasons, including delays related to:

- the FDA failing to grant permission to proceed and placing the clinical study on hold;
- subjects failing to enroll or remain in our trials at the rate we expect;
- a facility manufacturing Resunab being ordered by the FDA or other government or regulatory authorities to temporarily or permanently shut down due to violations of cGMP requirements or other applicable requirements, or cross-contaminations of product in the manufacturing process;
- any changes to our manufacturing process that may be necessary or desired;
- subjects choosing an alternative treatment for the indications for which we are developing Resunab, or participating in competing clinical studies;
- subjects experiencing severe or unexpected drug-related adverse effects;
- reports of similar technologies and products raising safety and/or efficacy concerns;
- third-party clinical investigators losing their license or permits necessary to perform our clinical trials, not performing our clinical trials on our anticipated schedule or employing methods consistent with the clinical trial protocol, cGCP requirements, or other third parties not performing data collection and analysis in a timely or accurate manner;

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- inspections of clinical study sites by the FDA or IRBs finding regulatory violations that require us to undertake corrective action, result in suspension or termination of one or more sites or the imposition of a clinical hold on the entire study, or that prohibit us from using some or all of the data in support of our marketing applications;
- third-party contractors becoming debarred or suspended or otherwise penalized by the FDA or other government or regulatory authorities for violations of regulatory requirements, in which case we may need to find a substitute contractor, and we may not be able to use some or any of the data produced by such contractors in support of our marketing applications;
- one or more IRBs refusing to approve, suspending or terminating the study at an investigational site precluding enrollment of additional subjects, or withdrawing its approval of the trial; reaching agreement on acceptable terms with prospective CROs and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- deviations of the clinical sites from trial protocols or dropping out of a trial;
- adding new clinical trial sites;
- the inability of the CRO to execute any clinical trials for any reason; and
- government or regulatory delays or “clinical holds” requiring suspension or termination of a trial.

Product development costs for Resunab will increase if we have delays in testing or approval or if we need to perform more or larger clinical studies than planned. Additionally, changes in regulatory requirements and policies may occur and we may need to amend study protocols to reflect these changes. Amendments may require us to resubmit our study protocols to the FDA and IRBs for reexamination, which may impact the costs, timing or successful completion of that study. If we experience delays in completion of, or if we, the FDA or other regulatory authorities, the IRB, or other reviewing entities, or any of our clinical study sites suspend or terminate any of our clinical studies of Resunab, its commercial prospects may be materially harmed and our ability to generate product revenues will be delayed. Any delays in completing our clinical trials will increase our costs, slow down our development and approval process and jeopardize our ability to commence product sales and generate revenues. Any of these occurrences may harm our business, financial condition and prospects significantly. In addition, many of the factors that cause, or lead to, termination or suspension of, or a delay in the commencement or completion of, clinical studies may also ultimately lead to the denial of regulatory approval of Resunab. In addition, if one or more clinical studies are delayed, our competitors may be able to bring products to market before we do, and the commercial viability of Resunab could be significantly reduced.

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Clinical drug development involves a lengthy and expensive process with an uncertain outcome, and results of earlier studies and trials may not be predictive of future trial results.

Clinical testing is expensive and can take many years to complete, and its outcome is inherently uncertain. Failure can occur at any time during the clinical trial process. The results of pre-clinical studies and early clinical trials may not be predictive of the results of later-stage clinical trials. We cannot assure you that the FDA will view the results as we do or that any future trials of Resunab will achieve positive results. Product candidates in later stages of clinical trials may fail to show the desired safety and efficacy traits despite having progressed through pre-clinical studies and initial clinical trials. A number of companies in the pharmaceutical industry have suffered significant setbacks in advanced clinical trials due to lack of efficacy or adverse safety profiles, notwithstanding promising results in earlier trials. Any future clinical trial results for Resunab may not be successful.

In addition, a number of factors could contribute to a lack of favorable safety and efficacy results for Resunab. For example, such trials could result in increased variability due to varying site characteristics, such as local standards of care, differences in evaluation period and surgical technique, and due to varying patient characteristics including demographic factors and health status.

We have been granted orphan drug designation for Resunab for the treatment of cystic fibrosis and systemic sclerosis. We also intend to seek orphan drug status for Resunab for the treatment of dermatomyositis. Upon receipt of regulatory approval, orphan drug status will provide us with seven years of market exclusivity in the United States under the Orphan Drug Act. However, there is no guarantee that the FDA will grant orphan drug designation for Resunab for dermatomyositis or any other indication, which would make us ineligible for the additional exclusivity and other benefits of orphan drug designation. Moreover, there can be no assurance that another company also holding orphan drug designation for the same indication or which may receive orphan drug designation in the future will not receive approval prior to us, in which our competitor would have the benefit of the seven year market exclusivity, and we would be unable to commercialize our product for the same indication until the expiration of the seven-year period. Even if we are the first to obtain approval for the orphan drug indication, there are circumstances under which a competing product may be approved for the same indication during our seven-year period of exclusivity.

Under the Orphan Drug Act, the FDA may grant orphan drug designation to a drug intended to treat a rare disease or condition, which is generally a disease or condition that affects fewer than 200,000 individuals in the United States and for which there is no reasonable expectation that the cost of developing and making a drug available in the United States for this type of disease or condition will be recovered from sales of the product. Orphan drug designation must be requested before submitting an NDA. After the FDA grants orphan drug designation, the identity of the therapeutic agent and its potential orphan use are disclosed publicly by the FDA. Orphan product designation does not convey any advantage in or shorten the duration of regulatory review and approval process. In addition to the potential period of exclusivity, orphan designation makes a company eligible for grant funding of up to \$400,000 per year for four years to defray costs of clinical trial expenses, tax credits for clinical research expenses and potential exemption from the FDA application user fee.

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If a product that has orphan designation subsequently receives the first FDA approval for the disease or condition for which it has such designation, the product is entitled to orphan drug exclusivity, which means the FDA may not approve any other applications to market the same drug for the same indication for seven years, except in limited circumstances, such as (i) the drug's orphan designation is revoked; (ii) its marketing approval is withdrawn; (iii) the orphan exclusivity holder consents to the approval of another applicant's product; (iv) the orphan exclusivity holder is unable to assure the availability of a sufficient quantity of drug; or (v) a showing of clinical superiority to the product with orphan exclusivity by a competitor product. If a drug designated as an orphan product receives marketing approval for an indication broader than what is designated, it may not be entitled to orphan drug exclusivity. There can be no assurance that we will receive orphan drug designation for Resunab in the indications of cystic fibrosis, systemic sclerosis, or other inflammatory diseases, if we elect to seek such applications.

Third-party coverage and reimbursement and health care cost containment initiatives and treatment guidelines may constrain our future revenues.

Our ability to successfully market Resunab will depend in part on the level of reimbursement that government health administration authorities, private health coverage insurers and other organizations provide for the cost of our products and related treatments. Countries in which Resunab is expected to be sold through reimbursement schemes under national health insurance programs frequently require that manufacturers and sellers of pharmaceutical products obtain governmental approval of initial prices and any subsequent price increases. In certain countries, including the United States, government-funded and private medical care plans can exert significant indirect pressure on prices. We may not be able to sell Resunab profitably if adequate prices are not approved or coverage and reimbursement is unavailable or limited in scope. Increasingly, third-party payors attempt to contain health care costs in ways that are likely to impact our development of products including:

- failing to approve or challenging the prices charged for health care products;
- introducing reimportation schemes from lower priced jurisdictions;
- limiting both coverage and the amount of reimbursement for new therapeutic products;
- denying or limiting coverage for products that are approved by the regulatory agencies but are considered to be experimental or investigational by third-party payors; and
- refusing to provide coverage when an approved product is used in a way that has not received regulatory marketing approval.

Risks Relating to Our Intellectual Property Rights

It is difficult and costly to protect our intellectual property rights, and we cannot ensure the protection of these rights.

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Our commercial success will depend, in part, on obtaining and maintaining patent protection for our technologies, products and processes, successfully defending these patents against third-party challenges and successfully enforcing these patents against third party competitors. The patent positions of pharmaceutical companies can be highly uncertain and involve complex legal, scientific and factual questions for which important legal principles remain unresolved. Changes in either the patent laws or in interpretations of patent laws may diminish the value of our intellectual property. Accordingly, we cannot predict the breadth of claims that may be allowable or enforceable in our patents (including patents owned by us). We currently have one issued patent and the three pending patent applications for Resunab may never be approved by United States or foreign patent offices and the existing patent and patent applications relating to Resunab and related technologies may be challenged, invalidated or circumvented by third parties and might not protect us against competitors with similar products or technologies.

The degree of future protection for our proprietary rights is uncertain, because legal means afford only limited protection and may not adequately protect our rights, permit us to gain or keep our competitive advantage, or provide us with any competitive advantage at all. For example, others have filed, and in the future are likely to file, patent applications covering products and technologies that are similar, identical or competitive to Resunab, or important to our business. We cannot be certain that any patent application owned by a third party will not have priority over patent applications filed by us, or that we will not be involved in interference, opposition or invalidity proceedings before United States or foreign patent offices.

We also rely on trade secrets to protect technology, especially in cases when we believe patent protection is not appropriate or obtainable. However, trade secrets are difficult to protect. While we require employees, academic collaborators, consultants and other contractors to enter into confidentiality agreements, we may not be able to adequately protect our trade secrets or other proprietary or licensed information. Typically, research collaborators and scientific advisors have rights to publish data and information in which we may have rights. If we cannot maintain the confidentiality of our proprietary technology and other confidential information, our ability to receive patent protection and our ability to protect valuable information owned by us may be imperiled. Enforcing a claim that a third-party entity illegally obtained and is using any of our trade secrets is expensive and time consuming, and the outcome is unpredictable. In addition, courts are sometimes less willing to protect trade secrets than patents. Moreover, our competitors may independently develop equivalent knowledge, methods and know-how.

If we fail to obtain or maintain patent protection or trade secret protection for Resunab or our technologies, third parties could use our proprietary information, which could impair our ability to compete in the market and adversely affect our ability to generate revenues and attain profitability.

We may also rely on the trademarks we may develop to distinguish our products from the products of our competitors. We cannot guarantee that any trademark applications filed by us or our business partners will be approved. Third parties may also oppose such trademark applications, or otherwise challenge our use of the trademarks. In the event that the trademarks we use are successfully challenged, we could be forced to rebrand our products, which could result in loss of brand recognition, and could require us to devote resources to advertising and marketing new brands. Further, we cannot provide assurance that competitors will not infringe the trademarks we use, or that we will have adequate resources to enforce these trademarks.

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Resunab may infringe the intellectual property rights of others, which could increase our costs and delay or prevent our development and commercialization efforts.

Our success depends in part on avoiding infringement of the proprietary technologies of others. The pharmaceutical industry has been characterized by frequent litigation regarding patent and other intellectual property rights. Identification of third party patent rights that may be relevant to our proprietary technology is difficult because patent searching is imperfect due to differences in terminology among patents, incomplete databases and the difficulty in assessing the meaning of patent claims. Additionally, because patent applications are maintained in secrecy until the application is published, we may be unaware of third-party patents that may be infringed by commercialization of Resunab or any future product candidate. There may be certain issued patents and patent applications claiming subject matter that we may be required to license in order to research, develop or commercialize Resunab, and we do not know if such patents and patent applications would be available to license on commercially reasonable terms, or at all. Any claims of patent infringement asserted by third parties would be time-consuming and may:

- result in costly litigation;
- divert the time and attention of our technical personnel and management;
- prevent us from commercializing a product until the asserted patent expires or is held finally invalid or not infringed in a court of law;
- require us to cease or modify our use of the technology and/or develop non-infringing technology; or
- require us to enter into royalty or licensing agreements.

Although no third party has asserted a claim of infringement against us, others may hold proprietary rights that could prevent Resunab from being marketed. Any patent-related legal action against us claiming damages and seeking to enjoin commercial activities relating to Resunab or our processes could subject us to potential liability for damages and require us to obtain a license to continue to manufacture or market Resunab or any future product candidates. We cannot predict whether we would prevail in any such actions or that any license required under any of these patents would be made available on commercially acceptable terms, if at all. In addition, we cannot be sure that we could redesign Resunab or any future product candidates or processes to avoid infringement, if necessary. Accordingly, an adverse determination in a judicial or administrative proceeding, or the failure to obtain necessary licenses, could prevent us from developing and commercializing Resunab or a future product candidate, which could harm our business, financial condition and operating results.

A number of companies, including several major pharmaceutical companies, have conducted research on anti-inflammatory and anti-fibrosis therapies which resulted in the filing of many patent applications related to this

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research. If we were to challenge the validity of these or any issued United States patent in court, we would need to overcome a statutory presumption of validity that attaches to every issued United States patent. This means that, in order to prevail, we would have to present clear and convincing evidence as to the invalidity of the patent's claims.

If we were to challenge the validity of these or any issued United States patent in an administrative trial before the Patent Trial and Appeal Board in the United States Patent and Trademark Office, we would have to prove that the claims are unpatentable by a preponderance of the evidence. There is no assurance that a jury and/or court would find in our favor on questions of infringement, validity or enforceability.

We may be subject to claims that we have wrongfully hired an employee from a competitor or that we or our employees have wrongfully used or disclosed alleged confidential information or trade secrets of their former employers.

As is commonplace in our industry, we employ individuals who were previously employed at other pharmaceutical companies, including our competitors or potential competitors. Although no claims against us are currently pending, we may be subject in the future to claims that our employees or prospective employees are subject to a continuing obligation to their former employers (such as non-competition or non-solicitation obligations) or claims that our employees or we have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers. Litigation may be necessary to defend against these claims. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to management.

General Company-Related Risks

We will need to grow the size of our organization, and we may experience difficulties in managing this growth.

We currently have ten employees. As our development and commercialization plans and strategies develop, we will need to expand the size of our employee base for managerial, operational, sales, marketing, financial and other resources. Future growth would impose significant added responsibilities on members of management, including the need to identify, recruit, maintain, motivate and integrate additional employees. In addition, our management may have to divert a disproportionate amount of its attention away from our day-to-day activities and devote a substantial amount of time to managing these growth activities. Our future financial performance and our ability to commercialize Resunab and any other future product candidates and our ability to compete effectively will depend, in part, on our ability to effectively manage our future growth.

Future capital raises may dilute our existing stockholders' ownership and/or have other adverse effects on our operations.

If we raise additional capital by issuing equity securities, our existing stockholders' percentage ownership will be reduced and these stockholders may experience substantial dilution. We may also issue equity securities that provide for rights, preferences and privileges senior to those of our common stock. If we raise additional funds by

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issuing debt securities, these debt securities would have rights senior to those of our common stock and the terms of the debt securities issued could impose significant restrictions on our operations, including liens on our assets. If we raise additional funds through collaborations and licensing arrangements, we may be required to relinquish some rights to our technologies or candidate products, or to grant licenses on terms that are not favorable to us.

If we are not successful in attracting and retaining highly qualified personnel, we may not be able to successfully implement our business strategy. In addition, the loss of the services of certain key employees, including Yuval Cohen, our CEO, Mark Tepper, our President and Chief Scientific Officer, Barbara White, our Chief Medical Officer and Sean Moran, our Chief Financial Officer would adversely impact our business prospects.

Our ability to compete in the highly competitive pharmaceuticals industry depends in large part upon our ability to attract highly qualified managerial, scientific and medical personnel. In order to induce valuable employees to remain with us, we intend to provide employees with stock options that vest over time. The value to employees of stock options that vest over time will be significantly affected by movements in our stock price that we will not be able to control and may at any time be insufficient to counteract more lucrative offers from other companies.

Our management team has expertise in many different aspects of drug development and commercialization. However, we will need to hire additional personnel as we further develop Resunab. Competition for skilled personnel in our market is intense and competition for experienced scientists may limit our ability to hire and retain highly qualified personnel on acceptable terms. Despite our efforts to retain valuable employees, members of our management, scientific and medical teams may terminate their employment with us on short notice. In connection with the Merger, we entered into employment agreements with certain of our executive officers. However, these employment arrangements provide for at-will employment, which means that any of our employees could leave our employment at any time, with or without notice. The loss of the services of any of our executive officers or other key employees could potentially harm our business, operating results or financial condition. In particular, we believe that the loss of the services of Yuval Cohen Ph.D., our Chief Executive Officer, Mark Tepper Ph.D., our President and Chief Scientific Officer, Barbara White, M.D., our Chief Medical Officer and Sean Moran, C.P.A., M.B.A., our Chief Financial Officer, would have a material adverse effect on our business. Our success also depends on our ability to continue to attract, retain and motivate highly skilled junior, mid-level, and senior managers as well as junior, mid-level, and senior scientific and medical personnel.

Other pharmaceutical companies with which we compete for qualified personnel have greater financial and other resources, different risk profiles, and a longer history in the industry than we do. They also may provide more diverse opportunities and better chances for career advancement. Some of these characteristics may be more appealing to high-quality candidates than what we have to offer. If we are unable to continue to attract and retain high-quality personnel, the rate and success at which we can develop and commercialize product candidates would be limited.

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If product liability lawsuits are brought against us, we may incur substantial liabilities and may be required to limit commercialization of Resunab.

We face a potential risk of product liability as a result of the clinical testing of Resunab and will face an even greater risk if we commercialize Resunab or any other future product. For example, we may be sued if any product we develop, including Resunab, or any materials that we use in our products allegedly causes injury or is found to be otherwise unsuitable during product testing, manufacturing, marketing or sale. Any such product liability claims may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product, negligence, strict liability and a breach of warranties. Claims could also be asserted under state consumer protection acts. If we cannot successfully defend ourselves against product liability claims, we may incur substantial liabilities or be required to limit commercialization of Resunab. Even successful defense would require significant financial and management resources. Regardless of the merits or eventual outcome, liability claims may result in:

- decreased demand for Resunab or any future products that we may develop;
- injury to our reputation;
- withdrawal of clinical trial participants;
- costs to defend the related litigation;
- a diversion of management's time and our resources;
- substantial monetary awards to trial participants or patients;
- product recalls, withdrawals or labeling, marketing or promotional restrictions;
- the inability to commercialize Resunab; and
- a decline in the value of our stock.

Our inability to obtain and retain sufficient product liability insurance at an acceptable cost to protect against potential product liability claims could prevent or inhibit the commercialization of products we develop. We intend to obtain product liability insurance covering our clinical trials. Although we will maintain such insurance, any claim that may be brought against us could result in a court judgment or settlement in an amount that is not covered, in whole or in part, by our insurance or that is in excess of the limits of our insurance coverage. Our insurance policies also have various exclusions, and we may be subject to a product liability claim for which we have no coverage. We may have to pay any amounts awarded by a court or negotiated in a settlement that exceed our coverage limitations or that are not covered by our insurance, and we may not have, or be able to obtain, sufficient capital to pay such amounts.

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We may acquire businesses or products, or form strategic alliances, in the future, and we may not realize the benefits of such acquisitions.

We may acquire additional businesses or products, form strategic alliances or create joint ventures with third parties that we believe will complement or augment our existing business. If we acquire businesses with promising markets or technologies, we may not be able to realize the benefit of acquiring such businesses if we are unable to successfully integrate them with our existing operations and company culture. We may encounter numerous difficulties in developing, manufacturing and marketing any new products resulting from a strategic alliance or acquisition that delay or prevent us from realizing their expected benefits or enhancing our business. We cannot assure you that, following any such acquisition, we will achieve the expected synergies to justify the transaction.

Risks Related to our Common Stock

Our majority stockholders will control our company for the foreseeable future, including the outcome of matters requiring stockholder approval.

Our officers, directors, and five percent stockholders collectively own approximately 31.1% of our outstanding shares of common stock. In addition, these stockholders entered into a voting agreement whereby they agreed to vote in favor of nominees for directors selected by the parties to the voting agreement as described herein. As a result, such entities and individuals will have the ability, acting together, to control the election of our directors and the outcome of corporate actions requiring stockholder approval, such as: (i) a merger or a sale of our company, (ii) a sale of all or substantially all of our assets, and (iii) amendments to our articles of incorporation and bylaws. This concentration of voting power and control could have a significant effect in delaying, deferring or preventing an action that might otherwise be beneficial to our other stockholders and be disadvantageous to our stockholders (including investors in this Offering) with interests different from those entities and individuals. Certain of these individuals also have significant control over our business, policies and affairs as officers or directors of our company. Therefore, you should not invest in reliance on your ability to have any control over our company.

An investment in our company should be considered illiquid.

An investment in our company requires a long-term commitment, with no certainty of return. Because we became a reporting company other than by the traditional means of conducting an initial public offering of our common stock, we may be unable to establish a liquid market for our common stock. In addition, investment banks may be less likely to agree to underwrite primary or secondary offerings on behalf of our company or its stockholders in the future than they would if we had become a public reporting company by means of an initial public offering of common stock. If all or any of the foregoing risks occur, it would have a material adverse effect on our company.

An active, liquid trading market for our common stock may not develop or be sustained.

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Presently, our common stock is traded on the Nasdaq Capital Market and as we are in our early stages, an investment in our company will require a long-term commitment, with no certainty of return. Presently there is limited trading in our stock and in the absence of an active trading market:

- investors may have difficulty buying and selling or obtaining market quotations;
- market visibility for shares of our common stock may be limited; and
- a lack of visibility for shares of our common stock may have a depressive effect on the market price for shares of our common stock.

The lack of an active market impairs your ability to sell your shares at the time you wish to sell them or at a price that you consider reasonable. The lack of an active market may also reduce the fair market value of your shares. An inactive market may also impair our ability to raise capital to continue to fund operations by selling shares and may impair our ability to acquire additional intellectual property assets by using our shares as consideration.

We are currently listed on the Nasdaq Capital Market. If we are unable to maintain listing of our securities on the Nasdaq Capital Market or any stock exchange, our stock price could be adversely affected and the liquidity of our stock and our ability to obtain financing could be impaired and it may be more difficult for our stockholders to sell their securities.

Although our common stock is currently listed on the Nasdaq Capital Market, we may not be able to continue to meet the exchange's minimum listing requirements or those of any other national exchange. In addition, a liquid market may not develop for our common stock. If we are unable to maintain listing on the Nasdaq Capital Market or if a liquid market for our common stock does not develop, our common stock may remain thinly traded.

The Listing Rules of the Nasdaq Capital Market require listing issuers to comply with certain standards in order to remain listed on its exchange. If, for any reason, we should fail to maintain compliance with these listing standards and Nasdaq should delist our securities from trading on its exchange and we are unable to obtain listing on another national securities exchange, a reduction in some or all of the following may occur, each of which could have a material adverse effect on our stockholders:

- the liquidity of our common stock;
- the market price of our common stock;
- our ability to obtain financing for the continuation of our operations;
- the number of institutional and general investors that will consider investing in our common stock;
- the number of investors in general that will consider investing in our common stock;
- the number of market makers in our common stock;

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- the availability of information concerning the trading prices and volume of our common stock; and
- the number of broker-dealers willing to execute trades in shares of our common stock.

Even if an active trading market for our common stock develops, the market price of our common stock may be significantly volatile.

Even if an active market for our common stock develops, of which no assurances can be given, the market price for our common stock may be volatile and subject to wide fluctuations in response to factors including the following:

- actual or anticipated fluctuations in our quarterly or annual operating results;
- changes in financial or operational estimates or projections;
- conditions in markets generally;
- changes in the economic performance or market valuations of companies similar to ours; and
- general economic or political conditions in the United States or elsewhere.

In particular, the market prices of biotechnology companies like ours have been highly volatile due to factors, including, but not limited to:

- any delay or failure to conduct a clinical trial for our product or receive approval from the FDA and other regulatory agencies;
- developments or disputes concerning our product's intellectual property rights;
- our or our competitors' technological innovations;
- changes in market valuations of similar companies;
- announcements by us or our competitors of significant contracts, acquisitions, strategic partnerships, joint ventures, capital commitments, new technologies, or patents; and
- failure to complete significant transactions or collaborate with vendors in manufacturing our product.

The securities market has from time to time experienced significant price and volume fluctuations that are not related to the operating performance of particular companies. These market fluctuations may also materially and adversely affect the market price of shares of our common stock.

Future sales of shares by existing stockholders could cause our stock price to decline.

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As of September 30, 2015, we had outstanding options to purchase an aggregate of 3,828,065 shares of our common stock at a weighted average exercise price of \$0.99 per share and warrants to purchase an aggregate of 1,969,250 shares of our common stock at a weighted average exercise price of \$0.97 per share. The exercise of such outstanding options and warrants will result in further dilution of your investment. If our existing stockholders sell substantial amounts of our common stock in the public market, or if the public perceives that such sales could occur, this could have an adverse impact on the market price of our common stock, even if there is no relationship between such sales and the performance of our business.

We are an “emerging growth company,” and will be able take advantage of reduced disclosure requirements applicable to “emerging growth companies,” which could make our common stock less attractive to investors.

We are an “emerging growth company,” as defined in the Jumpstart Our Business Startups Act of 2012, or JOBS Act, and, for as long as we continue to be an “emerging growth company,” we intend to take advantage of certain exemptions from various reporting requirements applicable to other public companies but not to “emerging growth companies,” including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. We will remain an emerging growth company until the earlier of (1) January 1, 2020, (2) the last day of the first fiscal year in which our annual gross revenues exceed \$1 billion, (3) the date on which we become a “large accelerated filer” as defined in Rule 12b-2 under the Securities Exchange Act of 1934, as amended, which would occur if the market value of our common stock that is held by non-affiliates exceeds \$700 million as of the last business day of our most recently completed second fiscal quarter or (4) the date on which we have issued more than \$1 billion in non-convertible debt during the preceding three-year period.

We intend to take advantage of these reporting exemptions described above until we are no longer an “emerging growth company.” Under the JOBS Act, “emerging growth companies” can also delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have irrevocably elected not to avail ourselves of this exemption from new or revised accounting standards and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not “emerging growth companies.”

We cannot predict if investors will find our common stock less attractive if we choose to rely on these exemptions. If some investors find our common stock less attractive as a result of any choices to reduce future disclosure, there may be a less active trading market for our common stock and our stock price may be more volatile.

We will incur significantly increased costs and devote substantial management time as a result of operating as a public company particularly after we are no longer an “emerging growth company.”

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As a public company, we incur significant legal, accounting and other expenses that we did not incur as a private company. For example, we are required to comply with certain of the requirements of the Sarbanes-Oxley Act and the Dodd-Frank Wall Street Reform and Consumer Protection Act, as well as rules and regulations subsequently implemented by the SEC, including the establishment and maintenance of effective disclosure and financial controls and changes in corporate governance practices. We expect that compliance with these requirements will increase our legal and financial compliance costs and will make some activities more time consuming and costly. In addition, we expect that our management and other personnel will need to divert attention from operational and other business matters to devote substantial time to these public company requirements. In particular, we expect to incur significant expenses and devote substantial management effort toward ensuring compliance with the requirements of Section 404 of the Sarbanes-Oxley Act. In addition, after we are no longer qualify as an “emerging growth company,” we expect to incur additional management time and cost to comply with the more stringent reporting requirements applicable to companies that are deemed accelerated filers or large accelerated filers, including complying with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act. We are just beginning the process of compiling the system and processing documentation needed to comply with such requirements. We may not be able to complete our evaluation, testing and any required remediation in a timely fashion. In that regard, we currently do not have an internal audit function, and we will need to hire or contract for additional accounting and financial staff with appropriate public company experience and technical accounting knowledge.

We cannot predict or estimate the amount of additional costs we may incur as a result of becoming a public company or the timing of such costs.

There may be limitations on the effectiveness of our internal controls, and a failure of our control systems to prevent error or fraud may materially harm our company.

Proper systems of internal controls over financial accounting and disclosure are critical to the operation of a public company. As we are a start-up company, we only have ten full time employees which results in a lack of segregation of duties and are at the very early stages of establishing, and we may be unable to effectively establish such systems, especially in light of the fact that we expect to operate as a publicly reporting company. This would leave us without the ability to reliably assimilate and compile financial information about our company and significantly impair our ability to prevent error and detect fraud, all of which would have a negative impact on our company from many perspectives.

Moreover, we do not expect that disclosure controls or internal control over financial reporting, even if established, will prevent all error and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system’s objectives will be met. Further, the design of a control system must reflect the fact that there are resource constraints and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, have been detected. Failure of our control systems to prevent error or fraud could materially adversely impact us.

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We do not currently intend to pay dividends on our common stock in the foreseeable future, and consequently, your ability to achieve a return on your investment will depend on appreciation in the price of our common stock.

We have never declared or paid cash dividends on our common stock and do not anticipate paying any cash dividends to holders of our common stock in the foreseeable future. Consequently, investors must rely on sales of their common stock after price appreciation, which may never occur, as the only way to realize any future gains on their investments. There is no guarantee that shares of our common stock will appreciate in value or even maintain the price at which our investors have purchased their shares.

We may be unable to complete our analysis of our internal controls over financial reporting in a timely manner, or these internal controls may not be determined to be effective, which may adversely affect investor confidence in our company and, as a result, the value of our common stock.

We may be required, pursuant to Section 404 of the Sarbanes-Oxley Act, to furnish a report by our management on, among other things, the effectiveness of our internal control over financial reporting for the first fiscal year beginning after the effective date of a Registration Statement filed on Form S-1, or the fiscal year ended December 31, 2015. This assessment will need to include disclosure of any material weaknesses identified by our management in our internal control over financial reporting, as well as a statement that our independent registered public accounting firm has issued an opinion on our internal control over financial reporting.

We are in the very early stages of the costly and challenging process of compiling the system and processing documentation necessary to perform the evaluation needed to comply with Section 404. We may not be able to complete our evaluation, testing and any required remediation in a timely fashion. During the evaluation and testing process, if we identify one or more material weaknesses in our internal control over financial reporting, we will be unable to assert that our internal controls are effective.

If we are unable to assert that our internal control over financial reporting is effective, or, if applicable, our independent registered public accounting firm is unable to express an opinion on the effectiveness of our internal controls, we could lose investor confidence in the accuracy and completeness of our financial reports, which would cause the price of our common stock to decline, and we may be subject to investigation or sanctions by the SEC. We will also be required to disclose changes made in our internal control and procedures on a quarterly basis.

However, our independent registered public accounting firm will not be required to formally attest to the effectiveness of our internal control over financial reporting pursuant to Section 404 until the later of the year following our first annual report required to be filed with the SEC, or the date we are no longer an “emerging growth company” as defined in the recently enacted JOBS Act, if we take advantage (as we expect to do) of the exemptions contained in the JOBS Act.

At such time, our independent registered public accounting firm may issue a report that is adverse in the event it is not satisfied with the level at which our controls are documented, designed or operating. Our remediation efforts may not enable us to avoid a material weakness in our internal control over financial reporting in the future. Any of the foregoing occurrences, should they come to pass, could negatively impact the public perception of our company, which could have a negative impact on our stock price.

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Upon dissolution of our company, you may not recoup all or any portion of your investment.

In the event of a liquidation, dissolution or winding-up of our company, whether voluntary or involuntary, the proceeds and/or assets of our company remaining after giving effect to such transaction, and the payment of all of our debts and liabilities and distributions required to be made to holders of any outstanding preferred stock will then be distributed to the stockholders of common stock on a pro rata basis. There can be no assurance that we will have available assets to pay to the holders of common stock, or any amounts, upon such a liquidation, dissolution or winding-up of our Company. In this event, you could lose some or all of your investment.

Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited.

As a result of our merger in April 2014 with Corbus Pharmaceuticals, Inc., our wholly-owned subsidiary, our ability to utilize our federal net operating loss, carryforwards and federal tax credit may be limited under Sections 382 of the Internal Revenue Code. The limitations apply if an “ownership change,” as defined by Section 382, occurs. Generally, an ownership change occurs if the percentage of the value of the stock that is owned by one or more direct or indirect “five percent shareholders” increases by more than 50 percentage points over their lowest ownership percentage at any time during the applicable testing period (typically three years). In addition, future changes in our stock ownership, which may be outside of our control, may trigger an “ownership change” and, consequently, Section 382 limitations. As a result, if we earn net taxable income, our ability to use our pre-change net operating loss carryforwards and other tax attributes to offset United States federal taxable income may be subject to limitations, which could potentially result in increased future tax liability to us.

Our certificate of incorporation, as amended, allows for our board to create new series of preferred stock without further approval by our stockholders, which could adversely affect the rights of the holders of our common stock.

Our board of directors has the authority to fix and determine the relative rights and preferences of preferred stock. We anticipate that our board of directors will have the authority to issue up to 10,000,000 shares of our preferred stock without further stockholder approval. As a result, our board of directors could authorize the issuance of a series of preferred stock that would grant to holders the preferred right to our assets upon liquidation and the right to receive dividend payments before dividends are distributed to the holders of common stock. In addition, our board of directors could authorize the issuance of a series of preferred stock that has greater voting power than our common stock or that is convertible into our common stock, which could decrease the relative voting power of our common stock or result in dilution to our existing stockholders.

FORWARD-LOOKING STATEMENTS

This prospectus, including the documents that we incorporate by reference, contains forward-looking statements as that term is defined in the federal securities laws. The events described in forward-looking statements contained in this prospectus, including the documents that we incorporate by reference, may not occur. Generally, these statements relate to our business plans or strategies, projected or anticipated benefits or other consequences of

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our plans or strategies, financing plans, projected or anticipated benefits from acquisitions that we may make, or projections involving anticipated revenues, earnings or other aspects of our operating results or financial position, and the outcome of any contingencies. Any such forward-looking statements are based on current expectations, estimates and projections of management. We intend for these forward-looking statements to be covered by the safe-harbor provisions for forward-looking statements. Words such as “may,” “expect,” “believe,” “anticipate,” “project,” “plan,” “intend,” “estimate,” and “continue,” and their opposites and similar expressions are intended to identify forward-looking statements. We caution you that these statements are not guarantees of future performance or events and are subject to a number of uncertainties, risks and other influences, many of which are beyond our control that may influence the accuracy of the statements and the projections upon which the statements are based. Factors that may affect our results include, but are not limited to, the risks and uncertainties discussed in the “Risk Factors” section on page 3 of this prospectus, in our Annual Report on Form 10-K or in other reports we file with the Securities and Exchange Commission.

Any one or more of these uncertainties, risks and other influences could materially affect our results of operations and whether forward-looking statements made by us ultimately prove to be accurate. Our actual results, performance and achievements could differ materially from those expressed or implied in these forward-looking statements. We undertake no obligation to publicly update or revise any forward-looking statements, whether from new information, future events or otherwise.

You should rely only on the information in this prospectus. We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely upon it. You should assume that the information in this prospectus was accurate on the date of the front cover of this prospectus only. Our business, financial condition, results of operations and prospects may have changed since that date.

USE OF PROCEEDS

Unless we inform you otherwise in the prospectus supplement, we will use the net proceeds from the sale of the securities offered by this prospectus and the exercise price from the exercise of any convertible securities, if any, for general corporate purposes, which may include funding research, development and product manufacturing, clinical trials, acquisitions or investments in businesses, products or technologies that are complementary to our own, increasing our working capital, reducing indebtedness, and capital expenditures. Pending their uses, we intend to invest the net proceeds of this offering in interest-bearing bank accounts or in short-term, interest-bearing, investment-grade securities.

THE SECURITIES WE MAY OFFER

General

The descriptions of the securities contained in this prospectus, together with the applicable prospectus supplements, summarize all of the material terms and provisions of the various types of securities that we may offer. We will describe in the applicable prospectus supplement relating to any securities the particular terms of the securities offered by that prospectus supplement. If we indicate in the applicable prospectus supplement, the terms

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of the securities may differ from the terms we have summarized below. We will also include in the prospectus supplement information, where applicable, about material United States federal income tax considerations relating to the securities, and the securities exchange, if any, on which the securities will be listed.

We may sell from time to time, in one or more offerings:

- common stock;
- preferred stock;
- debt securities;
- warrants to purchase shares of common stock or preferred stock; and
- units consisting of any combination of the securities listed above.

In this prospectus, we refer to the common stock, preferred stock, debt securities, warrants and units collectively as “securities.” The total dollar amount of all securities that we may sell will not exceed \$100,000,000.

If we issue debt securities at a discount from their original stated principal amount, then, for purposes of calculating the total dollar amount of all securities issued under this prospectus, we will treat the initial offering price of the debt securities as the total original principal amount of the debt securities.

This prospectus may not be used to consummate a sale of securities unless it is accompanied by a prospectus supplement.

DESCRIPTION OF CAPITAL STOCK

General

Our authorized capital stock consists of:

- 150,000,000 shares of common stock, par value \$0.0001 per share; and
- 10,000,000 shares of preferred stock, par value \$0.0001 per share, of which, as of the date of this prospectus, none of which shares have been designated.

As of close of business on November 9, 2015, 37,605,134 shares of common stock were issued and outstanding and no shares of preferred stock were issued and outstanding.

The additional shares of our authorized stock available for issuance may be issued at times and under circumstances so as to have a dilutive effect on earnings per share and on the equity ownership of the holders of our common stock. The ability of our board of directors to issue additional shares of stock could enhance the board’s ability to negotiate on behalf of the stockholders in a takeover situation but could also be used by the board to make a change-in-control more difficult, thereby denying stockholders the potential to sell their shares at a premium and entrenching current management. The following description is a summary of the material provisions of our capital stock. You should refer to our certificate of incorporation, as amended and bylaws, both of which are on file with the SEC as exhibits to previous SEC filings, for additional information. The summary below is qualified by provisions of applicable law.

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Common Stock

Voting. The holders of the common stock are entitled to one vote for each share held of record on all matters on which the holders are entitled to vote (or consent pursuant to written consent). Directors are elected by a plurality of the votes present in person or represented by proxy and entitled to vote.

Dividends. The holders of the common stock are entitled to receive, ratably, dividends only if, when and as declared by the Registrant's board of directors out of funds legally available therefor and after provision is made for each class of capital stock having preference over the common stock.

Liquidation Rights. In the event of our liquidation, dissolution or winding-up, the holders of common stock are entitled to share, ratably, in all assets remaining available for distribution after payment of all liabilities and after provision is made for each class of capital stock having preference over the common stock.

Conversion Right. The holders of the common stock have no conversion rights.

Preemptive and Similar Rights. The holders of the common stock have no preemptive or similar rights.

Redemption/Put Rights. There are no redemption or sinking fund provisions applicable to the common stock. All of the outstanding shares of our common stock are fully-paid and nonassessable.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Continental Stock Transfer & Trust Company, LLC.

Preferred Stock

We are authorized to issue up to 10,000,000 shares of preferred stock, all of which are undesignated. Our board of directors has the authority, within the limitations and restrictions prescribed by law and without stockholder approval, to provide by resolution for the issuance of shares of preferred stock, and to fix the rights, preferences, privileges and restrictions thereof, including dividend rights, conversion rights, voting rights, terms of redemption, liquidation preference and the number of shares constituting any series of the designation of such series, by delivering an appropriate certificate of amendment to our amended and restated certificate of incorporation to the Delaware Secretary of State pursuant to the Delaware General Corporation Law (the "DGCL"). The issuance of preferred stock could have the effect of decreasing the market price of the common stock, impeding or delaying a possible takeover and adversely affecting the voting and other rights of the holders of our common stock.

If we offer a specific series of preferred stock under this prospectus, we will describe the terms of the preferred stock in the prospectus supplement for such offering and will file a copy of the certificate establishing the terms of the preferred stock with the SEC. To the extent required, this description will include:

- the title and stated value;
- the number of shares offered, the liquidation preference per share and the purchase price;
- the dividend rate(s), period(s) and/or payment date(s), or method(s) of calculation for such dividends;
- whether dividends will be cumulative or non-cumulative and, if cumulative, the date from which dividends will accumulate;

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- the procedures for any auction and remarketing, if any;
- the provisions for a sinking fund, if any;
- the provisions for redemption, if applicable;
- any listing of the preferred stock on any securities exchange or market;
- whether the preferred stock will be convertible into our common stock, and, if applicable, the conversion price (or how it will be calculated) and conversion period;
- whether the preferred stock will be exchangeable into debt securities, and, if applicable, the exchange price (or how it will be calculated) and exchange period;
- voting rights, if any, of the preferred stock;
- a discussion of any material and/or special U.S. federal income tax considerations applicable to the preferred stock;
- the relative ranking and preferences of the preferred stock as to dividend rights and rights upon liquidation, dissolution or winding up of the affairs of Corbus; and
- any material limitations on issuance of any class or series of preferred stock ranking senior to or on a parity with the series of preferred stock as to dividend rights and rights upon liquidation, dissolution or winding up of Corbus.

Transfer Agent and Registrar for Preferred Stock

The transfer agent and registrar for any series or class of preferred stock will be set forth in each applicable prospectus supplement.

Anti-takeover Effects of Delaware Law and our Certificate of Incorporation, as amended

Our certificate of incorporation, as amended, and bylaws contain provisions that could have the effect of discouraging potential acquisition proposals or tender offers or delaying or preventing a change of control. These provisions are as follows:

- they provide that special meetings of stockholders may be called by the board of directors or at the request in writing by stockholders of record owning at least twenty (20%) percent of the issued and outstanding voting shares of common stock;
- they do not include a provision for cumulative voting in the election of directors. Under cumulative voting, a minority stockholder holding a sufficient number of shares may be able to ensure the election of one or more directors. The absence of cumulative voting may have the effect of limiting the ability of minority stockholders to effect changes to the our board of directors; and
- they allow us to issue, without stockholder approval, up to 10,000,000 shares of preferred stock, with such designations, rights, and preferences as may be determined from time to time by our board of directors that could adversely affect the rights and powers of the holders of the common stock, including dividend, liquidation, conversion, voting, or other rights that could adversely affect the voting power or other rights of the holders of our common stock. The issuance of preferred stock could have the effect of restricting dividends on our common stock, diluting the

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voting power of our common stock, impairing the liquidation rights of our common stock, or delaying or preventing a change in control of our company, all without further action by our stockholders.

We are subject to the provisions of Section 203 of the General Corporation Law of the State of Delaware, an anti-takeover law. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a “business combination” with an “interested stockholder” for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in the following prescribed manner:

- prior to the time of the transaction, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of shares outstanding (1) shares owned by persons who are directors and also officers and (2) shares owned 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; and
- on or subsequent to the time of the transaction, the business combination is approved by the board and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock which is not owned by the interested stockholder.

Generally, for purposes of Section 203, a “business combination” includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. An “interested stockholder” is a person who, together with affiliates and associates, owns or, within three years prior to the determination of interested stockholder status, owned 15% or more of a corporation’s outstanding voting securities.

Stockholder Action by Written Consent

The Registrant’s certificate of incorporation, as amended, provides that any action required by law to be taken at any annual or special meeting of the stockholders or any action which may be taken at such a meeting may be taken without a meeting by written consent of the stockholders in lieu of a meeting.

Potential Effects of Authorized but Unissued Stock

We have shares of common stock and preferred stock available for future issuance without stockholder approval. We may utilize these additional shares for a variety of corporate purposes, including future public offerings to raise additional capital, to facilitate corporate acquisitions or payment as a dividend on the capital stock.

The existence of unissued and unreserved common stock and preferred stock may enable our board of directors to issue shares to persons friendly to current management or to issue preferred stock with terms that could

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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, the board of directors has the discretion to determine designations, rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences of each series of preferred stock, all to the fullest extent permissible under the DGCL and subject to any limitations set forth in our certificate of incorporation, as amended. The purpose of authorizing the board of directors to issue preferred stock and to determine the rights and preferences applicable to such preferred stock is to eliminate delays associated with a stockholder vote on specific issuances. The issuance of preferred stock, while providing desirable flexibility in connection with possible financings, acquisitions and other corporate purposes, could have the effect of making it more difficult for a third-party to acquire, or could discourage a third-party from acquiring, a majority of our outstanding voting stock.

DESCRIPTION OF STOCK WARRANTS

We summarize below some of the provisions that will apply to the warrants unless the applicable prospectus supplement provides otherwise. This summary may not contain all information that is important to you. The complete terms of the warrants will be contained in the applicable warrant certificate and warrant agreement. These documents have been or will be included or incorporated by reference as exhibits to the registration statement of which this prospectus is a part. You should read the warrant certificate and the warrant agreement. You should also read the prospectus supplement, which will contain additional information and which may update or change some of the information below.

General

We may issue, together with common or preferred stock as units or separately, warrants for the purchase of shares of our common or preferred stock. The terms of each warrant will be discussed in the applicable prospectus supplement relating to the particular series of warrants. The form(s) of certificate representing the warrants and/or the warrant agreement, will be, in each case, filed with the SEC as an exhibit to a document incorporated by reference in the registration statement of which this prospectus is a part on or prior to the date of any prospectus supplement relating to an offering of the particular warrant. The following summary of material provisions of the warrants and the warrant agreements are subject to, and qualified in their entirety by reference to, all the provisions of the warrant agreement and warrant certificate applicable to a particular series of warrants.

The prospectus supplement relating to any series of warrants that are offered by this prospectus will describe, among other things, the following terms to the extent they are applicable to that series of warrants:

- the procedures and conditions relating to the exercise of the warrants;
- the number of shares of our common or preferred stock, if any, issued with the warrants;
- the date, if any, on and after which the warrants and any related shares of our common or preferred stock will be separately transferable;
- the offering price of the warrants, if any;

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- the number of shares of our common or preferred stock which may be purchased upon exercise of the warrants and the price or prices at which the shares may be purchased upon exercise;
- the date on which the right to exercise the warrants will begin and the date on which the right will expire;
- a discussion of the material United States federal income tax considerations applicable to the exercise of the warrants;
- anti-dilution provisions of the warrants, if any;
- call provisions of the warrants, if any; and
- any other material terms of the warrants.

Each warrant may entitle the holder to purchase for cash, or, in limited circumstances, by effecting a cashless exercise for, the number of shares of our common or preferred stock at the exercise price that is described in the applicable prospectus supplement. Warrants will be exercisable during the period of time described in the applicable prospectus supplement. After that period, unexercised warrants will be void. Warrants may be exercised in the manner described in the applicable prospectus supplement.

A holder of a warrant will not have any of the rights of a holder of our common or preferred stock before the stock is purchased upon exercise of the warrant. Therefore, before a warrant is exercised, the holder of the warrant will not be entitled to receive any dividend payments or exercise any voting or other rights associated with shares of our common or preferred stock which may be purchased when the warrant is exercised.

Transfer Agent and Registrar

The transfer agent and registrar, if any, for any warrants will be set forth in the applicable prospectus supplement.

DESCRIPTION OF DEBT SECURITIES

We summarize below some of the provisions that will apply to the debt securities unless the applicable prospectus supplement provides otherwise. This summary may not contain all information that is important to you. The complete terms of the debt securities will be contained in the applicable notes. The notes will be included or incorporated by reference as exhibits to the registration statement of which this prospectus is a part. You should read the provisions of the notes. You should also read the prospectus supplement, which will contain additional information and which may update or change some of the information below.

General

This prospectus describes certain general terms and provisions of the debt securities. The debt securities will be issued under an indenture between us and a trustee to be designated prior to the issuance of the debt securities. When we offer to sell a particular series of debt securities, we will describe the specific terms of the securities in a supplement to this prospectus. The prospectus supplement will also indicate whether the general terms and provisions described in this prospectus apply to a particular series of debt securities.

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We may issue, from time to time, debt securities, in one or more series, that will consist of either our senior debt (“senior debt securities”), our senior subordinated debt (“senior subordinated debt securities”), our subordinated debt (“subordinated debt securities”) or our junior subordinated debt (“junior subordinated debt securities” and, together with the senior subordinated debt securities and the subordinated debt securities, the “subordinated securities”). Debt securities, whether senior, senior subordinated, subordinated or junior subordinated, may be issued as convertible debt securities or exchangeable debt securities.

We have summarized herein certain terms and provisions of the form of indenture (the “indenture”). The summary is not complete and is qualified in its entirety by reference to the actual text of the indenture. The indenture is an exhibit to the registration statement of which this prospectus is a part. You should read the indenture for the provisions which may be important to you. The indenture is subject to and governed by the Trust Indenture Act of 1939, as amended.

The indenture does not limit the amount of debt securities which we may issue. We may issue debt securities up to an aggregate principal amount as we may authorize from time to time which securities may be in any currency or currency unit designated by us. The terms of each series of debt securities will be established by or pursuant to (a) a supplemental indenture, (b) a resolution of our board of directors, or (c) an officers’ certificate pursuant to authority granted under a resolution of our board of directors. The prospectus supplement will describe the terms of any debt securities being offered, including:

- the title of the debt securities;
- the limit, if any, upon the aggregate principal amount or issue price of the debt securities of a series;
- ranking of the specific series of debt securities relative to other outstanding indebtedness, including any debt of any of our subsidiaries;
- the price or prices at which the debt securities will be issued;
- the designation, aggregate principal amount and authorized denominations of the series of debt securities;
- the issue date or dates of the series and the maturity date of the series;
- whether the securities will be issued at par or at a premium over or a discount from their face amount;
- the interest rate, if any, and the method for calculating the interest rate and basis upon which interest shall be calculated;
- the right, if any, to extend interest payment periods and the duration of the extension;
- the interest payment dates and the record dates for the interest payments;
- any mandatory or optional redemption terms or prepayment, conversion, sinking fund or exchangeability or convertibility provisions;
- the currency of denomination of the securities;
- the place where we will pay principal, premium, if any, and interest, if any, and the place where the debt securities may be presented for transfer;

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- if payments of principal of, premium, if any, or interest, if any, on the debt securities will be made in one or more currencies or currency units other than that or those in which the debt securities are denominated, the manner in which the exchange rate with respect to these payments will be determined;
- if other than denominations of \$1,000 or multiples of \$1,000, the denominations the debt securities will be issued in;
- whether the debt securities will be issued in the form of global securities or certificates;
- the applicability of and additional provisions, if any, relating to the defeasance of the debt securities;
- the portion of principal amount of the debt securities payable upon declaration of acceleration of the maturity date, if other than the entire principal amount;
- the currency or currencies, if other than the currency of the United States, in which principal and interest will be paid;
- the dates on which premium, if any, will be paid;
- any addition to or change in the “Events of Default” described in this prospectus or in the indenture with respect to the debt securities and any change in the acceleration provisions described in this prospectus or in the indenture with respect to the debt securities;
- any addition to or change in the covenants described in the prospectus or in the indenture with respect to the debt securities;
- our right, if any, to defer payment of interest and the maximum length of this deferral period; and
- other specific terms, including any additional events of default or covenants.

We may issue debt securities at a discount below their stated principal amount. Even if we do not issue the debt securities below their stated principal amount, for United States federal income tax purposes the debt securities may be deemed to have been issued with a discount because of certain interest payment characteristics. We will describe in any applicable prospectus supplement the United States federal income tax considerations applicable to debt securities issued at a discount or deemed to be issued at a discount, and will describe any special United States federal income tax considerations that may be applicable to the particular debt securities.

We may structure one or more series of subordinated securities so that they qualify as capital under federal regulations applicable to bank holding companies. We may adopt this structure whether or not those regulations may be applicable to us at the time of issuance.

The debt securities will represent our general unsecured obligations. Holders of the debt securities should look only to our assets for payments on the debt securities. The indenture does not limit the incurrence or issuance of our secured or unsecured debt including senior indebtedness.

Senior Debt

Senior debt securities will rank equally and *pari passu* with all of our other unsecured and unsubordinated debt from time to time outstanding.

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Subordinated Debt

The indenture does not limit our ability to issue subordinated debt securities. Any subordination provisions of a particular series of debt securities will be set forth in the supplemental indenture, board resolution or officers' certificate related to that series of debt securities and will be described in the relevant prospectus supplement.

If a future prospectus supplement is delivered in connection with a series of subordinated debt securities, that prospectus supplement, or the information incorporated by reference in that prospectus supplement, will set forth the approximate amount of senior indebtedness outstanding as of the end of the then-most recent fiscal quarter.

Conversion or Exchange Rights

Debt securities may be convertible into or exchangeable for our other securities or property. The terms and conditions of conversion or exchange will be set forth in the supplemental indenture, board resolution or officers' certificate related to that series of debt securities and will be described in the relevant prospectus supplement. The terms will include, among others, the following:

- the conversion or exchange price;
- the conversion or exchange period;
- provisions regarding our ability or the ability of the holder to convert or exchange the debt securities;
- events requiring adjustment to the conversion or exchange price; and
- provisions affecting conversion or exchange in the event of our redemption of the debt securities.

Merger, Consolidation or Sale of Assets

The indenture prohibits us from merging into or consolidating with any other person or selling, leasing or conveying substantially all of our assets and the assets of our subsidiaries, taken as a whole, to any person, unless:

- either we are the continuing corporation or the successor corporation or the person which acquires by sale, lease or conveyance substantially all our or our subsidiaries' assets is a corporation organized under the laws of the United States, any state thereof, or the District of Columbia, and expressly assumes the due and punctual payment of the principal of, and premium, if any, and interest, if any, on all the debt securities and the due performance of every covenant of the indenture to be performed or observed by us, by supplemental indenture satisfactory to the trustee, executed and delivered to the trustee by such corporation;
- immediately after giving effect to such transactions, no Event of Default described under the caption "Events of Default and Remedies" below or event which, after notice or lapse of time or both would become an Event of Default, has happened and is continuing; and
- we have delivered to the trustee an officers' certificate and an opinion of counsel each stating that such transaction and such supplemental indenture comply with the indenture provisions relating to merger, consolidation and sale of assets.

Upon any consolidation or merger with or into any other person or any sale, conveyance, lease, or other transfer of all or substantially all of our or our subsidiaries' assets to any person, the successor person shall succeed,

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and be substituted for, us under the indenture and each series of outstanding debt securities, and we shall be relieved of all obligations under the indenture and each series of outstanding debt securities to the extent we were the predecessor person.

Events of Default and Remedies

When we use the term “Event of Default” in the indenture with respect to the debt securities of any series, we mean:

- default in paying interest on the debt securities when it becomes due and the default continues for a period of 30 days or more;
- default in paying principal, or premium, if any, on the debt securities when due;
- default is made in the payment of any sinking or purchase fund or analogous obligation when the same becomes due, and such default continues for 30 days or more;
- default in the performance, or breach, of any covenant or warranty in the indenture (other than defaults specified in the first, second or third bullets above) and the default or breach continues for a period of 60 days or more after we receive written notice of such default from the trustee or we and the trustee receive notice from the holders of at least 25% in aggregate principal amount of the outstanding debt securities of the series;
- certain events of bankruptcy, insolvency, reorganization, administration or similar proceedings with respect to us have occurred; and
- any other Event of Default provided with respect to debt securities of that series that is set forth in the applicable prospectus supplement accompanying this prospectus.

No Event of Default with respect to a particular series of debt securities (except as to certain events of bankruptcy, insolvency or reorganization) necessarily constitutes an Event of Default with respect to any other series of debt securities. The occurrence of certain Events of Default or an acceleration under the indenture may constitute an event of default under certain of our other indebtedness that we may have outstanding from time to time. Unless otherwise provided by the terms of an applicable series of debt securities, if an Event of Default under the indenture occurs with respect to the debt securities of any series and is continuing, then the trustee or the holders of not less than 51% of the aggregate principal amount of the outstanding debt securities of that series may by written notice require us to repay immediately the entire principal amount of the outstanding debt securities of that series (or such lesser amount as may be provided in the terms of the securities), together with all accrued and unpaid interest and premium, if any. In the case of an Event of Default resulting from certain events of bankruptcy, insolvency or reorganization, the principal (or such specified amount) of and accrued and unpaid interest, if any, on all outstanding debt securities will become and be immediately due and payable without any declaration or other act on the part of the trustee or any holder of outstanding debt securities. We refer you to the prospectus supplement relating to any series of debt securities that are discount securities for the particular provisions relating to acceleration of a portion of the principal amount of such discount securities upon the occurrence of an Event of Default.

After a declaration of acceleration, the holders of a majority in aggregate principal amount of outstanding debt securities of any series may rescind this accelerated payment requirement if all existing Events of Default,

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except for nonpayment of the principal on the debt securities of that series that has become due solely as a result of the accelerated payment requirement, have been cured or waived and if the rescission of acceleration would not conflict with any judgment or decree. The holders of a majority in aggregate principal amount of the outstanding debt securities of any series also have the right to waive past defaults, except a default in paying principal or interest on any outstanding debt security, or in respect of a covenant or a provision that cannot be modified or amended without the consent of all holders of the debt securities of that series.

No holder of any debt security may seek to institute a proceeding with respect to the indenture unless such holder has previously given written notice to the trustee of a continuing Event of Default, the holders of not less than 51% in aggregate principal amount of the outstanding debt securities of the series have made a written request to the trustee to institute proceedings in respect of the Event of Default, the holder or holders have offered reasonable indemnity to the trustee and the trustee has failed to institute such proceeding within 60 days after it received this notice. In addition, within this 60-day period the trustee must not have received directions inconsistent with this written request by holders of a majority in aggregate principal amount of the outstanding debt securities of that series. These limitations do not apply, however, to a suit instituted by a holder of a debt security for the enforcement of the payment of principal, interest or any premium on or after the due dates for such payment.

During the existence of an Event of Default actually known to a responsible officer of the trustee, the trustee is required to exercise the rights and powers vested in it under the indenture and use the same degree of care and skill in its exercise as a prudent person would under the circumstances in the conduct of that person's own affairs. If an Event of Default has occurred and is continuing, the trustee is not under any obligation to exercise any of its rights or powers at the request or direction of any of the holders unless the holders have offered to the trustee security or indemnity reasonably satisfactory to the trustee. Subject to certain provisions, the holders of a majority in aggregate principal amount of the outstanding debt securities of any series 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.

The trustee will, within 90 days after receiving notice of any default, give notice of the default to the holders of the debt securities of that series, unless the default was already cured or waived. Unless there is a default in paying principal, interest or any premium when due, the trustee can withhold giving notice to the holders if it determines in good faith that the withholding of notice is in the interest of the holders. In the case of a default specified in the fourth bullet above describing Events of Default, no notice of default to the holders of the debt securities of that series will be given until 60 days after the occurrence of the event of default.

The indenture requires us, within 120 days after the end of our fiscal year, to furnish to the trustee a statement as to compliance with the indenture. The indenture provides that the trustee may withhold notice to the holders of debt securities of any series of any Event of Default (except in payment on any debt securities of that series) with respect to debt securities of that series if it in good faith determines that withholding notice is in the interest of the holders of those debt securities.

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Modification and Waiver

The indenture may be amended or modified without the consent of any holder of debt securities in order to:

- evidence a successor to the trustee;
- cure ambiguities, defects or inconsistencies;
- provide for the assumption of our obligations in the case of a merger or consolidation or transfer of all or substantially all of our assets that complies with the covenant described under “- Merger, Consolidation or Sale of Assets”;
- make any change that would provide any additional rights or benefits to the holders of the debt securities of a series;
- add guarantors or co-obligors with respect to the debt securities of any series;
- secure the debt securities of a series;
- establish the form or forms of debt securities of any series;
- add additional Events of Default with respect to the debt securities of any series;
- add additional provisions as may be expressly permitted by the Trust Indenture Act;
- maintain the qualification of the indenture under the Trust Indenture Act; or
- make any change that does not adversely affect in any material respect the interests of any holder.

Other amendments and modifications of the indenture or the debt securities issued may be made with the consent of the holders of not less than a majority in aggregate principal amount of the outstanding debt securities of each series affected by the amendment or modification. However, no modification or amendment may, without the consent of the holder of each outstanding debt security affected:

- change the maturity date or the stated payment date of any payment of premium or interest payable on the debt securities;
- reduce the principal amount, or extend the fixed maturity, of the debt securities;
- change the method of computing the amount of principal or any interest of any debt security;
- change or waive the redemption or repayment provisions of the debt securities;
- change the currency in which principal, any premium or interest is paid or the place of payment;
- reduce the percentage in principal amount outstanding of debt securities of any series which must consent to an amendment, supplement or waiver or consent to take any action;
- impair the right to institute suit for the enforcement of any payment on the debt securities;
- waive a payment default with respect to the debt securities;
- reduce the interest rate or extend the time for payment of interest on the debt securities;
- adversely affect the ranking or priority of the debt securities of any series; or
- release any guarantor or co-obligor from any of its obligations under its guarantee or the indenture, except in compliance with the terms of the indenture.

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Satisfaction, Discharge and Covenant Defeasance

We may terminate our obligations under the indenture with respect to the outstanding debt securities of any series, when:

- either:
 - all debt securities of any series issued that have been authenticated and delivered have been delivered to the trustee for cancellation; or
 - all the debt securities of any series issued that have not been delivered to the trustee for cancellation have become due and payable, will become due and payable within one year, or are to be called for redemption within one year and we have made arrangements satisfactory to the trustee for the giving of notice of redemption by such trustee in our name and at our expense, and in each case, we have irrevocably deposited or caused to be deposited with the trustee sufficient funds to pay and discharge the entire indebtedness on the series of debt securities; and
- we have paid or caused to be paid all other sums then due and payable under the indenture; and
- we have delivered to the trustee an officers' certificate and an opinion of counsel, each stating that all conditions precedent under the indenture relating to the satisfaction and discharge of the indenture have been complied with.

We may elect to have our obligations under the indenture discharged with respect to the outstanding debt securities of any series ("legal defeasance"). Legal defeasance means that we will be deemed to have paid and discharged the entire indebtedness represented by the outstanding debt securities of such series under the indenture, except for:

- the rights of holders of the debt securities to receive principal, interest and any premium when due;
- our obligations with respect to the debt securities concerning issuing temporary debt securities, registration of transfer of debt securities, mutilated, destroyed, lost or stolen debt securities and the maintenance of an office or agency for payment for security payments held in trust;
- the rights, powers, trusts, duties and immunities of the trustee; and
- the defeasance provisions of the indenture.

In addition, we may elect to have our obligations released with respect to certain covenants in the indenture ("covenant defeasance"). If we so elect, any failure to comply with these obligations will not constitute a default or an event of default with respect to the debt securities of any series. In the event covenant defeasance occurs, certain events, not including non-payment, bankruptcy and insolvency events, described under "Events of Default and Remedies," will no longer constitute an event of default for that series.

In order to exercise either legal defeasance or covenant defeasance with respect to outstanding debt securities of any series:

- we must irrevocably have deposited or caused to be deposited with the trustee as trust funds for the purpose of making the following payments, specifically pledged as security for, and dedicated solely to the benefits of the holders of the debt securities of a series:
 - money in an amount; or

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- U.S. government obligations (or equivalent government obligations in the case of debt securities denominated in other than U.S. dollars or a specified currency) that will provide, not later than one day before the due date of any payment, money in an amount; or
- a combination of money and U.S. government obligations (or equivalent government obligations, as applicable),
- in each case sufficient, in the written opinion (with respect to U.S. or equivalent government obligations or a combination of money and U.S. or equivalent government obligations, as applicable) of a nationally recognized firm of independent public accountants to pay and discharge, and which shall be applied by the trustee to pay and discharge, all of the principal (including mandatory sinking fund payments), interest and any premium at due date or maturity;
- in the case of legal defeasance, we have delivered to the trustee an opinion of counsel stating that, under then applicable federal income tax law, the holders of the debt securities of that series will not recognize income, gain or loss for federal income tax purposes as a result of the deposit, defeasance and discharge to be effected and will be subject to the same federal income tax as would be the case if the deposit, defeasance and discharge did not occur;
- in the case of covenant defeasance, we have delivered to the trustee an opinion of counsel to the effect that the holders of the debt securities of that series will not recognize income, gain or loss for federal income tax purposes as a result of the deposit and covenant defeasance to be effected and will be subject to the same federal income tax as would be the case if the deposit and covenant defeasance did not occur;
- no event of default or default with respect to the outstanding debt securities of that series has occurred and is continuing at the time of such deposit after giving effect to the deposit or, in the case of legal defeasance, no default relating to bankruptcy or insolvency has occurred and is continuing at any time on or before the 91st day after the date of such deposit, it being understood that this condition is not deemed satisfied until after the 91st day;
- the legal defeasance or covenant defeasance will not cause the trustee to have a conflicting interest within the meaning of the Trust Indenture Act, assuming all debt securities of a series were in default within the meaning of such Act;
- the legal defeasance or covenant defeasance will not result in a breach or violation of, or constitute a default under, any other agreement or instrument to which we are a party;
- if prior to the stated maturity date, notice shall have been given in accordance with the provisions of the indenture;
- the legal defeasance or covenant defeasance will not result in the trust arising from such deposit constituting an investment company within the meaning of the Investment Company Act of 1940, as amended, unless the trust is registered under such Act or exempt from registration; and
- we have delivered to the trustee an officers' certificate and an opinion of counsel stating that all conditions precedent with respect to the legal defeasance or covenant defeasance have been complied with.

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Covenants

We will set forth in the applicable prospectus supplement any restrictive covenants applicable to any issue of debt securities.

Paying Agent and Registrar

The trustee will initially act as paying agent and registrar for all debt securities. We may change the paying agent or registrar for any series of debt securities without prior notice, and we or any of our subsidiaries may act as paying agent or registrar.

Forms of Securities

Each debt security will be represented either by a certificate issued in definitive form to a particular investor or by one or more global securities representing the entire issuance of the series of debt securities. Certificated securities will be issued in definitive form and global securities will be issued in registered form. Definitive securities name you or your nominee as the owner of the security, and in order to transfer or exchange these securities or to receive payments other than interest or other interim payments, you or your nominee must physically deliver the securities to the trustee, registrar, paying agent or other agent, as applicable. Global securities name a depositary or its nominee as the owner of the debt securities represented by these global securities. The depositary maintains a computerized system that will reflect each investor's beneficial ownership of the securities through an account maintained by the investor with its broker/dealer, bank, trust company or other representative, as we explain more fully below.

Global Securities

We may issue the registered debt securities in the form of one or more fully registered global securities that will be deposited with a depositary or its custodian identified in the applicable prospectus supplement and registered in the name of that depositary or its nominee. In those cases, one or more registered global securities will be issued in a denomination or aggregate denominations equal to the portion of the aggregate principal or face amount of the securities to be represented by registered global securities. Unless and until it is exchanged in whole for securities in definitive registered form, a registered global security may not be transferred except as a whole by and among the depositary for the registered global security, the nominees of the depositary or any successors of the depositary or those nominees.

If not described below, any specific terms of the depositary arrangement with respect to any securities to be represented by a registered global security will be described in the prospectus supplement relating to those securities. We anticipate that the following provisions will apply to all depositary arrangements.

Ownership of beneficial interests in a registered global security will be limited to persons, called participants, that have accounts with the depositary or persons that may hold interests through participants. Upon the

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issuance of a registered global security, the depositary will credit, on its book-entry registration and transfer system, the participants' accounts with the respective principal or face amounts of the securities beneficially owned by the participants. Any dealers, underwriters or agents participating in the distribution of the securities will designate the accounts to be credited. Ownership of beneficial interests in a registered global security will be shown on, and the transfer of ownership interests will be effected only through, records maintained by the depositary, with respect to interests of participants, and on the records of participants, with respect to interests of persons holding through participants. The laws of some states may require that some purchasers of securities take physical delivery of these securities in definitive form. These laws may impair your ability to own, transfer or pledge beneficial interests in registered global securities.

So long as the depositary, or its nominee, is the registered owner of a registered global security, that depositary or its nominee, as the case may be, will be considered the sole owner or holder of the securities represented by the registered global security for all purposes under the indenture. Except as described below, owners of beneficial interests in a registered global security will not be entitled to have the securities represented by the registered global security registered in their names, will not receive or be entitled to receive physical delivery of the securities in definitive form and will not be considered the owners or holders of the securities under the indenture. Accordingly, each person owning a beneficial interest in a registered global security must rely on the procedures of the depositary for that registered global security and, if that person is not a participant, on the procedures of the participant through which the person owns its interest, to exercise any rights of a holder under the indenture. We understand that under existing industry practices, if we request any action of holders or if an owner of a beneficial interest in a registered global security desires to give or take any action that a holder is entitled to give or take under the indenture, the depositary for the registered global security would authorize the participants holding the relevant beneficial interests to give or take that action, and the participants would authorize beneficial owners owning through them to give or take that action or would otherwise act upon the instructions of beneficial owners holding through them.

Principal, premium, if any, and interest payments on debt securities represented by a registered global security registered in the name of a depositary or its nominee will be made to the depositary or its nominee, as the case may be, as the registered owner of the registered global security. Neither we nor the trustee or any other agent of ours or the trustee will have any responsibility or liability for any aspect of the records relating to payments made on account of beneficial ownership interests in the registered global security or for maintaining, supervising or reviewing any records relating to those beneficial ownership interests.

We expect that the depositary for any of the securities represented by a registered global security, upon receipt of any payment of principal, premium, interest or other distribution of underlying securities or other property to holders on that registered global security, will immediately credit participants' accounts in amounts proportionate to their respective beneficial interests in that registered global security as shown on the records of the depositary. We also expect that payments by participants to owners of beneficial interests in a registered global security held through participants will be governed by standing customer instructions and customary practices, as is now the case with the securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of those participants.

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If the depository for any of these securities represented by a registered global security is at any time unwilling or unable to continue as depository or ceases to be a clearing agency registered under the Exchange Act, and a successor depository registered as a clearing agency under the Exchange Act is not appointed by us within 90 days, we will issue securities in definitive form in exchange for the registered global security that had been held by the depository. Any securities issued in definitive form in exchange for a registered global security will be registered in the name or names that the depository gives to the trustee or other relevant agent of ours or theirs. It is expected that the depository's instructions will be based upon directions received by the depository from participants with respect to ownership of beneficial interests in the registered global security that had been held by the depository.

Unless we state otherwise in a prospectus supplement, the Depository Trust Company ("DTC") will act as depository for each series of debt securities issued as global securities. DTC has advised us that DTC is a limited-purpose trust company created to hold securities for its participating organizations (collectively, the "Participants") and to facilitate the clearance and settlement of transactions in those securities between Participants through electronic book-entry changes in accounts of its Participants. The Participants include securities brokers and dealers, banks, trust companies, clearing corporations and certain other organizations. Access to DTC's system is also available to other entities such as banks, brokers, dealers and trust companies that clear through or maintain a custodial relationship with a Participant, either directly or indirectly (collectively, the "Indirect Participants"). Persons who are not Participants may beneficially own securities held by or on behalf of DTC only through the Participants or the Indirect Participants. The ownership interests in, and transfers of ownership interests in, each security held by or on behalf of DTC are recorded on the records of the Participants and the Indirect Participants.

Concerning the Trustee

The indenture provides that there may be more than one trustee under the indenture, each for one or more series of debt securities. If there are different trustees for different series of debt securities, each trustee will be a trustee of a trust under the indenture separate and apart from the trust administered by any other trustee under that indenture. Except as otherwise indicated in this prospectus or any prospectus supplement, any action permitted to be taken by a trustee may be taken by such trustee only on the one or more series of debt securities for which it is the trustee under the indenture. Any trustee under the indenture may resign or be removed from one or more series of debt securities. All payments of principal of, and any premium and interest on, and all registration, transfer, exchange, authentication and delivery of, the debt securities of a series will be effected by the trustee for that series at an office designated by the trustee in New York, New York.

Governing Law

The indenture and each series of debt securities are governed by, and construed in accordance with, the laws of the State of New York.

DESCRIPTION OF UNITS

We may issue units comprised of one or more of the other securities described in this prospectus in any combination. 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 (but, to the extent convertible securities are included in the units, the holder of the units will be deemed the holder of the convertible securities and not the holder of the underlying securities). The unit agreement under which a unit is issued, if any, 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. The applicable prospectus supplement may describe:

- 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 for the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units;
- the terms of the unit agreement governing the units;
- United States federal income tax considerations relevant to the units; and
- whether the units will be issued in fully registered global form.

This summary of certain general terms of units and any summary description of units in the applicable prospectus supplement do not purport to be complete and are qualified in their entirety by reference to all provisions of the applicable unit agreement and, if applicable, collateral arrangements and depositary arrangements relating to such units. The forms of the unit agreements and other documents relating to a particular issue of units will be filed with the SEC each time we issue units, and you should read those documents for provisions that may be important to you.

PLAN OF DISTRIBUTION

Initial Offering and Sale of Securities

Unless otherwise set forth in a prospectus supplement accompanying this prospectus, we, and certain holders of our securities, may sell the securities being offered hereby, from time to time, by one or more of the following methods:

- to or through underwriting syndicates represented by managing underwriters;
- through one or more underwriters without a syndicate for them to offer and sell to the public;
- through dealers or agents; and
- to investors directly in negotiated sales or in competitively bid transactions.

Offerings of securities covered by this prospectus also may be made into an existing trading market for those securities in transactions at other than a fixed price, either:

- on or through the facilities of the Nasdaq or any other securities exchange or quotation or trading service on which those securities may be listed, quoted, or traded at the time of sale; and/or
- to or through a market maker otherwise than on the securities exchanges or quotation or trading services set forth above.

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Those at-the-market offerings, if any, will be conducted by underwriters acting as principal or agent of the Company, who may also be third-party sellers of securities as described above. The prospectus supplement with respect to the offered securities will set forth the terms of the offering of the offered securities, including:

- the name or names of any underwriters, dealers or agents;
- the purchase price of the offered securities and the proceeds to us from such sale;
- any underwriting discounts and commissions or agency fees and other items constituting underwriters' or agents' compensation;
- any initial public offering price and any discounts or concessions allowed or reallocated or paid to dealers;
- any securities exchange on which such offered securities may be listed; and
- any underwriter, agent or dealer involved in the offer and sale of any series of the securities will be named in the prospectus supplement.

The distribution of the securities may be effected from time to time in one or more transactions:

- at fixed prices, which may be changed;
- at market prices prevailing at the time of the sale;
- at varying prices determined at the time of sale; or
- at negotiated prices.

Each prospectus supplement will set forth the manner and terms of an offering of securities including:

- whether that offering is being made by us, or certain holders of our securities;
- whether that offering is being made to underwriters or through agents or directly;
- the rules and procedures for any auction or bidding process, if used;
- the securities' purchase price or initial public offering price; and
- the proceeds we anticipate from the sale of the securities, if any.

In addition, we may enter into derivative or hedging transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement indicates, in connection with such a transaction, the third parties may sell securities covered by and pursuant to this prospectus and an applicable prospectus supplement. If so, the third party may use securities pledged by us or borrowed from us or others to settle such sales and may use securities received from us to close out any related short positions. We may also loan or pledge securities covered by this prospectus and an applicable prospectus supplement to third parties, who may sell the loaned securities or, in an event of default in the case of a pledge, sell the pledged securities pursuant to this prospectus and the applicable prospectus supplement.

Sales Through Underwriters

If underwriters are used in the sale of some or all of the securities covered by this prospectus, the underwriters will acquire the securities for their own account. The underwriters may resell the securities, either directly to the public or to securities dealers, at various times in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. The obligations of the underwriters to purchase the securities will be subject to certain conditions. Unless indicated otherwise in a prospectus supplement, the underwriters will be obligated to purchase all the securities of the series offered if any of the securities are purchased.

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Any initial public offering price and any concessions allowed or reallocated to dealers may be changed intermittently.

Sales Through Agents

Unless otherwise indicated in the applicable prospectus supplement, when securities are sold through an agent, the designated agent will agree, for the period of its appointment as agent, to use its best efforts to sell the securities for our account and will receive commissions from us as will be set forth in the applicable prospectus supplement.

Securities bought in accordance with a redemption or repayment under their terms also may be offered and sold, if so indicated in the applicable prospectus supplement, in connection with a remarketing by one or more firms acting as principals for their own accounts or as agents for us. Any remarketing firm will be identified and the terms of its agreement, if any, with us and its compensation will be described in the prospectus supplement. Remarketing firms may be deemed to be underwriters in connection with the securities remarketed by them.

If so indicated in the applicable prospectus supplement, we may authorize agents, underwriters or dealers to solicit offers by certain specified institutions to purchase securities at a price set forth in the prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on a future date specified in the prospectus supplement. These contracts will be subject only to those conditions set forth in the applicable prospectus supplement, and the prospectus supplement will set forth the commissions payable for solicitation of these contracts.

Direct Sales

We may also sell offered securities directly to institutional investors or others. In this case, no underwriters or agents would be involved. The terms of such sales will be described in the applicable prospectus supplement.

General Information

Broker-dealers, agents or underwriters may receive compensation in the form of discounts, concessions or commissions from us and/or the purchasers of securities for whom such broker-dealers, agents or underwriters may act as agents or to whom they sell as principal, or both (this compensation to a particular broker-dealer might be in excess of customary commissions).

Underwriters, dealers and agents that participate in any distribution of the offered securities may be deemed “underwriters” within the meaning of the Securities Act, so any discounts or commissions they receive in connection with the distribution may be deemed to be underwriting compensation. Those underwriters and agents may be entitled, under their agreements with us, to indemnification by us against certain civil liabilities, including liabilities under the Securities Act, or to contribution by us to payments that they may be required to make in respect of those civil liabilities. Certain of those underwriters or agents may be customers of, engage in transactions with, or perform services for, us or our affiliates in the ordinary course of business. We will identify any underwriters or agents, and describe their compensation, in a prospectus supplement. Any institutional investors or others that purchase offered

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securities directly, and then resell the securities, may be deemed to be underwriters, and any discounts or commissions received by them from us and any profit on the resale of the securities by them may be deemed to be underwriting discounts and commissions under the Securities Act.

We will file a supplement to this prospectus, if required, pursuant to Rule 424(b) under the Securities Act, if we enter into any material arrangement with a broker, dealer, agent or underwriter for the sale of securities through a block trade, special offering, exchange distribution or secondary distribution or a purchase by a broker or dealer. Such prospectus supplement will disclose:

- the name of any participating broker, dealer, agent or underwriter;
- the number and type of securities involved;
- the price at which such securities were sold;
- any securities exchanges on which such securities may be listed;
- the commissions paid or discounts or concessions allowed to any such broker, dealer, agent or underwriter where applicable; and
- other facts material to the transaction.

In order to facilitate the offering of certain securities under this prospectus or an applicable prospectus supplement, certain persons participating in the offering of those securities may engage in transactions that stabilize, maintain or otherwise affect the price of those securities during and after the offering of those securities. Specifically, if the applicable prospectus supplement permits, the underwriters of those securities may over-allot or otherwise create a short position in those securities for their own account by selling more of those securities than have been sold to them by us and may elect to cover any such short position by purchasing those securities in the open market.

In addition, the underwriters may stabilize or maintain the price of those securities by bidding for or purchasing those securities in the open market and may impose penalty bids, under which selling concessions allowed to syndicate members or other broker-dealers participating in the offering are reclaimed if securities previously distributed in the offering are repurchased in connection with stabilization transactions or otherwise. The effect of these transactions may be to stabilize or maintain the market price of the securities at a level above that which might otherwise prevail in the open market. The imposition of a penalty bid may also affect the price of securities to the extent that it discourages resales of the securities. No representation is made as to the magnitude or effect of any such stabilization or other transactions. Such transactions, if commenced, may be discontinued at any time.

In order to comply with the securities laws of certain states, if applicable, the securities must be sold in such jurisdictions only through registered or licensed brokers or dealers. In addition, in certain states the securities may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

Rule 15c6-1 under the Securities Exchange Act of 1934 generally requires that trades in the secondary market settle in three business days, unless the parties to any such trade expressly agree otherwise. Your prospectus supplement may provide that the original issue date for your securities may be more than three scheduled business

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days after the trade date for your securities. Accordingly, in such a case, if you wish to trade securities on any date prior to the third business day before the original issue date for your securities, you will be required, by virtue of the fact that your securities initially are expected to settle in more than three scheduled business days after the trade date for your securities, to make alternative settlement arrangements to prevent a failed settlement.

This prospectus, any applicable prospectus supplement and any applicable pricing supplement in electronic format may be made available on the Internet sites of, or through other online services maintained by, us and/or one or more of the agents and/or dealers participating in an offering of securities, or by their affiliates. In those cases, prospective investors may be able to view offering terms online and, depending upon the particular agent or dealer, prospective investors may be allowed to place orders online.

Other than this prospectus, any applicable prospectus supplement and any applicable pricing supplement in electronic format, the information on our or any agent's or dealer's website and any information contained in any other website maintained by any agent or dealer:

- is not part of this prospectus, any applicable prospectus supplement and any applicable pricing supplement or the registration statement of which they form a part;
- has not been approved or endorsed by us or by any agent or dealer in its capacity as an agent or dealer, except, in each case, with respect to the respective website maintained by such entity; and
- should not be relied upon by investors.

There can be no assurance that we will sell all or any of the securities offered by this prospectus.

This prospectus may also be used in connection with any issuance of common stock or preferred stock upon exercise of a warrant if such issuance is not exempt from the registration requirements of the Securities Act.

In addition, we may issue the securities as a dividend or distribution or in a subscription rights offering to our existing security holders. In some cases, we or dealers acting with us or on our behalf may also purchase securities and reoffer them to the public by one or more of the methods described above. This prospectus may be used in connection with any offering of our securities through any of these methods or other methods described in the applicable prospectus supplement.

LEGAL MATTERS

Unless otherwise indicated in the applicable prospectus supplement, the validity of the securities offered hereby will be passed upon for us by Lowenstein Sandler LLP, New York, New York. If the validity of the securities offered hereby in connection with offerings made pursuant to this prospectus are passed upon by counsel for the underwriters, dealers or agents, if any, such counsel will be named in the prospectus supplement relating to such offering.

EXPERTS

The consolidated financial statements of Corbus Pharmaceuticals Holdings, Inc. and subsidiaries as of December 31, 2014 and 2013, and for each of the years then ended, have been audited by EisnerAmper LLP, an independent registered public accounting firm as stated in their report dated February 10, 2015 which is incorporated herein by reference. Such consolidated financial statements have been incorporated herein by reference in reliance on the report of such firm, given upon their authority as experts in auditing and accounting.

**DISCLOSURE OF COMMISSION POSITION
ON INDEMNIFICATION FOR SECURITIES ACT LIABILITIES**

Section 145 of the DGCL provides that we may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal or investigative (other than an action by us or in our right) by reason of the fact that he is or was our director, officer, employee or agent, or is or was serving at our request as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by him or her in connection with such action, suit or proceeding if he acted in good faith and in a manner he or she reasonably believed to be in or not opposed to our best interests, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful. Section 145 further provides that we similarly may indemnify any such person serving in any such capacity who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by us or in our right to procure judgment in our favor, against expenses actually and reasonably incurred in connection with the defense or settlement of such action or suit if he or she acted in good faith and in a manner he reasonably believed to be in or not opposed to our best interests and except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to us unless and only to the extent that the Delaware Court of Chancery or such other court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

Our certificate of incorporation, as amended, limits the liability of our directors to the fullest extent permitted by Delaware law. In addition, we have entered into indemnification agreements with certain of our directors and officers whereby we have agreed to indemnify those directors and officers to the fullest extent permitted by law, including indemnification against expenses and liabilities incurred in legal proceedings to which the director or officer was, or is threatened to be made, a party by reason of the fact that such director or officer is or was a director, officer, employee or agent of the Company, provided that such director or officer acted in good faith and in a manner that the director or officer reasonably believed to be in, or not opposed to, the best interests of the Company.

We have director and officer liability insurance to cover liabilities our directors and officers may incur in connection with their services to us, including matters arising under the Securities Act. Our certificate of incorporation and bylaws also provide that we will indemnify our directors and officers who, by reason of the fact that he or she is one of our officers or directors of our company, is involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative related to their board role with the company.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers and controlling persons pursuant to the foregoing provisions, or otherwise, we have been advised that in the

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opinion of the SEC 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, we will, unless in the opinion of our counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by us is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

ADDITIONAL INFORMATION

This prospectus is part of a Registration Statement on Form S-3 that we have filed with the SEC relating to the shares of our securities being offered hereby. This prospectus does not contain all of the information in the Registration Statement and its exhibits. The Registration Statement, its exhibits and the documents incorporated by reference in this prospectus and their exhibits, all contain information that is material to the offering of the Securities hereby. Whenever a reference is made in this prospectus to any of our contracts or other documents, the reference may not be complete. You should refer to the exhibits that are a part of the Registration Statement in order to review a copy of the contract or documents. The Registration Statement and the exhibits are available at the SEC's Public Reference Room or through its Website.

We file annual, quarterly and current reports, proxy statements and other information with the SEC. You can read and copy any materials we file with the SEC at its Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549 and at its regional offices, a list of which is available on the Internet at <http://www.sec.gov/contact/addresses.htm>. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC maintains an Internet site at <http://www.sec.gov> that contains reports, proxy and information statements, and other information regarding issuers, such as us, that file electronically with the SEC. Additionally, you may access our filings with the SEC through our website at <http://www.corbuspharma.com>. The information on our website is not part of this prospectus.

We will provide you without charge, upon your oral or written request, with a copy of any or all reports, proxy statements and other documents we file with the SEC, as well as any or all of the documents incorporated by reference in this prospectus or the registration statement (other than exhibits to such documents unless such exhibits are specifically incorporated by reference into such documents). Requests for such copies should be directed to:

Corbus Pharmaceuticals Holdings, Inc.
100 River Ridge Drive
Norwood, MA 02062
Telephone number: (617) 963-0100

You should rely only on the information in this prospectus and the additional information described above and under the heading "Incorporation of Certain Information by Reference" below. We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely upon it. We are not making an offer to sell these securities in any jurisdiction where

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the offer or sale is not permitted. You should assume that the information in this prospectus was accurate on the date of the front cover of this prospectus only. Our business, financial condition, results of operations and prospects may have changed since that date.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

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

We incorporate by reference the documents listed below that we have previously filed with the SEC:

- our Annual Report on Form 10-K for the fiscal year ended December 31, 2014, filed with the SEC on February 10, 2015;
- our Quarterly Reports on Form 10-Q for the fiscal quarters ended March 31, 2015, filed with the SEC on May 13, 2015, June 30, 2015, filed with the SEC on August 13, 2015, and September 30, 2015, filed with the SEC on November 10, 2015;
- our Proxy Statement on Schedule 14A filed with the SEC on April 28, 2015;
- our Current Reports on Form 8-K filed with the SEC on January 5, 2015, April 2, 2015, April 16, 2015, April 22, 2015, May 29, 2015, July 27, 2015 and August 27, 2015; and
- the description of our common stock contained in our Registration Statement on Form 8-A, filed on April 14, 2015, including any amendments thereto or reports filed for the purposes of updating this description.

All reports and other documents that we file with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus but before the termination of the offering of the securities hereunder will also be considered to be incorporated by reference into this prospectus from the date of the filing of these reports and documents, and will supersede the information herein; provided, however, that all reports, exhibits and other information that we “furnish” to the SEC will not be considered incorporated by reference into this prospectus. We undertake to provide without charge to each person (including any beneficial owner) who receives a copy of this prospectus, upon written or oral request, a copy of all of the preceding documents that are incorporated by reference (other than exhibits, unless the exhibits are specifically incorporated by reference into these documents). You may request a copy of these materials in the manner set forth under the heading “Additional Information,” above.

\$100,000,000

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



PROSPECTUS

, 2015

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution

The following table sets forth the costs and expenses payable by Corbus in connection with the sale of common stock being registered. All amounts are estimates except the SEC registration fee (which has previously been paid).

SEC Registration Fee	\$10,070
FINRA Filing Fee	10,500*
Legal Fees and Expenses	10,000*
Accounting Fees and Expenses	5,000*
Printing and Engraving	2,000*
Miscellaneous	380*
Total:	37,950*

* Estimated

Item 15. Indemnification of Directors and Officers

The Delaware General Corporation Law authorizes corporations to limit or eliminate, subject to certain conditions, the personal liability of directors to corporations and their stockholders for monetary damages for breach of their fiduciary duties. Our certificate of incorporation, as amended, limits the liability of our directors to the fullest extent permitted by Delaware law. In addition, we have entered into indemnification agreements with certain of our directors and officers whereby we have agreed to indemnify those directors and officers to the fullest extent permitted by law, including indemnification against expenses and liabilities incurred in legal proceedings to which the director or officer was, or is threatened to be made, a party by reason of the fact that such director or officer is or was a director, officer, employee or agent of the Company, provided that such director or officer acted in good faith and in a manner that the director or officer reasonably believed to be in, or not opposed to, the best interests of the Company.

We have director and officer liability insurance to cover liabilities our directors and officers may incur in connection with their services to us, including matters arising under the Securities Act. Our certificate of incorporation, as amended, and bylaws also provide that we will indemnify our directors and officers who, by reason of the fact that he or she is one of our officers or directors of our company, is involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative related to their board role with the company.

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Item 16. Exhibits

<u>Exhibit No.</u>	<u>Description</u>
1.1	Form of Underwriting Agreement.**
3.1	Certificate of Incorporation (incorporated herein by reference to Exhibit 3.1 to our Registration Statement on Form S-1 filed with the SEC on September 3, 2014).
3.2	Certificate of Amendment to the Certificate of Incorporation (incorporated herein by reference to Exhibit 3.2 to our Registration Statement on Form S-1 filed with the SEC on September 3, 2014).
3.3	Bylaws (incorporated herein by reference to Exhibit 3.3 to our Registration Statement on Form S-1 filed with the SEC on September 3, 2014).
4.1	Specimen Common Stock Certificate, \$0.0001 par value (incorporated herein by reference to Exhibit 4.4 to our Registration Statement on Form S-8 filed with the SEC on November 18, 2014).
4.2	Specimen Preferred Stock Certificate.**
4.3	Form of Warrant Agreement and Warrant Certificate.**
4.4	Specimen Debt Security.**
4.5	Form of Trust Indenture.*
5.1	Legal opinion of Lowenstein Sandler LLP.*
23.1	Consent of EisnerAmper LLP.*
23.2	Consent of Lowenstein Sandler LLP (included in Exhibit 5.1).*
24.1	Power of Attorney (included on the signature page).*

* Filed herewith.

** To be filed, if applicable, by amendment or by a report filed under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, and incorporated herein by reference.

Item 17. Undertakings

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:

(a) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933,

(b) 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 Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement,

(c) 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 (1)(a), (1)(b) and (1)(c) above do not apply if the registration statement is on Form S-3 and 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 Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

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(2) That, for the purpose of determining any liability under the Securities Act of 1933, 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 of 1933 to any purchaser:

(a) If the Registrant is relying on Rule 430B:

- (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 of 1933 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.

(b) If the Registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be a part of and included in the registration statement as of the date it is first used after effectiveness. 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 first use, 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 date of first use.

(6) That, for the purpose of determining liability of the Registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the Registrant undertakes that in a primary offering of securities of the 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 communications, the 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 Registrant relating to the offering required to be filed pursuant to Rule 424;

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

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

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

(7) That, for purposes of determining any liability under the Securities Act of 1933, each filing of the Registrant's annual report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) 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.

(8) The undersigned hereby undertakes 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 Act.

(9) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the Registrant pursuant to the forgoing 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 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 Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, 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 Norwood, Commonwealth of Massachusetts, on this 10th day of November, 2015.

CORBUS PHARMACEUTICALS HOLDINGS, INC.

By: /s/ Yuval Cohen
Yuval Cohen, Ph.D.
Chief Executive Officer (Principal Executive Officer)

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Yuval Cohen and Sean Moran, and each of them, each with full power to act without the other, his true and lawful attorneys-in-fact and agents, each with full power of substitution and resubstitution, for such person and in his name, place and stead, in any and all capacities, to sign any amendments to this Registration Statement, and to sign any registration statement for the same offering covered by this Registration Statement, including post-effective amendments or registration statements filed pursuant to Rule 462(b) under the Securities Act of 1933, and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming that each of said such attorneys-in-fact and agents or his substitute or substitutes, may do or cause to be done by virtue hereof.

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

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Yuval Cohen</u> Yuval Cohen, Ph. D.	Chief Executive Officer and Director (Principal Executive Officer)	November 10, 2015
<u>/s/ Sean Moran</u> Sean Moran	Chief Financial Officer (Principal Financial and Accounting Officer)	November 10, 2015
<u>/s/ Alan Holmer</u> Alan Holmer	Director	November 10, 2015
<u>/s/ David Hochman</u> David Hochman	Director	November 10, 2015
<u>/s/ Renu Gupta</u> Renu Gupta, M.D.	Director	November 10, 2015
<u>/s/ Avery W. Catlin</u> Avery W. Catlin	Director	November 10, 2015

FORM OF TRUST INDENTURE
CORBUS PHARMACEUTICALS HOLDINGS, INC.

and

, as Trustee

INDENTURE

Dated as of , 20

Providing for the Issuance of Debt Securities

CROSS-REFERENCE TABLE*

<u>Trust Indenture Act Section</u>	<u>Indenture Section</u>
310 (a)(1)	N.A.
(a)(2)	6.13
(a)(3)	6.13
(a)(4)	N.A.
(a)(5)	7.01
(b)	7.02
(c)	7.02
311 (a)	7.03
(b)	7.03
(c)	7.03
312 (a)	7.03
(b)	7.04; 1.02
(c)	1.02
313 (a)	1.02
(b)(2)	N.A.
(c)	1.02
(d)	N.A.
314 (a)	6.01
(c)(1)	6.02; 1.06
(c)(2)	6.01
(c)(3)	6.01
(e)	5.14
(f)	1.01
315 (a)	5.12
(b)	5.02
(c)	N.A.
(d)	5.08
(e)	3.07
316 (a)(last sentence)	5.03
(a)(1)(A)	5.04
(a)(1)(B)	4.06
(a)(2)	1.07
(b)	N.A.
(c)	1.07

N.A. means not applicable

* This Cross-Reference Table is not part of the Indenture.

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THIS INDENTURE, between Corbus Pharmaceuticals Holdings, Inc., a Delaware corporation (hereinafter called the “**Company**”) having its principal office at 100 River Ridge Drive, Norwood MA, 02062, and, [], a [] as trustee (hereinafter called the “**Trustee**”), is made and entered into as of this [] day of [], 20[].

Recitals of the Company

The Company has duly authorized the execution and delivery of this Indenture to provide for the issuance of its unsecured debentures, notes, bonds, and other evidences of indebtedness, to be issued in one or more fully registered series.

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

Agreements of the Parties

To set forth or to provide for the establishment of the terms and conditions upon which the Securities (as hereinafter defined) are and are to be authenticated, issued, and delivered, and in consideration of the premises thereof, and the purchase of Securities by the Holders (as hereinafter defined) thereof, it is mutually covenanted and agreed as follows, for the equal and proportionate benefit of all Holders from time to time of the Securities or of any series thereof, as the case may be:

ARTICLE I DEFINITIONS AND OTHER PROVISIONS OF GENERAL APPLICATION

Section 1.01 Definitions. For all purposes of this Indenture and of any indenture supplemental hereto, except as otherwise expressly provided or unless the context otherwise requires:

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

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

(c) 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 term “generally accepted accounting principles” with respect to any computation required or permitted hereunder shall mean such accounting principles as are generally accepted in the United States of America at the date of such computation; and

(d) all references in this instrument to designated “Articles”, “Sections” and other subdivisions are to the designated Articles, Sections and other subdivisions of this instrument as originally executed. The words “herein”, “hereof”, 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.

(e) the following terms will have the meanings set forth below:

“**Act**”, when used with respect to any Securityholder (as hereinafter defined), has the meaning specified in Section 1.04.

“**Affiliate**” of any specified Person (as hereinafter defined) 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 meanings correlative to the foregoing.

“**Authenticating Agent**” means any Person authorized by the Trustee to authenticate Securities of one or more series under Section 6.14.

“**Authentication Order**” has the meaning specified in Section 3.03.

“**Board of Directors**” means (i) the board of directors of the Company, (ii) any duly authorized committee of that board, or (iii) any officer, director, or authorized representative of the Company, in each case duly authorized by such Board to act hereunder.

“**Board Resolution**” means a copy of a resolution certified by the secretary or an assistant secretary of the Company to have been duly adopted by the Board of Directors and to be in full force and effect on the date of such certification, and delivered to the Trustee.

“**Capital Stock**” means, with respect to any Person, any capital stock (including preferred stock), shares, interests, participations or other ownership interests (however designated) of such Person and any rights (other than debt securities convertible or exchangeable for corporate stock), warrants or options to purchase any thereof.

“**Commission**” means the Securities and Exchange Commission, as from time to time constituted, created under the Securities Exchange Act of 1934, or, if at any time after the execution of this instrument such Commission is not existing and performing the duties now assigned to it under the Trust Indenture Act, then the body performing such duties on such date.

“**Company**” means Corbus Pharmaceuticals Holdings, Inc., unless and until a successor corporation shall have become such pursuant to the applicable provisions of this Indenture, and thereafter “**Company**” shall mean such successor corporation.

“**Company Request**”, “**Company Order**”, and “**Company Consent**” mean, respectively, a written request, order, or consent signed in the name of the Company by the chairman of the Board of Directors, the chief executive officer, the chief financial officer, the treasurer, the controller, or by any other officer or officers of the Company pursuant to an applicable Board Resolution, and delivered to the Trustee.

“**Corporate Trust Office**” means the office of the Trustee at which at any particular time its corporate trust business shall be principally administered, which office at the date hereof is located at [].

“**Corporation**” means a corporation, association, company, joint-stock company, limited liability company or business trust.

“**Covenant Defeasance**” has the meaning specified in Section 4.03.

“**Defaulted Interest**” has the meaning specified in Section 3.07.

“**Defeasance**” has the meaning specified in Section 4.02.

“**Depository**” means with respect to the Securities of any series issuable or issued in whole or in part in global form, the Person designated as Depository by the Company pursuant to Section 3.01, unless and until a successor Depository shall have become such pursuant to the applicable provisions of this Indenture, and thereafter “**Depository**” shall mean or include each Person who is then a Depository hereunder, and if at any time there is more than one such Person, “**Depository**” as used with respect to the Securities of any such series shall mean the “**Depository**” with respect to the Securities of that series.

“**Equivalent Government Securities**” means, in relation to Securities denominated in a currency other than U.S. dollars, securities of the government that issued the currency in which such Securities are denominated or securities of government agencies backed by the full faith and credit of such government.

“**Event of Default**” has the meaning specified in Article 5.

“**Holder**”, “**Securityholder**” and “**Holder of Securities**” means a Person in whose name a Security is registered in the Security Register (as hereinafter defined).

“**Indebtedness**” with respect to any Person means (1) any liability of such Person (a) for borrowed money, or (b) evidenced by a bond, note, debenture or similar instrument (including purchase money obligations but excluding Trade Payables), or (c) for the payment of money relating to a lease that is required to be classified as a capitalized lease obligation in accordance with generally accepted accounting principles; (2) mandatorily redeemable preferred or preference stock of a Subsidiary held by Persons other than the Company or a Subsidiary; (3) any liability of others described in the preceding clause (1) that such Person has guaranteed, that is recourse to such Person or that is otherwise such Person’s legal liability; and (4) any amendment, supplement, modification, deferral, renewal, extension or refunding of any liability of the types referred to in clauses (1), (2) and (3) above.

“**Indenture**” or “**this Indenture**” means 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 any particular series of Securities established as contemplated by Section 3.01.

“**Interest Payment Date**”, when used with respect to any series of Securities, means any date on which an installment of interest on those Securities is scheduled to be paid.

“**Maturity**”, when used with respect to any Security, means the date on which the principal amount outstanding under such Security or an installment of principal amount outstanding under such Security becomes due and payable, as therein or herein provided, whether on the Scheduled Maturity Date (as hereinafter defined), by declaration of acceleration, call for redemption, or otherwise.

“**New York Business Day**” means (except, with respect to any particular series of Securities, as may be otherwise provided in the form of such Securities) any day other than a Saturday or Sunday that is neither a legal holiday nor a day on which banking institutions are authorized or required by law, regulation, or executive order to be closed.

“**Officers’ Certificate**” means a certificate signed by any two of the chairman of the Board of Directors, the chief executive officer, the president, any vice president, the treasurer or by any other officer or officers of the Company pursuant to an applicable Board Resolution, and delivered to the Trustee.

“**Opinion of Counsel**” means a written opinion of counsel to the Company, which counsel may be an employee of the Company or other counsel who shall be reasonably acceptable to the Trustee.

“**Original Issue Discount Security**” means any Security which is initially sold at a discount from the principal amount thereof and the terms of which provide that upon redemption or acceleration of the Maturity thereof, an amount less than the principal amount thereof would become due and payable.

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

(a) such Securities theretofore canceled by the Trustee or delivered by the Company to the Trustee for cancellation;

(b) such Securities, or portions thereof, for whose payment or redemption money in the necessary amount has been theretofore deposited in trust with the Trustee or with any Paying Agent (as hereinafter defined) other than the Company, or, if the Company shall act as its own Paying Agent, has been set aside and segregated in trust by the Company; provided, in any case, that if such Securities are to be redeemed prior to their Scheduled Maturity Date, notice of such redemption has been duly given pursuant to this Indenture or provision therefor satisfactory to the Trustee has been made; and

(c) such Securities in exchange for or in lieu of which other Securities have been authenticated and delivered pursuant to this Indenture, or which shall have been paid, in each case, pursuant to the terms of Section 3.06 (except with respect to any such Security as to which proof satisfactory to the Trustee is presented that such Security is held by a Person in whose hands such Security is a legal, valid, and binding obligation of the Company).

In determining whether the Holders of the requisite principal amount of such Securities Outstanding have given any request, demand, authorization, direction, notice, consent or waiver hereunder, the principal amount of any Original Issue Discount Security that shall be deemed to be Outstanding shall be the amount of the principal thereof that would be due and payable as of the date of such determination upon a declaration of acceleration of the Maturity thereof. In determining whether the Holders of the requisite principal amount of such Securities Outstanding have given a direction concerning the time, method, and place of conducting any proceeding for any remedy available to the Trustee, or concerning the exercise of any trust or power conferred upon the Trustee under this Indenture, or concerning a consent on behalf of the Holders of any series of Securities to the waiver of any past default and its consequences, Securities owned by the Company, 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. In determining whether the Trustee shall be protected in relying upon any such request, demand, authorization, direction, notice, consent, or waiver, only Securities which a Responsible Officer assigned to the corporate trust department of the Trustee knows to be owned by the Company or any other obligor upon the Securities or any Affiliate of the Company or such other obligor shall be so disregarded. Securities so owned which have been pledged in good faith may be regarded as Outstanding if the pledgee establishes to the satisfaction of the Trustee the pledgee's right to act as owner with respect to such Securities and that the pledgee is not the Company or any other obligor upon the Securities or any Affiliate of the Company or such other obligor.

"Paying Agent" means, with respect to any Securities, any Person appointed by the Company to distribute amounts payable by the Company on such Securities. If at any time there shall be more than one such Person, "Paying Agent" as used with respect to the Securities of any particular series shall mean the Paying Agent with respect to Securities of that series. As of the date of this Indenture, the Company has appointed [] as Paying Agent with respect to all Securities issuable hereunder.

"Person" means any individual, corporation, partnership, joint venture, association, joint-stock company, trust, unincorporated organization, or government, or any agency or political subdivision thereof.

"Place of Payment" means with respect to any series of Securities issued hereunder the city or political subdivision so designated with respect to the series of Securities in question in accordance with the provisions of Section 3.01.

"Predecessor Securities" of any particular Security means every previous Security evidencing all or a portion of the same debt as that evidenced by such particular Security; and, for the purposes of this definition, any Security authenticated and delivered under Section 3.06 in lieu of a lost, destroyed, mutilated, or stolen Security shall be deemed to evidence the same debt as the lost, destroyed, mutilated, or stolen Security.

"Record Date" means any date as of which the Holder of a Security will be determined for any purpose described herein, such determination to be made as of the close of business on such date by reference to the Security Register.

"Redemption Date", when used with respect to any Security to be redeemed, means the date fixed for such redemption by or pursuant to this Indenture.

"Redemption Price", when used with respect to any Security to be redeemed, means the price specified in the Security at which it is to be redeemed pursuant to this Indenture.

“**Repayment Date**”, when used with respect to any Security to be repaid, means the date fixed for such repayment pursuant to such Security.

“**Repayment Price**”, when used with respect to any Security to be repaid, means the price at which it is to be repaid pursuant to such Security.

“**Responsible Officer**”, when used with respect to the Trustee, shall mean an officer or assistant officer of the Trustee in the Corporate Trust Office, having direct responsibility for the administration of this Indenture, and also, with respect to a particular corporate trust matter, any other officer to whom such matter is referred because of such officer’s knowledge of and familiarity with the particular subject.

“**Scheduled Maturity Date**”, when used with respect to any Security, means the date specified in such Security as the date on which all outstanding principal and interest will be due and payable.

“**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, of any series authenticated and delivered from time to time under this Indenture.

“**Security Register**” shall have the meaning specified in Section 3.05.

“**Security Registrar**” means the Person who maintains the Security Register, which Person shall be the Trustee unless and until a successor Security Registrar is appointed by the Company.

“**Senior Indebtedness**” means all obligations or indebtedness of, or guaranteed or assumed by, the Company, whether or not represented by bonds, debentures notes or similar instruments, for borrowed money, and any amendments, renewals, extensions, modifications and refundings of any such obligations or indebtedness, unless in the instrument creating or evidencing any such indebtedness or obligations or pursuant to which the same is outstanding it is specifically stated, at or prior to the time the Company becomes liable in respect thereof, that any such obligation or indebtedness or such amendment, renewal, extension, modification and refunding thereof is not Senior Indebtedness.

“**Significant Subsidiary**” means each Subsidiary which is a “significant subsidiary” as defined in Rule 1-02(w) of Regulation S-X, as amended or modified and in effect from time to time.

“**Special Record Date**” for the payment of any Defaulted Interest means a date fixed by the Trustee pursuant to Section 3.07.

“**Specified Currency**” has the meaning specified in Section 3.01.

“**Subsidiary**” means any corporation, partnership or other entity of which at the time of determination the Company owns or controls directly or indirectly more than 50% of the shares of voting stock or equivalent interest.

“**Trade Payables**” means accounts payable or any other Indebtedness or monetary obligations to trade creditors created or assumed in the ordinary course of business in connection with the obtaining of materials, finished products, inventory or services.

“**Trust Indenture Act**” or “**TIA**” means the Trust Indenture Act of 1939, as in force as of the date hereof, except as provided in Section 9.05.

“**Trustee**” means the party named as such above until a successor becomes such pursuant to this Indenture and thereafter means or includes each party who is then a trustee hereunder, and if at any time there is more than one such party, “Trustee” as used with respect to the Securities of any series means the Trustee with respect to Securities of that series. If Trustees with respect to different series of Securities are trustees under this Indenture, nothing herein shall constitute the Trustees co-trustees of the same trust, and each Trustee shall be the trustee of a trust separate and apart from any trust administered by any other Trustee with respect to a different series of Securities.

“**U.S. Government Obligations**” means (i) securities that are direct obligations of the United States of America, the payment of which is unconditionally guaranteed by the full faith and credit of the United States of America and (ii) securities that are obligations of a Person controlled or supervised by and acting as an agency or instrumentality of the United States of America, the payment of which is unconditionally guaranteed by the full faith and credit of the United States of America, and also includes depository receipts issued by a bank or trust company as custodian with respect to any of the securities described in the preceding clauses (i) and (ii), and any payment of interest or principal payable under any of the securities described in the preceding clauses (i) and (ii) that is held by such custodian for the account of the holder of a depository 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 depository receipt, or from any amount received by the custodian in respect of such securities, or from any specific payment of interest or principal payable under the securities evidenced by such depository receipt.

“**Voting Stock**”, as applied to the stock of any corporation, means stock of any class or classes (however designated), the outstanding shares of which have, by the terms thereof, ordinary voting power to elect a majority of the members of the board of directors (or other governing body) of such corporation, other than stock having such power only by reason of the happening of a contingency.

Section 1.02 Officers’ Certificates and Opinions. Every Officers’ Certificate, Opinion of Counsel, and other certificate or opinion to be delivered to the Trustee under this Indenture with respect to any action to be taken by the Trustee (except for the Officers’ Certificate required by Section 10.04) shall include the following:

(f) a statement that each individual signing such certificate or opinion has read all covenants and conditions of this Indenture relating to such proposed action, including the definitions herein relating thereto;

(g) 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;

(h) 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 covenant or condition has been complied with; and

(i) a statement as to whether, in the opinion of each such individual, such condition or covenant has been complied with.

Section 1.03 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 the 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 a certificate or opinion of, or representations by, legal counsel, unless such officer knows that any such certificate, opinion, or representation is erroneous. Any opinion of counsel for the Company 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, unless such counsel knows that any such certificate, opinion, or representation is 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, such instruments may, but need not, be consolidated and form a single instrument.

Section 1.04 Acts of Securityholders.

(a) Any request, demand, authorization, direction, notice, consent, waiver, or other action provided by this Indenture to be given or taken by Securityholders may be embodied in and evidenced by one or more instruments of substantially similar tenor signed by such Securityholders in person or by an agent duly appointed in writing; and, except as herein otherwise expressly provided, such action shall become effective when such instrument or instruments are delivered to the Trustee and (if expressly required by the applicable terms of this Indenture) to the Company. If any Securities are denominated in coin or currency other than that of the United States, then for the purposes of determining whether the Holders of the requisite principal amount of Securities have taken any action as herein described, the principal amount of such Securities shall be deemed to be that amount of United States dollars that could be obtained for such principal amount on the basis of the spot rate of exchange into United States dollars for the currency in which such Securities are denominated (as evidenced to the Trustee by a certificate provided by a financial institution, selected by the Company, that maintains an active trade in the currency in question, acting as conversion agent) as of the date the taking of such action by the Holders of such requisite principal amount is evidenced to the Trustee as provided in the immediately preceding sentence. Such instrument or instruments (and the action embodied therein and evidenced thereby) are herein sometimes referred to as the “**Act**” of the Securityholders signing such instrument or instruments. Proof of execution of any such instrument or of a writing appointing any such agent shall be sufficient for any purpose of this Indenture and (subject to Section 6.01) conclusive in favor of the Trustee and the Company, if made in the manner provided in this Section.

(b) The fact and date of the execution by any Person of any such instrument or writing may be proved by the affidavit of a witness to such execution or by the certificate of any notary public or other officer authorized by law to take acknowledgments of deeds, certifying that the individual signing such instrument or writing acknowledged to him the execution thereof. Where such execution is by an officer of a corporation or a member of a partnership, on behalf of such corporation or partnership, such certificate or affidavit shall also constitute sufficient proof of his authority. The fact and date of the execution of any such instrument or writing, or the authority of the person executing the same, may also be proved in any other manner which the Trustee deems sufficient.

(c) The ownership of Securities shall for all purposes be determined by reference to the Security Register, as such register shall exist as of the applicable date.

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

(e) Any request, demand, authorization, direction, notice, consent, waiver or other action by the Holder of any Security shall bind each subsequent Holder of such Security, and each Holder of any Security issued upon the registration of transfer thereof or in exchange therefor or in lieu thereof, with respect to anything done or suffered to be done by the Trustee or the Company in reliance upon such action, whether or not notation of such action is made upon such Security.

Section 1.05 Notices, etc., to Trustee and Company. Any request, order, authorization, direction, consent, waiver, or other action to be taken by the Trustee, the Company, or the Securityholders hereunder (including any Authentication Order), and any notice to be given to the Trustee or the Company with respect to any action taken or to be taken by the Trustee, the Company, or the Securityholders hereunder, shall be sufficient if made in writing and

(a) (if to be furnished or delivered to or filed with the Trustee by the Company or any Securityholder) delivered to the Trustee at its Corporate Trust Office, Attention: [], or

(b) (if to be furnished or delivered to the Company by the Trustee or any Securityholder, and except as otherwise provided in Section 5.01(d) and, in the case of a request for repayment, except as specified in the Security carrying the right to repayment) mailed to the Company, first-class postage prepaid, at its principal office (as specified in the first paragraph of this instrument), Attention: [], or at any other address hereafter furnished in writing by the Company to the Trustee.

Section 1.06 Notice To Securityholders: Waiver. Where this Indenture or any Security provides for notice to Securityholders of any event, such notice shall be sufficiently given (unless otherwise expressly provided herein or in such Security) if in writing and mailed, first-class postage prepaid, to each Securityholder affected by such event, at his or her address as it appears in the Security Register as of the applicable Record Date, not later than the latest date or earlier than the earliest date prescribed by this Indenture or such Security for the giving of such notice. In any case where notice to Securityholders is given by mail, neither the failure to mail such notice nor any defect in any notice so mailed to any particular Securityholder shall affect the sufficiency of such notice with respect to other Securityholders. Where this Indenture or any Security 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 Securityholders 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.

In case, by reason of the suspension of regular mail service as a result of a strike, work stoppage or otherwise, it shall be impractical to mail notice of any event to any Securityholder when such notice is required to be given pursuant to any provision of this Indenture or the applicable Security, then any method of notification as shall be satisfactory to the Trustee and the Company shall be deemed to be sufficient for the giving of such notice.

Section 1.07 Conflict with Trust Indenture Act. If any provision hereof limits, qualifies or conflicts with another provision hereof which is required to be included in this Indenture by any of the provisions of the TIA, such required provision shall control.

Section 1.08 Effect of Headings and Table of Contents. The Article and Section headings herein and the Table of Contents hereof are for convenience only and shall not affect the construction of any provision of this Indenture.

Section 1.09 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 1.10 Separability Clause. In case any provision in this Indenture or in the Securities 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 1.11 Benefits of Indenture. Nothing in this Indenture or in any Securities, express or implied, shall give to any Person, other than the parties hereto, their successors hereunder, the Authenticating Agent, the Security Registrar, any Paying Agent, and the Holders of Securities (or such of them as may be affected thereby), any benefit or any legal or equitable right, remedy or claim under this Indenture.

Section 1.12 Governing Law. This Indenture shall be governed by and construed in accordance with the laws of the State of New York.

Section 1.13 Counterparts. This instrument may be executed in any number of counterparts, each of which when so executed shall be deemed to be an original, but all of which shall together constitute but one and the same instrument.

Section 1.14 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 with respect to the Securities of any series it is necessary to convert the sum due in respect of the principal, premium, if any, or interest, if any, payable with respect to such Securities into a currency in which a judgment can be rendered (the “**Judgment Currency**”), the rate of exchange from the currency in which payments under such Securities is payable (the “**Required Currency**”) into the Judgment Currency shall be the highest bid quotation (assuming European-style quotation — *i.e.*, Required Currency per Judgment Currency) received by the Company from three recognized foreign exchange dealers in the City of New York for the purchase of the aggregate amount of the judgment (as denominated in the Judgment Currency) on the New York Business Day preceding the date on which a final unappealable judgment is rendered, for settlement on such payment date, and at which the applicable dealer timely commits to execute a contract, and (b) the Company’s obligations under this Indenture to make payments in the Required Currency (i) shall not be discharged or satisfied by any tender, or by any recovery pursuant to any judgment (whether or not entered in accordance with the preceding 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 judgment creditor 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.

Section 1.15 Legal Holidays. In any case where any Interest Payment Date, Redemption Date, Repayment Date or Maturity of any Security shall not be a New York Business Day at any Place of Payment, then (notwithstanding any other provision of this Indenture or of the Securities) payment of interest or principal (and premium, if any) need not be made at such Place of Payment on such date, but may be made on the next succeeding Business Day at such Place of Payment with the same force and effect as if made on the Interest Payment Date, Redemption Date, Repayment Date or at Maturity, *provided that no interest shall accrue* for the period from and after such Interest Payment Date, Redemption Date, Repayment Date or Maturity, as the case may be.

ARTICLE II SECURITY FORMS

Section 2.01 Forms Generally. The Securities of each series shall have such appropriate insertions, omissions, substitutions and other variations as are required or permitted by this Indenture and may have such letters, numbers or other marks of identification and such legends or endorsements placed thereon, as may be required to comply with the rules of any securities exchange, or as may, consistently herewith, be determined by the officers executing such Securities, as evidenced by their execution of the Securities. Any portion of the text of any Security may be set forth on the reverse thereof, with an appropriate reference thereto on the face of the Security.

The definitive Securities, if any, shall be printed, lithographed or engraved or produced by any combination of these methods on steel engraved borders or may be produced in any other manner permitted by the rules of any securities exchange, all as determined by the officers executing such Securities, as evidenced by their execution of such Securities.

Section 2.02 Forms of Securities. Each Security shall be in one of the forms approved from time to time by or pursuant to any Board Resolution, or established in one or more indentures supplemental hereto. Prior to the delivery to the Trustee for authentication of any Security in any form approved by or pursuant to a Board Resolution, the Company shall deliver to the Trustee a copy of such Board Resolution, together with a true and correct copy of the form of Security which has been approved thereby, or, if a Board Resolution authorizes a specific officer or officers to approve a form of Security, together with a certificate of such officer or officers approving the form of Security attached thereto, *provided, however*, that with respect to all Securities issued pursuant to the same Board Resolution, the required copy of such Board Resolution, together with the appropriate attachment, need be delivered only once. Any form of Security approved by or pursuant to a Board Resolution must be acceptable as to form to the Trustee, such acceptance to be evidenced by the Trustee’s authentication of Securities in that form or by a certificate signed by a Responsible Officer of the Trustee and delivered to the Company.

Section 2.03 Securities in Global Form. If Securities of a series are issuable in whole or in part in global form, the global security representing such Securities may provide that it shall represent the aggregate amount of Outstanding Securities 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 reduced to reflect exchanges or increased to reflect the issuance of additional Securities. Any endorsement of a Security in global form to reflect the amount (or any increase or decrease in the amount) 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 Authentication Order delivered to the Trustee pursuant to Section 3.03 hereof.

Section 2.04 Form of Trustee's Certificate of Authentication. The form of Trustee's Certificate of Authentication for any Security issued pursuant to this Indenture shall be substantially as follows:

TRUSTEE'S CERTIFICATE OF AUTHENTICATION

This is one of the Securities of the series designated therein referred to in the within-mentioned Indenture. [], as Trustee,

By: _____
Authorized Officer:

ARTICLE III THE SECURITIES

Section 3.01 General Title; General Limitations; Issuable in Series; Terms of Particular Series.

(a) The aggregate principal amount of Securities that may be authenticated, delivered, and Outstanding at any time under this Indenture is not limited.

(b) The Securities may be issued in one or more series in such aggregate principal amount as may from time to time be authorized by the Board of Directors. All Securities of a series issued under this Indenture shall in all respects be equally and ratably entitled to the benefits hereof, without preference, priority, or distinction on account of the actual time of the authentication and delivery or Scheduled Maturity Date thereof.

(c) Each series of Securities shall be created either by or pursuant to one or more Board Resolutions, by an Officers' Certificate or by one or more indentures supplemental hereto. Any such Board Resolution or supplemental indenture (or, in the case of a series of Securities created pursuant to a Board Resolution, any officer or officers authorized by such Board Resolution) shall establish the terms of any such series of Securities, including the following (as and to such extent as may be applicable):

(1) the title of such series;

(2) the limit, if any, upon the aggregate principal amount or issue price of the Securities of such series;

(3) the issue date or issue dates of the Securities of such series;

(4) the Scheduled Maturity Date of the Securities of such series;

(5) the place or places where the principal, premium, if any, interest, if any, and additional amounts, if any, payable with respect to the Securities of such series shall be payable;

(6) whether the Securities of such series will be issued at par or at a premium over or a discount from their face amount;

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- (7) the rate or rates (which may be fixed or variable) at which the Securities of such series shall bear interest, if any, and, if applicable, the method by which such rate or rates may be determined;
- (8) the date or dates (or the method by which such date or dates may be determined) from which interest, if any, shall accrue, and the Interest Payment Dates on which such interest shall be payable;
- (9) the rights, if any, to defer payments of interest on the Securities by extending the interest payment periods and the duration of such extension;
- (10) the period or periods within which, the Redemption Price(s) or Repayment Price(s) at which, and any other terms and conditions upon which the Securities of such series may be redeemed or repaid, in whole or in part, by the Company;
- (11) the obligation, if any, of the Company to redeem, repay, or purchase any of the Securities of such series pursuant to any sinking fund, mandatory redemption, purchase obligation, or analogous provision at the option of a Holder thereof, and the period or periods within which, the Redemption Price(s) or Repayment Price(s) or other price or prices at which, and any other terms and conditions upon which the Securities of such series shall be redeemed, repaid, or purchased, in whole or in part, pursuant to such obligation;
- (12) the issuance of the Securities of such series in whole or in part in global form and, if so, the identity of the Depositary for such global security and the terms and conditions, if any, upon which interests in the Securities represented by such global security may be exchanged, in whole or in part, for the individual Securities represented thereby (if other than as provided in Section 3.05);
- (13) whether such securities are subordinated securities and if so, the provisions for such subordination;
- (14) the denominations in which the Securities of such series will be issued (which may be any denomination as set forth in the terms of such Securities) if other than U.S. \$1,000 or an integral multiple thereof;
- (15) whether and under what circumstances additional amounts on the Securities of such series shall be payable in respect of any taxes, assessments, or other governmental charges withheld or deducted and, if so, whether the Company will have the option to redeem such Securities rather than pay such additional amounts;
- (16) the basis upon which interest shall be calculated;
- (17) if the Securities of such series are to be issuable in definitive form (whether upon original issue or upon exchange of a temporary Security for a definitive Security of such series) only upon receipt of certain certificates or other documents or upon satisfaction of other conditions, then the form and terms of such certificates, documents, and/or conditions;
- (18) the exchange or conversion of the Securities of that series, whether or not at the option of the Holders thereof, for or into new Securities of a different series or for or into any other securities which may include shares of Capital Stock of the Company or any Subsidiary of the Company or securities directly or indirectly convertible into or exchangeable for any such shares or securities of entities unaffiliated with the Company or any Subsidiary of the Company;
- (19) if other than U.S. dollars, the foreign or composite currency or currencies (each such currency a “**Specified Currency**”) in which the Securities of such series shall be denominated and in which payments of principal, premium, if any, interest, if any, or additional amounts, if any, payable with respect to such Securities shall or may be payable;

(20) if the principal, premium, if any, interest, if any, or additional amounts, if any, payable with respect to the Securities of such series are to be payable in any currency other than that in which the Securities are stated to be payable, whether at the election of the Company or of a Holder thereof, the period or periods within which, and the terms and conditions upon which, such election may be made;

(21) if the amount of any payment of principal, premium, if any, interest, if any, or other sum payable with respect to the Securities of such series may be determined by reference to the relative value of one or more Specified Currencies, commodities, securities, or instruments, the level of one or more financial or non-financial indices, or any other designated factors or formulas, the manner in which such amounts shall be determined;

(22) the exchange of Securities of such series, at the option of the Holders thereof, for other Securities of the same series of the same aggregate principal amount of a different authorized kind or different authorized denomination or denominations, or both;

(23) the appointment by the Trustee of an Authenticating Agent in one or more places other than the Corporate Trust Office of the Trustee, with power to act on behalf of the Trustee, and subject to its direction, in the authentication and delivery of the Securities of such series;

(24) any trustees, depositaries, paying agents, transfer agents, exchange agents, conversion agents, registrars, or other agents with respect to the Securities of such series if other than the Trustee, Paying Agent and Security Registrar named herein;

(25) the portion of the principal amount of Securities of such series, if other than the principal amount thereof, that shall be payable upon declaration of acceleration of the Maturity thereof pursuant to Section 5.02 or provable in bankruptcy pursuant to Section 5.04;

(26) any Event of Default with respect to the Securities of such series, if not set forth herein, or any modification of any Event of Default set forth herein with respect to such series;

(27) any covenant solely for the benefit of the Securities of such series;

(28) the inapplicability of Section 4.02 and Section 4.03 of this Indenture to the Securities of such series and if Section 4.03 is applicable, the covenants subject to Covenant Defeasance under Section 4.03; and

(29) any other terms of the securities of such series (which terms shall not be inconsistent with the provisions of this Indenture, but which may modify or delete any provision of this Indenture insofar as it applies to such series).

If all of the Securities issuable by or pursuant to any Board Resolution are not to be issued at one time, it shall not be necessary to deliver the Officers' Certificate and Opinion of Counsel required by Section 3.03 hereof at the time of issuance of each such Security, but such Officers' Certificate and Opinion of Counsel shall be delivered at or before the time of issuance of the first such Security.

If any series of Securities shall be established by action taken pursuant to any Board Resolution, the execution by the officer or officers authorized by such Board Resolution of an Authentication Order (as defined in Section 3.03 below) with respect to the first Security of such series to be issued, and the delivery of such Authentication Order to the Trustee at or before the time of issuance of the first Security of such series, shall constitute a sufficient record of such action. Except as otherwise permitted by Section 3.03, if all of the Securities of any such series are not to be issued at one time, the Company shall deliver an Authentication Order with respect to each subsequent issuance of Securities of such series, but such Authentication Orders may be executed by any authorized officer or officers of the Company, whether or not such officer or officers would have been authorized to establish such series pursuant to the aforementioned Board Resolution.

Unless otherwise provided by or pursuant to the Board Resolution or supplemental indenture creating such series (i) a series may be reopened for issuances of additional Securities of such series, and (ii) all Securities of the same series shall be substantially identical, except for the initial Interest Payment Date, issue price, initial interest accrual date and the amount of the first interest payment.

The form of the Securities of each series shall be established in a supplemental indenture or by or pursuant to the Board Resolution creating such series. The Securities of each series shall be distinguished from the Securities of each other series in such manner as the Board of Directors or its authorized representative or representatives may determine.

Unless otherwise provided with respect to Securities of a particular series, the Securities of any series may only be issuable in registered form, without coupons.

Section 3.02 Denominations and Currency. The Securities of each series shall be issuable in such denominations and currency as shall be provided in the provisions of this Indenture or by or pursuant to the Board Resolution or supplemental indenture creating such series. In the absence of any such provisions with respect to the Securities of any series, the Securities of that series shall be issuable only in fully registered form in denominations of U.S. \$1,000 and any integral multiple thereof.

Section 3.03 Execution, Authentication and Delivery, and Dating. The Securities shall be executed on behalf of the Company by the president, any vice president, the treasurer or any assistant treasurer and attested by the secretary or any one of its assistant secretaries, under its corporate seal. The signature of any of these officers on the Securities may be manual or facsimile. The seal of the Company, if set forth thereon, may be in the form of a facsimile thereof and may be impressed, affixed, imprinted, or otherwise reproduced on the Securities. Typographical and other minor errors or defects in any such reproduction of the seal or any such signature shall not affect the validity or enforceability of any Security that has been duly authenticated and delivered by the Trustee.

Unless otherwise provided in the form of Security for any series, all Securities shall be dated the date of their authentication.

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 to the Trustee for authentication, together with a Company Order for authentication and delivery (such Order an “**Authentication Order**”) with respect to such Securities, and the Trustee shall, upon receipt of such Authentication Order, in accordance with procedures acceptable to the Trustee set forth in the Authentication Order, and subject to the provisions hereof, authenticate and deliver such Securities to such recipients as may be specified from time to time pursuant to such Authentication Order. The material terms of such Securities shall be determinable by reference to such Authentication Order and procedures. If provided for in such procedures, such Authentication Order may authorize authentication and delivery of such Securities pursuant to oral instructions from the Company or its duly authorized agent, which instructions shall be promptly confirmed in writing. In authenticating such Securities and accepting the additional responsibilities under this Indenture in relation to such Securities, the Trustee shall be entitled to receive, and (subject to the provisions of Section 6.01 hereof) shall be fully protected in relying upon:

- (1) an executed supplemental indenture, if any;
- (2) an Officers’ Certificate, certifying as to the authorized form or forms and terms of such Securities; and
- (3) an Opinion of Counsel, stating that:

(a) the form or forms and terms of such Securities have been established by and in conformity with the provisions of this Indenture; *provided* that if all such Securities are not to be issued at the same time, such Opinion of Counsel may state that such terms will be established in conformity with the provisions of this Indenture, subject to any conditions specified in such Opinion of Counsel; and

(b) such Securities, when authenticated and delivered by the Trustee and issued by the Company in the manner and subject to any conditions specified in such Opinion of Counsel, will constitute valid and legally binding obligations of the Company, enforceable in accordance with their terms, subject to bankruptcy, insolvency, moratorium, reorganization, and other laws of general applicability relating to or affecting the enforcement of creditors' rights and to general principles of equity;

provided, however, that if all Securities issuable by or pursuant to a Board Resolution or supplemental indenture are not to be originally issued at one time, it shall not be necessary to deliver the Officers' Certificate or Opinion of Counsel otherwise required pursuant to this paragraph at or prior to the time of authentication of each such Security if such documents are delivered at or prior to the time of authentication upon original issuance of the first such Security to be issued. After the original issuance of the first such Security to be issued, any separate request by the Company that the Trustee authenticate such Securities for original issuance will be deemed to be a certification by the Company that it is in compliance with all conditions precedent provided for in this Indenture relating to the authentication and delivery of such Securities.

The Trustee shall not be required to authenticate such Securities if the issue thereof will adversely affect the Trustee's own rights, duties, or immunities under the Securities and this Indenture.

If the Company shall establish pursuant to Section 3.01 that Securities of a series may be issued in whole or in part in global form, then the Company shall execute, and the Trustee shall (in accordance with this Section 3.03 and the Authentication Order with respect to such series) authenticate and deliver, one or more Securities in global form that (i) shall represent and shall be denominated in an aggregate amount equal to the aggregate principal amount of the Outstanding Securities of such series to be represented by such one or more Securities in global form, (ii) shall be registered, in the name of the Depositary for such Security or Securities in global form, or in the name of a nominee of such Depositary, (iii) shall be delivered to such Depositary or pursuant to such Depositary's instruction, and (iv) shall bear a legend substantially as follows: "Unless and until it is exchanged in whole or in part for Securities in certificated form, this Security may not be transferred except as a whole by the Depositary to a nominee of the Depositary, or by a nominee of the Depositary to the Depositary or another nominee of the Depositary, or by the Depositary or any such nominee to a successor Depositary or a nominee of such successor Depositary." Each Depositary designated pursuant to Section 3.01 for a Security in global form must, at the time of its designation and at all times while it serves as Depositary, be a clearing agency registered under the Securities Exchange Act of 1934 and any other applicable statute or regulation.

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 herein executed by the Trustee by manual signature of an authorized officer, and such certificate upon any Security shall be conclusive evidence, and the only evidence, that such Security has been duly authenticated and delivered hereunder.

Section 3.04 Temporary Securities. Pending the preparation of definitive Securities of any series, the Company may execute, and, upon receipt of the documents required by Sections 2.02, 3.01 and 3.03 hereof, together with an Authentication Order, the Trustee shall authenticate and deliver, temporary Securities of such series that 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, without coupons, and with such appropriate insertions, omissions, substitutions, and other variations as the officers executing such Securities may determine, as evidenced by their execution of such Securities. In the case of Securities of any series for which a temporary Security may be issued in global form, such temporary global security shall represent all of the Outstanding Securities of such series and tenor.

Except in the case of temporary Securities in global form, which shall be exchanged in accordance with the provisions thereof, if temporary Securities of any series are issued, the Company will cause definitive Securities of such series to be prepared without unreasonable delay. After the preparation of definitive Securities, the temporary Securities of such series shall be exchangeable, at the Corporate Trust Office of the Trustee, or at such

other office or agency as may be maintained by the Company in a Place of Payment pursuant to Section 10.02 hereof, for definitive Securities of such series having identical terms and provisions, upon surrender of the temporary Securities of such series, at the Company's own expense and without charge to the Holder; and upon surrender for cancellation of any one or more temporary Securities of any series, the Company shall execute and the Trustee shall authenticate and deliver in exchange therefor a like principal amount of definitive Securities of such series in authorized denominations containing identical terms and provisions. Unless otherwise specified as contemplated by Section 3.01 with respect to a temporary Security in global form, until so exchanged, the temporary Securities of such series shall in all respects be entitled to the same benefits under this Indenture as definitive Securities of such series.

Section 3.05 Registration, Transfer and Exchange. With respect to the Securities of each series, the Trustee shall keep a register (herein sometimes referred to as the "**Security Register**") which shall provide for the registration of Securities of such series, and for transfers of Securities of such series, in accordance with information to be provided to the Trustee by the Company, subject to such reasonable regulations as the Trustee may prescribe. Such register shall be in written form or in any other form capable of being converted into written form within a reasonable time. At all reasonable times the information contained in such register or registers shall be available for inspection at the Corporate Trust Office of the Trustee or at such other office or agency to be maintained by the Company pursuant to Section 10.02 hereof.

Upon due presentation for registration of transfer of any Security of any series at the Corporate Trust Office of the Trustee or at any other office or agency maintained by the Company with respect to that series pursuant to Section 10.02 hereof, the Company shall execute, and the Trustee shall authenticate and deliver, in the name of the designated transferee or transferees, one or more new Securities of such series of any authorized denominations, of like aggregate principal amount, tenor, terms and Scheduled Maturity Date.

Any other provision of this Section 3.05 notwithstanding, unless and until it is exchanged in whole or in part for the individual Securities represented thereby, in definitive form, a Security in global form representing all or a portion of the Securities of a series may not be transferred except as a whole by the Depository for such series to a nominee of such Depository, or by a nominee of such Depository to such Depository or another nominee of such Depository, or by such Depository or any such nominee to a successor Depository for such series or a nominee of such successor Depository.

At the option of the Holder, Securities of any series may be exchanged for other Securities of such series of any authorized denominations, of like aggregate principal amount, tenor, terms and Scheduled Maturity Date, upon surrender of the Securities to be exchanged at such office or agency. Whenever any Securities are so surrendered for exchange, the Company shall execute, and the Trustee shall authenticate and deliver, the Securities which the Securityholder making the exchange is entitled to receive.

If at any time the Depository for the Securities of a series represented by one or more Securities in global form notifies the Company that it is unwilling or unable to continue as Depository for the Securities of such series, or if at any time the Depository for the Securities of such series shall no longer be eligible under Section 3.03 hereof, the Company, by Company Order, shall appoint a successor Depository with respect to the Securities of such series. If a successor Depository for the Securities of such series is not appointed by the Company within 90 days after the Company receives such notice or becomes aware of such ineligibility, the Company's election pursuant to Section 3.01 that such Securities be represented by one or more Securities in global form shall no longer be effective with respect to the Securities of such series and the Company will execute, and the Trustee, upon receipt of an Authentication Order for the authentication and delivery of definitive Securities of such series, will authenticate and deliver Securities of such series in definitive form, in authorized denominations, in an aggregate principal amount, and of like terms and tenor, equal to the principal amount of the Security or Securities in global form representing such series, in exchange for such Security or Securities in global form.

The Company may at any time and in its sole discretion and subject to the procedures of the Depository determine that individual Securities of any series issued in global form shall no longer be represented by such Security or Securities in global form. In such event the Company will execute, and the Trustee, upon receipt of an Authentication Order for the authentication and delivery of definitive Securities of such series and of the same terms and tenor, will authenticate and deliver Securities of such series in definitive form, in authorized denominations, and in aggregate principal amount equal to the principal amount of the Security or Securities in global form representing such series in exchange for such Security or Securities in global form.

If specified by the Company pursuant to Section 3.01 with respect to a series of Securities issued in global form, the Depository for such series of Securities may surrender a Security in global form for such series of Securities in exchange in whole or in part for Securities of such series in definitive form and of like terms and tenor on such terms as are acceptable to the Company and such Depository. Thereupon, the Company shall execute, and the Trustee upon receipt of an Authentication Order for the authentication and delivery of definitive Securities of such series, shall authenticate and deliver, without service charge:

(a) to each Person specified by such Depository, a new definitive Security or Securities of the same series and of the same tenor and terms, in authorized denominations, in aggregate principal amount equal to and in exchange for such Person's beneficial interest in the Security in global form; and

(b) to such Depository, a new Security in global form in a denomination equal to the difference, if any, between the principal amount of the surrendered Security in global form and the aggregate principal amount of the definitive Securities delivered to Holders pursuant to clause (a) above.

Upon the exchange of a Security in global form for Securities in definitive form, such Security in global form shall be canceled by the Trustee or an agent of the Company or the Trustee. Securities issued in definitive form in exchange for a Security in global form pursuant to this Section 3.05 shall be registered in such names and in such authorized denominations as the Depository for such Security in global form, pursuant to instructions from its direct or indirect participants or otherwise, shall instruct the Trustee or an agent of the Company or the Trustee in writing. The Trustee or such agent shall deliver such Securities to or as directed by the Persons in whose names such Securities are so registered or to the Depository.

Whenever any securities are so surrendered for exchange, the Company shall execute, and the Trustee shall authenticate and deliver, the Securities which the Holder making the exchange is entitled to receive.

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

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

Unless otherwise provided in the Security to be transferred or exchanged, no service charge shall be imposed for any registration of transfer or exchange of Securities, but the Company may (unless otherwise provided in such Security) require payment of a sum sufficient to cover any tax or other governmental charge that may be imposed in connection with any transfer or exchange of Securities, other than exchanges pursuant to Section 3.04, 3.06, 9.06 and 11.07 hereof not involving any transfer.

The Company shall not be required to (i) issue, register the transfer of, or exchange any Security of any series during a period beginning at the opening of business 15 days before the day of the mailing of a notice of redemption of Securities of such series selected for redemption under Section 11.03 and ending at the close of business on the date of such mailing, or (ii) register the transfer of or exchange any 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.

Section 3.06 Mutilated, Destroyed, Lost and Stolen Securities. If (i) any mutilated Security is surrendered to the Trustee, or the Company and the Trustee receive evidence to their satisfaction of the destruction, loss or theft of any Security, and (ii) there is delivered to the Company and the Trustee such security or indemnity as may be required by them to save each of them harmless, then, in the absence of notice to the Company or the

Trustee that such Security has been acquired by a bona fide purchaser, the Company may in its discretion execute and upon request of the Company the Trustee shall authenticate and deliver, in exchange for or in lieu of any such mutilated, destroyed, lost or stolen Security, a new Security of like tenor, terms, series, Scheduled Maturity Date, and principal amount, bearing a number not contemporaneously outstanding.

In case any such 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, 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 in lieu of any destroyed, lost or stolen Security shall constitute an original additional contractual 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 the same series duly issued hereunder.

The provisions of this Section are 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 3.07 Payment of Interest; Interest Rights Preserved. Interest on any Security which is payable and is punctually paid or duly provided for on any Interest Payment Date shall, if so provided in such Security, be paid to the Person in whose name that Security (or one or more Predecessor Securities) is registered at the close of business on the applicable Record Date, notwithstanding any transfer or exchange of such Security subsequent to such Record Date and prior to such Interest Payment Date. (unless such Interest Payment Date is also the date of Maturity of such Security).

Any interest on any Security which is payable, but is not punctually paid or duly provided for, on any Interest Payment Date (herein called "**Defaulted Interest**") shall forthwith cease to be payable to the registered Holder on the applicable Record Date by virtue of his having been such Holder; and, except as hereinafter provided, such Defaulted Interest may be paid by the Company, at its election in each case, as provided in clause (a) or clause (b) below:

(a) The Company may elect to make payment of any Defaulted Interest to the Persons in whose names any such Securities (or their respective Predecessor Securities) are 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 each such 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 prior to the date of the proposed payment, such money when deposited to be held in trust for the benefit of the Persons 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 nor 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 each such Security at his address as it appears in the Security Register, not less than 10 days prior to 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 Persons in whose names such Securities (or their respective Predecessor Securities) are registered at the close of business on such Special Record Date and shall no longer be payable pursuant to the following clause (b).

(b) 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 Securities 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 manner of payment shall be deemed practicable by the Trustee.

Interest on Securities of any series that bear interest may be paid by mailing a check to the address of the Person entitled thereto at such address as shall appear in the Securities Register for such series or by such other means as may be specified in the form of such Security.

Subject to the foregoing provisions of this Section 3.07 and the provisions of Section 3.05 hereof, 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.

Section 3.08 Persons Deemed Owners. Prior to due presentment of a 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 any Security is registered on the applicable Record Date(s) as the owner of such Security for the purpose of receiving payment of principal, premium, if any, interest, if any (subject to Sections 3.05 and 3.07 hereof), and any additional amounts payable with respect to such Security, and for all other purposes whatsoever, whether or not such Security be overdue, and neither the Company, the Trustee, nor any agent of the Company or the Trustee shall be affected by notice to the contrary.

None of the Company, the Trustee, any Authenticating Agent, any Paying Agent, the Security Registrar, or any Co-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 Security in global form or for maintaining, supervising or reviewing any records relating to such beneficial ownership interests and each of them may act or refrain from acting without liability on any information relating to such records provided by the Depository.

Section 3.09 Cancellation.

All Securities surrendered for payment, redemption, registration of transfer, exchange, or credit against a sinking or analogous fund shall, if surrendered to any Person other than the Trustee, be delivered to the Trustee and, if not already canceled, shall be promptly canceled by it. 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 promptly canceled by the Trustee. Acquisition of such Securities by the Company shall not operate as a redemption or satisfaction of the indebtedness represented by such Securities unless and until the same are delivered to the Trustee for cancellation. No Security shall be authenticated in lieu of or in exchange for any Securities canceled as provided in this Section, except as expressly permitted by this Indenture. The Trustee shall dispose of all canceled Securities in accordance with its customary procedures and deliver a certificate of such disposition to the Company.

Section 3.10 Computation of Interest. Unless otherwise provided as contemplated in Section 3.01, interest on the Securities shall be calculated on the basis of a 360-day year of twelve 30-day months.

ARTICLE IV SATISFACTION AND DISCHARGE

Section 4.01 Satisfaction and Discharge of Indenture. This Indenture shall cease to be of further effect with respect to any series of Securities (except as to any surviving rights of conversion or transfer or exchange of Securities of such series expressly provided for herein or in the form of Security for such series and obligations described as surviving below), and the Trustee, on demand of and at the expense of the Company, shall execute proper instruments acknowledging satisfaction and discharge of this Indenture as to such series, when

(a) either

(i) all Securities of that series theretofore authenticated and delivered (other than (A) Securities of such series which have been destroyed, lost, or stolen and which have been replaced or paid as provided in Section 3.06, and (B) Securities of such series for whose payment money 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 4.07) have been delivered to the Trustee canceled or for cancellation; or

(ii) all such Securities of that series not theretofore delivered to the Trustee canceled or for cancellation

(A) have become due and payable, or

(B) will, in accordance with their Scheduled Maturity Date, become due and payable within one year, or

(C) 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, in any of the cases described in subparagraphs (A), (B), or (C) above, the Company has irrevocably deposited or caused to be deposited with the Trustee, as trust funds in trust for the purpose, (x) an amount in money sufficient, (y) U.S. Government Obligations or Equivalent Government Securities which 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, money sufficient, or (z) a combination of (x) and (y) sufficient, in the opinion with respect to (y) and (z) of a nationally recognized firm of independent public accountants expressed in a written certification thereof delivered to the Trustee, to pay and discharge the entire indebtedness on such Securities with respect to principal, premium, if any, and interest, if any, to the date of such deposit (in the case of Securities which have become due and payable), or to the Scheduled Maturity Date or Redemption Date, as the case may be; provided, however, that if such U.S. Government Obligations or Equivalent Government Securities are callable or redeemable at the option of the issuer thereof, the amount of such money, U.S. Government Obligations, and Equivalent Government Securities deposited with the Trustee must be sufficient to pay and discharge the entire indebtedness referred to above if such issuer elects to exercise such call or redemption provisions at any time prior to the Scheduled Maturity Date or Redemption Date, as the case may be, and the Company, but not the Trustee, shall be responsible for monitoring any such call or redemption provision; and

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

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

Notwithstanding the satisfaction and discharge of this Indenture with respect to any series of Securities, the obligations of the Company under paragraph (a) of this Section 4.01 and its obligations to the Trustee with respect to that series under Section 6.07 shall survive, and the obligations of the Trustee under Sections 4.05, 4.07 and 10.03 shall survive.

Section 4.02 Discharge and Defeasance. The provisions of this Section and Section 4.04 (insofar as relating to this Section) shall apply to the Securities of each series unless specifically otherwise provided in a Board Resolution or indenture supplemental hereto provided pursuant to Section 3.01. In addition to discharge of this Indenture pursuant to Section 4.01, in the case of any series of Securities with respect to which the exact amount described in subparagraph (a) of Section 4.04 can be determined at the time of making the deposit referred to in such subparagraph (a), the Company shall be deemed to have paid and discharged the entire indebtedness on all the Securities of such a series as provided in this Section on and after the date the conditions set forth in Section 4.04 are satisfied, and the provisions of this Indenture with respect to the Securities of such series shall no longer be in effect (except as to (i) rights of registration of transfer and exchange of Securities of such series, (ii) substitution of mutilated, destroyed, lost or stolen Securities of such series, (iii) rights of Holders of Securities of such series to receive, solely from the trust fund described in subparagraph (a) of Section 4.04, payments of principal thereof, premium, if any, and interest, if any, thereon upon the original stated due dates or upon the Redemption Dates therefor (but not upon acceleration), and remaining rights of the Holders of Securities of such series to receive mandatory sinking fund payments, if any, (iv) the rights, obligations, duties and immunities of the Trustee

hereunder, (v) this Section 4.02, Section 4.07, Section 10.02 and Section 10.03 and (vi) the rights of the Holders of Securities of such series as beneficiaries hereof with respect to the property so deposited with the Trustee payable to all or any of them) (hereinafter called “**Defeasance**”), and the Trustee at the cost and expense of the Company, shall execute proper instruments acknowledging the same.

Section 4.03 Covenant Defeasance. The provisions of this Section and Section 4.04 (insofar as relating to this Section) shall apply to the Securities of each series unless specifically otherwise provided in a Board Resolution or indenture supplemental hereto provided pursuant to Section 3.01. In the case of any series of Securities with respect to which the exact amount described in subparagraph (a) of Section 4.04 can be determined at the time of making the deposit referred to in such subparagraph (a), (i) the Company shall be released from its obligations under any covenants specified in or pursuant to Section 3.01 as being subject to Covenant Defeasance with respect to such series (except as to (a) rights of registration of transfer and exchange of Securities of such series and rights under Section 4.07, Section 10.02 and Section 10.03, (b) substitution of mutilated, destroyed, lost or stolen Securities of such series, (c) rights of Holders of Securities of such series to receive, from the Company pursuant to Section 10.01, payments of principal thereof and interest, if any, thereon upon the original stated due dates or upon the Redemption Dates therefor (but not upon acceleration), and remaining rights of the Holders of Securities of such series to receive mandatory sinking fund payments, if any, (d) the rights, obligations, duties and immunities of the Trustee hereunder and (e) the rights of the Holders of Securities of such series as beneficiaries hereof with respect to the property so deposited with the Trustee payable to all or any of them), and (ii) the occurrence of any event specified in Section 5.01(d) (with respect to any of the covenants specified in or pursuant to Section 3.01 as being subject to Covenant Defeasance with respect to such series) shall be deemed not to be or result in a default or an Event of Default, in each case with respect to the Outstanding Securities of such series as provided in this Section on and after the date the conditions set forth in Section 4.04 are satisfied (hereinafter called “**Covenant Defeasance**”), and the Trustee at the cost and expense of the Company, shall execute proper instruments acknowledging the same. For this purpose, such Covenant Defeasance means that 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 (to the extent so specified in the case of Section 5.01(d)), whether directly or indirectly by reason of any reference elsewhere herein to any such covenant or by reason of any reference in any such covenant to any other provision herein or in any other document, but the remainder of this Indenture and the Securities of such series shall be unaffected thereby.

Section 4.04 Conditions To Defeasance Or Covenant Defeasance. The following shall be the conditions to application of either Section 4.02 or Section 4.03 to the Outstanding Securities:

(a) with reference to Section 4.02 or Section 4.03, the Company has irrevocably deposited or caused to be irrevocably deposited with the Trustee as funds in trust, specifically pledged as security for, and dedicated solely to, the benefit of the Holders of Securities of such series (i) money in an amount, or (ii) U.S. Government Obligations or Equivalent Government Securities which 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, money in an amount, or (iii) a combination of (i) and (ii), sufficient, in the opinion (with respect to (ii) and (iii)) of a nationally recognized firm of independent public accountants expressed in a written certification thereof delivered to the Trustee, to pay and discharge each installment of principal (including mandatory sinking fund payments) of, premium, if any, and interest on, the Outstanding Securities of such series on the dates such installments of interest, premium or principal are due, including upon redemption; provided, however, that if such U.S. Government Obligations and Equivalent Government Securities are callable or redeemable at the option of the issuer thereof, the amount of such money, U.S. Government Obligations, and/or Equivalent Government Securities deposited with the Trustee must be sufficient to pay and discharge the entire indebtedness referred to above if the issuer of any such U.S. Government Obligations or Equivalent Government Securities elects to exercise such call or redemption provisions at any time prior to the Scheduled Maturity Date or Redemption Date of such Securities, as the case may be. The Company, but not the Trustee, shall be responsible for monitoring any such call or redemption provision.

(b) in the case of Defeasance under Section 4.02, the Company has delivered to the Trustee an Opinion of Counsel based on the fact that (x) the Company has received from, or there has been published by, the Internal Revenue Service a ruling or (y) since the date hereof, there has been a change in the applicable United States federal income tax law, in either case to the effect that, and such opinion shall confirm that, the Holders of the Securities of such series will not recognize income, gain or loss for federal income tax purposes as a result of such

deposit, defeasance and discharge and will be subject to federal income tax on the same amount and in the same manner and at the same times, as would have been the case if such deposit, Defeasance and discharge had not occurred;

(c) in the case of Covenant Defeasance under Section 4.03, the Company has delivered to the Trustee an Opinion of Counsel to the effect that, and such opinion shall confirm that, the Holders of the Securities of such series will not recognize income, gain or loss for federal income tax purposes as a result of such deposit and Covenant Defeasance and will be subject to federal income tax on the same amount and in the same manner and at the same times, as would have been the case if such deposit and Covenant Defeasance had not occurred;

(d) no Event of Default or event which, with notice or lapse of time or both, would become an Event of Default with respect to the Securities of such series shall have occurred and be continuing on the date of such deposit, after giving effect to such deposit or, in the case of a Defeasance under Section 4.02, no Event of Default specified in Section 5.01(e) or Section 5.01(f) shall have occurred, at any time during the period ending on the 91st day after the date of such deposit or, if longer, ending on the day following the expiration of the longest preference period applicable to the Company in respect of such deposit (it being understood that this condition shall not be deemed satisfied until the expiration of such period);

(e) such Defeasance or Covenant Defeasance will not cause the Trustee to have a conflicting interest within the meaning of the TIA, assuming all Securities of a series were in default within the meaning of the TIA;

(f) such Defeasance or Covenant Defeasance will not result in a breach or violation of, or constitute a default under, any agreement or instrument to which the Company is a party or by which it is bound;

(g) such Defeasance or Covenant Defeasance will not result in the trust arising from such deposit constituting an investment company within the meaning of the Investment Company Act of 1940, as amended, unless the trust is registered under such Act or exempt from registration;

(h) if the Securities of such series are to be redeemed prior to their Stated Maturity Date (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; and

(i) the Company shall have delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that all conditions precedent provided for herein relating to such Defeasance or Covenant Defeasance, as the case may be, have been complied with.

Section 4.05 Application of Trust Money; Excess Funds. All money and U.S. Government Obligations or Equivalent Government Securities (including the proceeds thereof) deposited with the Trustee pursuant to Section 4.01 or Section 4.04 hereof shall be held in trust and applied by it, in accordance with the provisions of this Indenture and of the series of Securities in respect of which it was deposited, 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, and interest, if any, for whose payment such money has been deposited with the Trustee; but such money need not be segregated from other funds except to the extent required by law.

The Company will pay and indemnify the Trustee against any tax, fee or other charge imposed on or assessed against the cash or U.S. Government Obligations or Equivalent Government Securities deposited pursuant to Section 4.01 or Section 4.04 hereof or the principal and 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 the Outstanding Securities.

Anything in this Article 4 to the contrary notwithstanding, the Trustee shall deliver or pay to the Company from time to time upon Company Request any money or U.S. Governmental Obligations or Equivalent Government Securities held by it as provided in Section 4.01 or Section 4.04 which, in the opinion of a nationally recognized investment bank, appraisal firm or firm of independent public accountants, expressed in a written

certification thereof delivered to the Trustee, (which may be the opinion delivered under Section 4.01 or Section 4.04, as applicable), are in excess of the amount thereof that would then be required to be deposited to effect an equivalent satisfaction and discharge, Covenant Defeasance or Defeasance of the applicable series.

Section 4.06 Paying Agent to Repay Moneys Held. Upon the satisfaction and discharge of this Indenture, all moneys then held by any Paying Agent of the Securities (other than the Trustee) shall, upon demand of the Company, be repaid to it or paid to the Trustee, and thereupon such Paying Agent shall be released from all further liability with respect to such moneys.

Section 4.07 Return of Unclaimed Amounts. Any amounts deposited with or paid to the Trustee or any Paying Agent or then held by the Company, in trust for payment of the principal of, premium, if any, or interest, if any, on the Securities and not applied but remaining unclaimed by the Holders of such Securities for two years after the date upon which the principal of, premium, if any, or interest, if any, on such Securities, as the case may be, shall have become due and payable, shall be repaid to the Company by the Trustee on Company Request or (if then held by the Company) shall be discharged from such trust; and the Holder of any of such Securities shall thereafter look only to the Company for any payment which such Holder may be entitled to collect (until such time as such unclaimed amounts shall escheat, if at all, to the State of New York) 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. Notwithstanding the foregoing, the Trustee or Paying Agent, before being required to make any such repayment, may at the expense of the Company cause to be published once a week for two successive weeks (in each case on any day of the week) in a newspaper printed in the English language and customarily published at least once a day at least five days in each calendar week and of general circulation in the Borough of Manhattan, in the City and State of New York, a notice that said amounts have not been so applied and that after a date named therein any unclaimed balance of said amounts then remaining will be promptly returned to the Company.

ARTICLE V REMEDIES

Section 5.01 Events of Default. “**Event of Default**”, wherever used herein, means with respect to any series of Securities 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 either inapplicable to a particular series or it is specifically deleted or modified in the manner contemplated by Section 3.01:

(a) default in the payment of any interest on any Security of such series when it becomes due and payable, and continuance of such default for a period of 30 days; or

(b) default in the payment of the principal amount of (or premium, if any, on) any Security of such series as and when the same shall become due, either at Maturity, upon redemption, by declaration, or otherwise; or

(c) default in the payment of any sinking or purchase fund or analogous obligation when the same becomes due by the terms of the Securities of such series and continuance of such default for a period of 30 days; or

(d) default in the performance or breach of any covenant or warranty of the Company in this Indenture in respect of the Securities of such series (other than a covenant or warranty in respect of the Securities of such series a default in the performance of which or the breach of which is elsewhere in this Section specifically dealt with), and continuance of such default or breach for a period of 60 days after there has been given, by registered or certified mail, to the Company by the Trustee or to the Company and the Trustee by the Holders of at least 25% in the principal amount of the Outstanding Securities of such series, a written notice specifying such default or breach and requiring it to be remedied and stating that such notice is a “**Notice of Default**” hereunder; or

(e) the entry of an order for relief against the Company under the Federal Bankruptcy Act by a court having jurisdiction in the premises or a decree or order by a court having jurisdiction in the premises adjudging the

Company a bankrupt or insolvent under any other applicable Federal or State law, or the entry of a decree or order approving as properly filed a petition seeking reorganization, arrangement, adjustment or composition of or in respect of the Company under the Federal Bankruptcy Code or any other applicable Federal or State law, or appointing a receiver, liquidator, assignee, trustee, sequestrator (or other similar official) of the Company or of any substantial part of its property, or ordering the winding up or liquidation of its affairs, and the continuance of any such decree or order unstayed and in effect for a period of 90 consecutive days; or

(f) the consent by the Company to the institution of bankruptcy or insolvency proceedings against it, or the filing by it of a petition or answer or consent seeking reorganization or relief under the Federal Bankruptcy Code or any other applicable Federal or State law, or the consent by it to the filing of any such petition or to the appointment of a receiver, liquidator, assignee, trustee, sequestrator (or other similar official) of the Company or of any substantial part of its property, or the making by it of an assignment for the benefit of creditors, or the admission by it in writing of its inability to pay its debts generally as they become due, or the taking of corporate action by the Company in furtherance of any such action; or

(g) any other Event of Default provided for with respect to the Securities of such series in accordance with Section 3.01. A default under any indebtedness of the Company other than the Securities will not constitute an Event of Default under this Indenture, and a default under one series of Securities will not constitute a default under any other series of Securities. The Trustee shall not be charged with knowledge of an Event of Default unless a Responsible Officer at the Corporate Trust Office has actual knowledge thereof.

Section 5.02 Acceleration of Maturity, Rescission, and Annulment. If any Event of Default described in Section 5.01 above (other than Event of Default described in Section 5.01(e) and Section 5.01(f)) shall have occurred and be continuing with respect to any series, then and in each and every such case, unless the principal of all the Securities of such series shall have already become due and payable, either the Trustee or the Holders of not less than 51% in aggregate principal amount of the Securities of such series then Outstanding hereunder, by notice in writing to the Company (and to the Trustee if given by Holders), may declare the principal amount (or, if the Securities of such series are Original Issue Discount Securities, such portion of the principal amount as may be specified in the terms of that series) of all the Securities of such series and any and all accrued interest thereon to be due and payable immediately, and upon any such declaration the same shall become and shall be immediately due and payable, any provision of this Indenture or the Securities of such series to the contrary notwithstanding. If an Event of Default specified in Section 5.01(e) or Section 5.01(f) occurs, the principal amount of the Securities of such series and any and all accrued interest thereon shall immediately become and be due and payable without any declaration or other act on the part of the Trustee or any Holder. No declaration of acceleration by the Trustee with respect to any series of Securities shall constitute a declaration of acceleration by the Trustee with respect to any other series of Securities, and no declaration of acceleration by the Holders of at least 51% in aggregate principal amount of the Outstanding Securities of any series shall constitute a declaration of acceleration or other action by any of the Holders of any other series of Securities, in each case whether or not the Event of Default on which such declaration is based shall have occurred and be continuing with respect to more than one series of Securities, and whether or not any Holders of the Securities of any such affected series shall also be Holders of Securities of any other such affected series.

At any time after such a declaration of acceleration has been made with respect to the Securities of any series and before a judgment or decree for payment of the money due has been obtained by the Trustee as hereinafter in this Article provided, the Holders of not less than a majority of the aggregate principal amount of the Outstanding Securities of such series, by written notice to the Company and the Trustee, may rescind and annul such declaration and its consequences if all Events of Default with respect to such series of Securities, other than the nonpayment of the principal of the Securities of such series which have become due solely by such acceleration, have been cured or waived as provided in Section 5.13, if such cure or waiver does not conflict with any judgment or decree set forth in Section 5.01(e) and Section 5.01(f) and if all sums paid or advanced by the Trustee hereunder and the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel have been paid.

No such rescission shall affect any subsequent default or impair any right consequent thereon.

Section 5.03 Collection of Indebtedness and Suits for Enforcement by Trustee. The Company covenants that if:

- (a) default is made in the payment of any installment of interest on any Security of any series when such interest becomes due and payable, or
- (b) default is made in the payment of the principal of (or premium, if any, on) any Security at the Maturity thereof, or
- (c) default is made in the payment of any sinking or purchase fund or analogous obligation when the same becomes due by the terms of the Securities of any series, and
- (d) any such default continues for any period of grace provided in relation to such default pursuant to Section 5.01, then, with respect to the Securities of such series, the Company will, upon demand of the Trustee, pay to it, for the benefit of the Holder of any such Security (or the Holders of any such series in the case of clause (c) above), the whole amount then due and payable on any such Security (or on the Securities of any such series in the case of clause (c) above) for principal (and premium, if any) and interest, if any, with interest (to the extent that payment of such interest shall be legally enforceable) upon the overdue principal (and premium, if any) and upon overdue installments of interest, if any, at such rate or rates as may be prescribed therefor by the terms of any such Security (or of Securities of any such series in the case of clause (c) above); and, in addition thereto, such further amount 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 the Trustee under Section 6.07.

If the Company fails to pay such amounts forthwith upon such demand, the Trustee, in its own name and as trustee of an express trust, may institute a judicial proceeding for the collection of the sums 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 the Securities of such series and collect the money 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 any series of Securities occurs and is continuing, the Trustee may in its discretion proceed to protect and enforce its rights and the rights of the Holders of Securities of such series by such appropriate judicial proceedings as the Trustee shall deem most effectual to protect and enforce any such rights, whether for the specific enforcement of any covenant or agreement in this Indenture or in aid of the exercise of any power granted herein, or to enforce any other proper remedy.

Section 5.04 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 of 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 overdue principal or interest) shall be entitled and empowered, by intervention in such proceedings or otherwise,

- (a) to file and prove a claim for the whole amount of principal (or, with respect to Original Discount Securities, such portion of the principal amount as may be specified in the terms of such Securities), premium, if any, and interest, if any, owing and unpaid in respect of the Securities, and to file such other papers or documents as may be necessary and 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 and counsel, and all other amounts due the Trustee under Section 6.07) and of the Securityholders allowed in such judicial proceedings, and
- (b) to collect and receive any moneys or other property payable or deliverable on any such claims and to distribute the same; and any receiver, assignee, trustee, liquidator, sequestrator (or other similar official) in any such judicial proceeding is hereby authorized by each Securityholder 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 Securityholders, to pay to the Trustee any amount due to it for the reasonable compensation, expenses, disbursements and advances of the Trustee and its agent and counsel, and any other amounts due the Trustee under Section 6.07 hereof.

Nothing herein contained shall be deemed to authorize the Trustee to authorize or consent to or accept or adopt on behalf of any Securityholder 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 Securityholder in any such proceeding.

Section 5.05 Trustee May Enforce Claims Without Possession of Securities. All rights of action and claims under this Indenture or the Securities of any series may be prosecuted and enforced by the Trustee without the possession of any of the Securities of such series 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 of judgment shall, after provision for the payment of the reasonable compensation, expenses, disbursements and advances of the Trustee and its agents and counsel, be for the ratable benefit of the Holders of the Securities, of the series in respect of which such judgment has been recovered.

Section 5.06 Application of Money Collected. Any money collected by the Trustee with respect to a series of Securities pursuant to this Article 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, premium, if any, or interest, if any, upon presentation of the Securities of such series 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 under Section 6.07 hereof.

Second: To the payment of the amounts then due and unpaid upon the Securities of that series for principal, premium, if any, interest, if any, and additional amounts, if any, in respect of which or for the benefit of which such money has been collected, ratably, without preference or priority of any kind.

Section 5.07 Limitation 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

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

(b) the Holders of not less than 51% in 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;

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

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

(e) 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 Holders of Securities of such series shall have any right in any manner whatever by virtue of, or by availing of, any provision of this Indenture to affect, disturb or prejudice the rights of any other Holders of Securities of such series, or to obtain or to seek to obtain priority or preference over any other such Holders or to enforce any right under this Indenture, except in the manner herein provided and for the equal and proportionate benefit of all the Holders of all Securities of such series.

Section 5.08 Unconditional Right of Securityholders to Receive Principal, Premium, and Interest. 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, premium, if any, and (subject to Section 3.07) interest, if any, (and additional amounts, if any) on such Security on or after the respective payment dates expressed in such Security (or, in the case of redemption or repayment, on the Redemption Date or Repayment Date, as the case may be) and to institute suit for the enforcement of any such payment on or after such respective date, and such right shall not be impaired or affected without the consent of such Holder.

Section 5.09 Restoration of Rights and Remedies. If the Trustee or any Securityholder has instituted any proceeding to enforce any right or remedy under this Indenture and such proceeding has been discontinued or abandoned for any reason, then and in every such case the Company, the Trustee and the Securityholders 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 the Securityholders shall continue as though no such proceeding had been instituted.

Section 5.10 Rights and Remedies Cumulative. No right or remedy herein conferred upon or reserved to the Trustee or to the Securityholders is intended to be exclusive of any other right or remedy, and every right or remedy shall, to the extent permitted by law, 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 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 or by law to the Trustee or to the Securityholders may be exercised from time to time, and as often as may be deemed expedient, by the Trustee or by the Securityholders, as the case may be.

Section 5.12 Control by Securityholders. 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

(a) the Trustee shall have the right to decline to follow any such direction if the Trustee, being advised by counsel, determines that the action so directed may not lawfully be taken or would conflict with this Indenture or if the Trustee in good faith shall, by a Responsible Officer, determine that the proceedings so directed would involve it in personal liability or be unjustly prejudicial to the Holders not taking part in such direction, and

(b) the Trustee may take any other action deemed proper by the Trustee which is not inconsistent with such direction.

Section 5.13 Waiver of Past Defaults. The Holders of not less than a majority in principal amount of the Outstanding Securities of any series may, on behalf of the Holders of all the Securities of such series, waive any past default hereunder with respect to such series and its consequences, except a default not theretofore cured:

(a) in the payment of principal, premium, if any, or interest, if any, on any Security of such series, or in the payment of any sinking or purchase fund or analogous obligation with respect to the Securities of such series, or

(b) in respect of a covenant or provision in this Indenture which, under Article Nine hereof, cannot be modified or amended without the consent of the Holder of each Outstanding Security of such series.

Upon any such waiver, such 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 Undertaking for Costs. All parties to this Indenture agree, and each Holder of any Security by his 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 an undertaking to pay the costs of such suit, and that such court may in its discretion assess reasonable costs, including reasonable attorneys' fees, 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 shall not apply to any suit instituted by the Trustee, to any suit instituted by any Securityholder or group of Securityholders holding in the aggregate more than 10% in principal amount of the Outstanding Securities of any series to which the suit relates, or to any suit instituted by any Securityholder for the enforcement of the payment of principal, premium, if any, or interest, if any, on any Security on or after the respective payment dates expressed in such Security (or, in the case of redemption or repayment, on or after the Redemption Date or Repayment Date).

Section 5.15 Waiver of Stay or Extension Laws. The Company covenants (to the extent that it may lawfully do so) that 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 (other than any bankruptcy 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 (to the extent that it may lawfully do so) hereby expressly waives 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.

ARTICLE VI THE TRUSTEE

Section 6.01 Certain Duties and Responsibilities of Trustee.

(a) Except during the continuance of an Event of Default with respect to any series of Securities,

(i) the Trustee undertakes to perform such duties and only such duties as are specifically set forth in this Indenture with respect to the Securities of such series, and no implied covenants or obligations shall be read into this Indenture against the Trustee; and

(ii) in the absence of bad faith on its part, the Trustee may, with respect to Securities of such series, conclusively rely upon certificates or opinions furnished to the Trustee and conforming to the requirements of this Indenture; but in the case of any such certificates or opinions which by any provision hereof are specifically required to be furnished to the Trustee, the Trustee shall be under a duty to examine the same to determine whether or not they conform on their face to the requirements of this Indenture (but need not confirm or investigate the accuracy of calculations or other facts stated therein).

(b) If an Event of Default with respect to any series of Securities actually known to a Responsible Officer of the Trustee has occurred and is continuing, the Trustee shall exercise, with respect to the Securities of such series, such of the rights and powers vested in it by this Indenture, and use the same degree of care and skill in their exercise, as a prudent person would exercise or use under the circumstances in the conduct of his own affairs.

(c) No provision of this Indenture shall be construed to relieve the Trustee from liability for its own negligent action, its own negligent failure to act, or its own willful misconduct, except that

(i) this Subsection shall not be construed to limit the effect of Subsection (a) of this Section;

(ii) the Trustee shall not be liable for any error of judgment made in good faith by a Responsible Officer, unless it shall be proved that the Trustee was negligent in ascertaining the pertinent facts;

(iii) the Trustee shall not be liable with respect to any action taken or omitted to be taken by it in good faith in accordance with the direction of the Holders of not less than a majority in principal amount of the Outstanding Securities of any series relating to the time, method, and place of conducting any proceeding for any remedy available to the Trustee with respect to the Securities of such series, or exercising any trust or power conferred upon the Trustee, under this Indenture with respect to the Securities of such series; and

(iv) 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, if it shall have reasonable grounds for believing that repayment of such funds or adequate indemnity against such risk or liability is not reasonably assured to it.

(d) 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.

Section 6.02 Notice of Defaults. Within 90 days after receipt of notice of the occurrence of any default hereunder with respect to Securities of any series, the Trustee shall transmit by mail to all Securityholders of such series, as their names and addresses appear in the Security Register, notice of such default hereunder known to the Trustee, 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, premium, if any, or interest, if any, on any Security of such series or in the payment of any sinking or purchase fund installment or analogous obligation with respect to Securities 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 of the Trustee in good faith determine that the withholding of such notice is in the interests of the Securityholders of such series and; *provided, further,* that, in the case of any default of the character specified in Section 5.01(d) with respect to Securities of such series, no such notice to Securityholders of such series shall be given until at least 60 days after the occurrence thereof. For the purpose of this Section, the term "default", with respect to Securities of any series, means any event which is, or after notice or lapse of time or both would become, an Event of Default with respect to Securities of such series.

Section 6.03 Certain Rights of Trustee. Except as otherwise provided in Section 6.01 above:

(a) the Trustee may rely and shall be protected in acting or refraining from acting upon any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, bond, debenture or other paper or document believed by it to be genuine and to have been signed or presented by the proper party or parties;

(b) any request, direction or order of the Company mentioned herein shall be sufficiently evidenced by a Company Request or Company Order and any resolution of the Board of Directors may be sufficiently evidenced by a Board Resolution;

(c) 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 be herein specifically prescribed) may, in the absence of bad faith on its part, rely upon an Officers' Certificate or Opinion of Counsel or both, and shall not be liable for any action it takes or omits to take in good faith reliance on such certificate or opinion;

(d) the Trustee may consult with counsel of its selection and the advice or opinion of such counsel as to matters of law shall be full and complete authorization and protection from liability in respect of any action taken, suffered or omitted by it hereunder in good faith and in reliance thereon;

(e) the Trustee shall be under no obligation to exercise any of the rights or powers vested in it by this Indenture at the request or direction of any of the Securityholders pursuant to this Indenture, unless such Securityholders shall have offered to the Trustee security or indemnity reasonably satisfactory to the Trustee against the costs, expenses and liabilities which might be incurred by it in compliance with such request or direction;

(f) 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 or other paper or document, but the Trustee, in its discretion, may 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 the books, records and premises of the Company, personally or by agent or attorney; and

(g) the Trustee may execute any of the trusts or powers hereunder or perform any duties hereunder either directly or by or through agents or attorneys and the Trustee shall not be responsible for any misconduct or negligence on the part of any agent or attorney appointed with due care by it hereunder.

Section 6.04 Not Responsible for Recitals or Issuance of Securities. The recitals contained herein and in the Securities, except the certificates of authentication, shall be taken as the statements of the Company, and the Trustee assumes no responsibility for their correctness. The Trustee makes no representations as to the validity or sufficiency of this Indenture or of the Securities. The Trustee shall not be accountable for the use or application by the Company of Securities or the proceeds thereof.

Section 6.05 May Hold Securities. The Trustee or any Paying Agent, Security Registrar, or other agent of the Company, in its individual or any other capacity, may become the owner or pledgee of Securities and, subject to Sections 6.08 and 6.13 hereof, may otherwise deal with the Company with the same rights it would have if it were not Trustee, Paying Agent, Security Registrar, or such other agent.

Section 6.06 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 with the Company.

Section 6.07 Compensation and Reimbursement. The Company covenants and agrees

(a) to pay the Trustee from time to time, and the Trustee shall be entitled to, reasonable compensation for all services rendered by it hereunder (which compensation shall not be limited by any provision of law in regard to the compensation of a trustee of an express trust);

(b) 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 (including the reasonable compensation and the reasonable expenses and disbursements of its agents and counsel), except any such expense, disbursement or advance as may be attributable to its negligence or bad faith; and

(c) to indemnify the Trustee for, and to hold it harmless against, any loss, liability or expense incurred without negligence or bad faith on its part, arising out of or in connection with the acceptance or administration of this trust, including the reasonable costs and expenses of defending itself against any claim or liability in connection with the exercise or performance of any of its powers or duties hereunder.

Without prejudice to any other rights available to the Trustee under applicable law, when the Trustee incurs expenses or renders services in connection with an Event of Default specified in Section 5.01(e) and Section 5.01(f) above, such expenses (including the reasonable charges and expenses of its counsel) and compensation for such services are intended to constitute expenses of administration under any applicable Federal or State bankruptcy, insolvency, reorganization, or other similar law.

The Trustee shall have a lien prior to the Securities upon all property and funds held or collected by it as such for any amount owing to it or any predecessor Trustee pursuant to this Section 6.07, except with respect to funds held in trust for the benefit of the Holders of particular Securities.

The provisions of this Section shall survive the satisfaction and discharge of this Indenture.

Section 6.08 Disqualification; Conflicting Interests. If the Trustee has or shall acquire any conflicting interest within the meaning of the Trust Indenture Act, it shall either eliminate such interest or resign as Trustee with respect to one or more series of Securities, 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 Trust Indenture 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 6.09 Corporate Trustee Required; Eligibility. There shall at all times be a Trustee hereunder with respect to each series of Securities that shall be a corporation organized and doing business under the laws of the United States of America or of any State or Territory thereof or of the District of Columbia, authorized under such laws to exercise corporate trust powers, having a combined capital and surplus of at least \$50,000,000, and subject to supervision or examination by Federal or State authority and having its principal office and place of business in the City of New York, if there be such a corporation having its principal office and place of business in said City and willing to act as Trustee on customary and usual terms. If such corporation publishes reports of condition at least annually, pursuant to law or to the requirements of the aforesaid supervising or examining authority, then for the purposes of this Section, the combined capital and surplus of such corporation shall be deemed to be its combined capital and surplus as set forth in its most recent report of condition so published. If at any time the Trustee with respect to any series of Securities shall cease to be eligible in accordance with the provisions of this Section, it shall resign immediately in the manner and with the effect hereinafter specified in this Article.

Section 6.10 Resignation and Removal; Appointment of Successor.

(a) No resignation or removal of the Trustee and no appointment of a successor Trustee pursuant to this Article shall become effective until the acceptance of appointment by the successor Trustee under Section 6.11.

(b) The Trustee may resign with respect to any one or more series of Securities at any time by giving at least 60 days' written notice thereof to the Company. If an instrument of acceptance by a successor Trustee shall not have been delivered to the Trustee within 30 days after the giving of such notice of resignation, the resigning Trustee may petition any court of competent jurisdiction for the appointment of a successor Trustee.

(c) The Trustee may be removed with respect to any series of Securities at any time by Act of the Holders of 66 2/3% in principal amount of the Outstanding Securities of that series, delivered to the Trustee and to the Company.

(d) If at any time:

(i) the Trustee shall fail to comply with Section 6.08 above with respect to any series of Securities after written request therefor by the Company or by any Securityholder who has been a bona fide Holder of a Security of that series for at least six months, or

(ii) the Trustee shall cease to be eligible under Section 6.09 above with respect to any series of Securities and shall fail to resign after written request therefor by the Company or by any such Securityholder, or

(iii) the Trustee shall become incapable of acting with respect to any series of Securities, or

(iv) the Trustee shall be adjudged a 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 (A) the Company may remove the Trustee, with respect to the series or, in the case of clause (iv), with respect to all series, or (B) subject to Section 5.14, any Securityholder who has been a bona fide Holder of a Security of such series for at least 6 months may, on behalf of himself and all others similarly situated, petition any court of competent jurisdiction for the removal of the Trustee and the appointment of a successor Trustee with respect to the series or, in the case of clause (iv), with respect to all series.

(e) If the Trustee shall resign, be removed or become incapable of acting with respect to any series of Securities, or if a vacancy shall occur in the office of Trustee with respect to any series of Securities for any cause, the Company shall promptly appoint a successor Trustee for that series of Securities. If, within one year after such resignation, removal or incapacity, or the occurrence of such vacancy, a successor Trustee with respect to such series of Securities shall be appointed by Act of the Holders of 66 $\frac{2}{3}$ % 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, become the successor Trustee with respect to such series and supersede the successor Trustee appointed by the Company with respect to such series. If no successor Trustee with respect to such series shall have been so appointed by the Company or the Securityholders of such series and accepted appointment in the manner hereinafter provided, any Securityholder who has been bona fide Holder of a Security of that 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 such series.

(f) The Company shall give notice of each resignation and each removal of the Trustee with respect to any series and each appointment of a successor Trustee with respect to any series by mailing written notice of such event by first-class mail, postage prepaid, to the Holders of Securities of that series as their names and addresses appear in the Security Register. Each notice shall include the name of the successor Trustee and the address of its principal Corporate Trust Office.

Section 6.11 Acceptance of Appointment by Successor. Every successor Trustee appointed hereunder with respect to all series of Securities shall execute, acknowledge and deliver to the Company and to the predecessor Trustee an instrument accepting such appointment, and thereupon the resignation or removal of the predecessor 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 of the predecessor Trustee with respect to any such series; but, on request of the Company or the successor Trustee, such predecessor Trustee shall, upon payment of its reasonable charges, if any, execute and deliver an instrument transferring to such successor Trustee all the rights, powers and trusts of the predecessor Trustee, and shall duly assign, transfer and deliver to such successor Trustee all property and money held by such predecessor Trustee hereunder.

In case of the appointment hereunder of a successor Trustee with respect to the Securities of one or more (but not all) series, the Company, the predecessor Trustee and each successor Trustee with respect to the Securities of any applicable series shall execute and deliver an indenture supplemental hereto which (1) shall contain such provisions as shall be deemed necessary or desirable to transfer and to conform to, and to vest in, each successor Trustee all the rights, powers, trusts and duties of the predecessor Trustee with respect to the Securities of any series as to which the appointment of such successor Trustee relates and (2) if the predecessor 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 predecessor Trustee with respect to the Securities of any series as to which the predecessor Trustee is not being succeeded shall continue to be vested in the predecessor Trustee, and (3) 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 and 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 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 and each 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; and, on request of the Company or any successor Trustee, such retiring Trustee shall duly assign, transfer and deliver to such successor Trustee all 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.

Upon request of any such 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 referred to in the first or second preceding paragraph, as the case may be.

No successor Trustee with respect to any series of Securities shall accept its appointment unless at the time of such acceptance such successor Trustee shall be qualified and eligible with respect to that series under this Article.

Notwithstanding replacement of the Trustee pursuant to this Section, the Company's obligations under Section 6.07 hereof shall continue for the benefit of the retiring Trustee.

Section 6.12 Merger, Conversion, Consolidation or Succession to Business. Any corporation into which the Trustee may be merged or converted or with which it may be consolidated, or any corporation resulting from any merger, conversion or consolidation to which the Trustee shall be a party, or any corporation succeeding to all or substantially all of the corporate trust business of the Trustee, shall be the successor of the Trustee hereunder, provided that such corporation shall be otherwise qualified and eligible under this Article, 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 Trustee 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 6.13 Preferential Collection of Claims Against Company. If and when the Trustee shall be or shall become a creditor, of the Company (or of any other obligor upon the Securities), the Trustee shall be subject to the provisions of the Trust Indenture Act regarding the collection of claims against the Company (or against any such other obligor, as the case may be).

Section 6.14 Appointment of Authenticating Agent. At any time when any of the Securities remain Outstanding the Trustee, with the approval of the Company, may appoint an Authenticating Agent or Agents with respect to one or more series of Securities which shall be authorized to act on behalf of the Trustee to authenticate Securities of such series issued upon exchange, registration of transfer or partial redemption thereof or pursuant to Section 3.06, 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 shall be acceptable to the Company and shall at all times be a corporation organized and doing business under the laws of the United States of America, any State thereof or the District of Columbia, authorized under such laws to act as an Authenticating Agent, having a combined capital and surplus of not less than \$50,000,000 and subject to supervision or examination by Federal or State authority. If such Authenticating Agent publishes reports of condition at least annually, pursuant to law or to the requirements of said supervising or examining authority, then for the purposes of this Section, the combined capital and surplus of such Authenticating Agent shall be deemed to be its combined capital and surplus as set forth in its most recent report of condition so published. If at any time an Authenticating Agent shall cease to be eligible in accordance with the provisions of this Section, such Authenticating Agent shall resign immediately in the manner and with the effect specified in this Section.

Any corporation into which an Authenticating Agent may be merged or converted or with which it may be consolidated, or any corporation resulting from any merger, conversion or consolidation to which such Authenticating Agent shall be a party, or any corporation succeeding to the corporate agency or corporate trust business of an Authenticating Agent, shall continue to be an Authenticating Agent, provided such corporation shall be otherwise eligible under this Section, 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, if other than the Company, to 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, if other than the Company, to 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, the Trustee, with the approval of the Company, 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 Securities of the series with respect to which such Authenticating Agent will 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 originally named as an Authenticating Agent. No successor Authenticating Agent shall be appointed unless eligible under the provisions of this Section.

The Company agrees to pay to each Authenticating Agent from time to time reasonable compensation for its services under this Section.

If an appointment with respect to one or more series is made pursuant to this Section, the Securities of such series may have endorsed thereon, in addition to the Trustee's certificate of authentication, an alternate certificate of authentication in 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:

ARTICLE VII SECURITYHOLDERS' LISTS AND REPORTS BY TRUSTEE AND COMPANY

Section 7.01 Company to Furnish Trustee Names and Addresses of Securityholders. The Company will furnish or cause to be furnished to the Trustee:

(a) semiannually, not more than 15 days after January 1 and July 1 in each year, in such form as the Trustee may reasonably require, a list of the names and addresses of the Holders of Securities of each series as of such date, and

(b) 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 that if the Trustee shall be the Security Registrar for such series, such list shall not be required to be furnished.

Section 7.02 Preservation of Information; Communications to Securityholders.

(a) The Trustee shall preserve, in as current a form as is reasonably practicable, the names and addresses of Holders of Securities contained in the most recent list furnished to the Trustee as provided in Section 7.01 and the names and addresses of Holders of Securities received by the Trustee in its capacity as Security Registrar. The Trustee may destroy any list furnished to it as provided in Section 7.01 upon receipt of a new list so furnished.

(b) If three or more Holders of Securities of any series (hereinafter referred to as "**applicants**") apply in writing to the Trustee, and furnish to the Trustee reasonable proof that each such applicant has owned a Security of such series for a period of at least six months preceding the date of such application, and such application states

that the applicants desire to communicate with other Holders of Securities of such series or with the Holders of all Securities with respect to their rights under this Indenture or under such Securities and is accompanied by a copy of the form of proxy or other communication which such applicants propose to transmit, then the Trustee shall, within five Business Days after the receipt of such application, at its election, either:

(i) afford such applicants access to the information preserved at the time by the Trustee in accordance with Section 7.02(a), or

(ii) inform such applicants as to the approximate number of Holders of Securities of such series or all Securities, as the case may be, whose names and addresses appear in the information preserved at the time by the Trustee in accordance with Section 7.02(a), and as to the approximate cost of mailing to such Securityholders the form of proxy or other communication, if any, specified in such application.

If the Trustee shall elect not to afford such applicants access to such information, the Trustee shall, upon the written request of such applicants, mail to each Holder of a Security of such series or to all Securityholders, as the case may be, whose names and addresses appear in the information preserved at the time by the Trustee in accordance with Section 7.02 (a), a copy of the form of proxy or other communication which is specified in such request, with reasonable promptness after a tender to the Trustee of the material to be mailed and of payment, or provision for the payment, of the reasonable expenses of mailing, unless within five days after such tender, the Trustee shall mail to such applicants and file with the Commission, together with a copy of the material to be mailed, a written statement to the effect that, in the opinion of the Trustee, such mailing would be contrary to the best interests of the Holders of Securities of such series or all Securityholders, as the case may be, or would be in violation of applicable law. Such written statement shall specify the basis of such opinion. If the Commission, after opportunity for a hearing upon the objections specified in the written statement so filed, shall enter an order refusing to sustain any of such objections or if, after the entry of an order sustaining one or more of such objections, the Commission shall find, after notice and opportunity for hearing, that all the objections so sustained have been met and shall enter an order so declaring, the Trustee shall mail copies of such material to all Securityholders of such series or all Securityholders, as the case may be, with reasonable promptness after the entry of such order and the renewal of such tender; otherwise the Trustee shall be relieved of any obligation or duty to such applicants respecting their application.

(c) Every Holder of Securities, by receiving and holding the same, agrees with the Company and the Trustee that neither the Company nor the Trustee 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 7.02(b), 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 7.02(b).

Section 7.03 Reports by Trustee.

(a) The Trustee shall transmit to Holders such reports concerning the Trustee and its actions under this Indenture as may be required pursuant to the Trust Indenture Act at the times and in the manner provided pursuant thereto. If required by Section 313(a) of the Trust Indenture Act, the Trustee shall, within 60 days after each June 1 following the date of this Indenture, deliver to each Holder, as provided in Trust Indenture Act Section 313(c), a brief report dated as of such June 1, which complies with the provisions of such Section 313(a).

(b) A copy of each such report shall, at the time of such transmission to Holders, be filed by the Trustee with each stock exchange upon which any Securities are listed, with the Commission and with the Company as required by Trust Indenture Act Section 313(d). The Company will promptly notify the Trustee when any Securities are listed on any stock exchange.

Section 7.04 Reports by Company. The Company will:

(a) file with the Trustee, within 30 days after the Company is required to file the same with the Commission, 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 Securities Exchange Act of 1934; or, if the Company is not required to file information, documents or reports pursuant to either of said Sections, then it will 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 Securities Exchange Act of 1934 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;

(b) 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

(c) transmit by mail to all Securityholders, as their names and addresses appear in the Security Register, within 30 days after the filing thereof with the Trustee, such summaries of any information, documents and reports required to be filed by the Company pursuant to paragraphs (a) and (b) of this Section as may be required by rules and regulations prescribed from time to time by the Commission.

ARTICLE VIII CONSOLIDATION, MERGER, CONVEYANCE OR TRANSFER

Section 8.01 Company May Consolidate, etc., Only on Certain Terms. The Company shall not consolidate with or merge into any other corporation or convey or transfer all or substantially all of its properties and assets and the properties and assets of the Subsidiaries, taken as a whole, to any Person, unless;

(a) either the Company shall be the continuing corporation, or the corporation formed by such consolidation or into which the Company is merged or the Person which acquires by conveyance or transfer all or substantially all of the properties and assets of the Company and the Subsidiaries, taken as a whole, shall be a corporation organized and existing under the laws of the United States of America or any State or the District of Columbia, and shall expressly assume, by an indenture supplemental hereto, executed and delivered to the Trustee, in form satisfactory to the Trustee, the due and punctual payment of the principal, premium, if any, and interest, if any, on all the Securities and the performance of every covenant of this Indenture on the part of the Company to be performed or observed;

(b) 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 happened and be continuing; and

(c) the Company has delivered to the Trustee an Officers' Certificate and an Opinion of Counsel to the effect that any such consolidation, merger, conveyance or transfer and any assumption permitted or required by this Article complies with the provisions of this Article.

Section 8.02 Successor Corporation Substituted. Upon any consolidation or merger, or any conveyance or transfer of all or substantially all of the properties and assets of the Company in accordance with Section 8.01, the successor corporation formed by such consolidation or into which the Company is merged or the Person to which such conveyance or transfer 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 corporation had been named as the Company herein and the Company shall thereupon be released from all obligations hereunder and under the Securities. Such successor corporation thereupon may cause to be signed and may issue any or all of the Securities issuable hereunder which theretofore shall not have been signed by the Company and delivered to the Trustee; and, upon the order of such successor corporation, instead of the Company, and subject to all the terms, conditions and limitations in this Indenture prescribed, the Trustee shall authenticate and shall deliver any Securities which previously shall have been signed and delivered by the officers of the Company to the Trustee for authentication, and any Securities which such successor corporation thereafter shall cause to be signed and delivered to the Trustee for that purpose. All of the Securities so issued shall in all respects have the same legal rank and benefit under this Indenture as the Securities theretofore or thereafter issued in accordance with the terms of this Indenture as though all of such Securities had been issued at the date of the execution hereof.

In case of any such consolidation, merger, sale or conveyance such changes in phraseology and form (but not in substance) may be made in the Securities thereafter to be issued as may be appropriate.

**ARTICLE IX
SUPPLEMENTAL INDENTURES**

Section 9.01 Supplemental Indentures Without Consent of Securityholders. Without the consent of the Holders of any Securities, the Company and the Trustee, at any time and from time to time, may enter into one or more indentures supplemental hereto (which shall conform to the provisions of the Trust Indenture Act as in force at the date of execution thereof), in form satisfactory to the Trustee, for any of the following purposes:

- (a) to evidence the succession of another corporation to the Company, or successive successions, and the assumption by any such successor of the covenants, agreements and obligations of the Company pursuant to Article 8 hereof; or
- (b) to add to the covenants of the Company such further covenants, restrictions or conditions for the protection of the Holders of the Securities of any or all series as the Company and the Trustee shall consider to be for the protection of the Holders of the Securities of any or all series or to surrender any right or power herein conferred upon the Company (and if such covenants or the surrender of such right or power are to be for the benefit of less than all series of Securities, stating that such covenants are expressly being included or such surrenders are expressly being made solely for the benefit of one or more specified series); or
- (c) to cure any ambiguity, to correct or supplement any provision herein which may be inconsistent with any other provision herein or in any supplemental indenture, or to make any other provisions with respect to matters or questions arising under this Indenture that do not adversely affect the interests of the Holders of Securities of any series in any material respect; or
- (d) to add to this Indenture such provisions as may be expressly permitted by the Trust Indenture Act, excluding, however, the provisions referred to in Section 316(a)(2) of the Trust Indenture Act as in effect at the date as of which this instrument is executed or any corresponding provision in any similar federal statute hereafter enacted; or
- (e) to add guarantors or co-obligors with respect to any series of Securities; or
- (f) to secure any series of Securities; or
- (g) to establish any form of Security, as provided in Article 2 hereof, and to provide for the issuance of any series of Securities, as provided in Article 3 hereof, and to set forth the terms thereof, and/or to add to the rights of the Holders of the Securities of any series; or
- (h) to evidence and provide for the acceptance of appointment by another corporation as a successor Trustee hereunder with respect to one or more series of Securities 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 Section 6.11 hereof; or
- (i) to add any additional Events of Default in respect of the Securities of any or all series (and if such additional Events of Default are to be in respect of less than all series of Securities, stating that such Events of Default are expressly being included solely for the benefit of one or more specified series); or
- (j) to comply with the requirements of the Commission in connection with the qualification of this Indenture under the Trust Indenture Act; or
- (k) to make any change in any series of Securities that does not adversely affect in any material respect the interests of the Holders of such Securities.

Section 9.02 Supplemental Indentures With Consent of Securityholders. With the consent of the Holders of not less than a majority in principal amount of the Outstanding Securities of each series affected by such supplemental indenture or indentures, by Act of said Holders delivered to the Company and the Trustee, the Company and the Trustee may from time to time and at any time 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 any supplemental indenture or of modifying in any manner the rights of the Holders of the Securities of each such series under this Indenture; provided, however, that no such supplemental indenture shall, without the consent of the Holder of each Outstanding Security affected thereby:

(a) change the Scheduled Maturity Date or the stated payment date of any payment of premium or interest payable on any Security, or reduce the principal amount thereof, or any amount of interest or premium payable thereon, or

(b) change the method of computing the amount of principal of any Security or any interest payable thereon on any date, or change any Place of Payment where, or the coin or currency in which, any Security or any payment of premium or interest thereon is payable, or

(c) impair the right to institute suit for the enforcement of any payment described in clauses (a) or (b) on or after the same shall become due and payable, whether at Maturity or, in the case of redemption or repayment, on or after the Redemption Date or the Repayment Date, as the case may be; or

(d) change or waive the redemption or repayment provisions of any series;

(e) reduce the percentage in principal amount of the Outstanding Securities of any series, the consent of whose Holders is 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

(f) modify any of the provisions of this Section or Section 5.13, 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; provided, however, that this clause shall not be deemed to require the consent of any Holder with respect to changes in the references to "the Trustee" and concomitant changes in this Section, or the deletion of this proviso, in accordance with the requirements of Sections 6.11 and 9.01(h); or

(g) adversely affect the ranking or priority of any series;

(h) release any guarantor or co-obligor from any of its obligations under its guarantee of the Securities or this Indenture, except in compliance with the terms of this Indenture; or

(i) waive any Event of Default pursuant to Section 5.01(a), Section 5.01(b) or Section 5.01(c) hereof with respect to such Security.

A supplemental indenture that changes or eliminates any covenant or other provision of this Indenture that has expressly been included 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 Securityholders under this Section 9.02 to approve the particular form of any proposed supplemental indenture, but it shall be sufficient if such Act shall approve the substance thereof.

Section 9.03 Execution of Supplemental Indentures. Upon request of the Company and upon filing with the Trustee of evidence of an Act of Securityholders as aforementioned, the Trustee shall join with the Company in the execution of such supplemental indenture unless such supplemental indenture affects the Trustee's

own rights, powers, trusts, 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. In executing, or accepting the additional trusts created by, any supplemental indenture permitted by this Article or the modifications thereby of the trusts created by this Indenture, the Trustee shall be entitled to receive, and (subject to Section 6.01) shall be fully protected in relying upon, an Opinion of Counsel stating that the execution of such supplemental indenture is authorized or permitted by this Indenture.

Section 9.04 Effect of Supplemental Indentures. Upon the execution of any supplemental indenture under this Article, this Indenture shall be and be deemed to be modified and amended in accordance therewith, and such supplemental indenture shall form a part of this Indenture for all purposes; and the respective rights, limitation of rights, duties, powers, trusts and immunities under this Indenture of the Trustee, the Company, and every Holder of Securities theretofore or thereafter authenticated and delivered hereunder shall be determined, exercised and enforced thereunder to the extent provided therein.

Section 9.05 Conformity With Trust Indenture Act. Every supplemental indenture executed pursuant to this Article shall conform to the requirements of the Trust Indenture Act as then in effect.

Section 9.06 Reference in Securities to Supplemental Indentures. Securities of any series authenticated and delivered after the execution of any supplemental indenture pursuant to this Article 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 so modified as to conform, in the opinion of the Trustee and the Company, to any modification of this Indenture contained in any such supplemental indenture may be prepared and executed by the Company and authenticated and delivered by the Trustee in exchange for Outstanding Securities.

ARTICLE X COVENANTS

Section 10.01 Payment of Principal, Premium and Interest. With respect to each series of Securities, the Company will duly and punctually pay or cause to be paid the principal, premium, if any, and interest, if any, on such Securities in accordance with their terms and this Indenture, and will duly comply with all the other terms, agreements and conditions contained in the Indenture for the benefit of the Securities of such series.

Section 10.02 Maintenance of Office or Agency. So long as any of the Securities remain outstanding, the Company will maintain an office or agency in each Place of Payment where Securities may be presented or surrendered for payment, where Securities may be surrendered for registration of transfer or exchange, and where notices and demands to or upon the Company in respect of the Securities and this Indenture may be served. The Company will give prompt written notice to the Trustee of the location, and of any change in the location, of such office or agency. If at any time the Company shall fail to maintain such 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 its agent to receive all such presentations, surrenders, notices and demands.

Section 10.03 Money or Security Payments to Be Held in Trust. If the Company shall at any time act as its own Paying Agent for any series of Securities, it will, on or before each due date of the principal, premium, if any, or interest, if any, on any of the Securities of such series, segregate and hold in trust for the benefit of the Holders of the Securities of such series a sum sufficient to pay such principal, premium, or interest so becoming due until such sums shall be paid to such Holders of such Securities or otherwise disposed of as herein provided, and will promptly notify the Trustee of its action or failure so to act.

Whenever the Company shall have one or more Paying Agents for any series of Securities, it will, on or prior to each due date of the principal, premium, if any, or interest, if any, on any Securities of such series, deposit with a Paying Agent a sum sufficient to pay such principal, premium, or interest so becoming due, such sum to be held in trust for the benefit of the Holders of the Securities entitled to the same and (unless such Paying Agent is the Trustee) the Company will promptly notify the Trustee of its action or failure so to act.

The Company will cause each Paying Agent other than the Trustee for any series of Securities 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, that such Paying Agent will

(a) hold all sums held by it for the payment of principal, premium, if any, or interest, if any, on Securities of such series in trust for the benefit of the Holders of the Securities entitled thereto until such sums shall be paid to such Holders of such Securities or otherwise disposed of as herein provided;

(b) 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 such payment of principal, premium, if any, or interest, if any, on the Securities of such series; and

(c) 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.

(j) The Company may, at any time, for the purpose of obtaining the satisfaction and discharge of this Indenture with respect to any series of Securities 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 in respect of each and every series of Securities as to which it seeks to discharge this Indenture or, if for any other purpose, all sums so held in trust by the Company in respect of all Securities, such sums to be held by the Trustee upon the same trusts 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 money.

Section 10.04 Certificate to Trustee. The Company will deliver to the Trustee within 120 days after the end of each fiscal year, an Officers' Certificate, one of whose signatories shall be the Company's principal executive, accounting or financial officer, stating that in the course of the performance by the signers of their duties as officers of the Company they would normally have knowledge of any default by the Company in the performance of any of its covenants, conditions or agreements contained herein (without regard to any period of grace or requirement of notice provided hereunder), stating whether or not they have knowledge of any such default and, if so, specifying each such default of which the signers have knowledge and the nature thereof.

Section 10.05 Corporate Existence. Subject to Article 8 the Company will do or cause to be done all things necessary to preserve and keep in full force and effect its corporate existence.

ARTICLE XI REDEMPTION OF SECURITIES

Section 11.01 Applicability of Article. The Company may reserve the right to redeem and pay before the Scheduled Maturity Date all or any part of the Securities of any series, either by optional redemption, sinking or purchase fund or analogous obligation or otherwise, by provision therefor in the form of Security for such series established and approved pursuant to Section 2.02 and 2.03 or as otherwise provided in Section 3.01, and on such terms as are specified in such form or in the indenture supplemental hereto with respect to Securities of such series as provided in Section 3.01. Redemption of Securities of any series shall be made in accordance with the terms of such Securities and, to the extent that this Article does not conflict with such terms, the succeeding Sections of this Article.

Section 11.02 Election to Redeem; Notice to Trustee. In case of any redemption at the election of the Company, 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 in writing 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 which 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 Officers' Certificate evidencing compliance with such restriction or condition.

Section 11.03 Selection by Trustee of Securities to be Redeemed. If fewer than all the Securities of any series 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, by such method as the Trustee shall deem fair and appropriate, which may include provision for the selection for redemption of portions of the principal of Securities of such series of a denomination larger than the minimum authorized denomination for Securities of that series. Unless otherwise provided in the terms of a particular series of Securities, the portions of the principal of Securities so selected for partial redemption shall be equal to the minimum authorized denomination of the Securities of such series, or an integral multiple thereof, and the principal amount which remains outstanding shall not be less than the minimum authorized denomination for Securities of such series.

The Trustee shall promptly notify the Company in writing of the Securities selected for redemption and, in the case of any Security 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 Security redeemed or to be redeemed only in part, to the portion of the principal of such Security which has been or is to be redeemed.

Section 11.04 Notice of Redemption. Notice of redemption shall be given by first-class mail, postage prepaid, mailed not fewer than 30 nor more than 60 days prior to the Redemption Date, to each Holder of Securities to be redeemed, at his or her address appearing in the Security Register on the applicable Record Date.

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 fewer than all Outstanding Securities of any series are to be redeemed, the identification (and, in the case of partial redemption, the respective principal amounts) of the Securities to be redeemed, from the Holder to whom the notice is given and that on and after the date fixed for redemption, upon surrender of such Security, a new Security or Securities of the same series in the aggregate principal amount equal to the unredeemed portion thereof will be issued in accordance with Section 11.07;

(4) that on the Redemption Date the Redemption Price will become due and payable upon each such Security, and that interest, if any, thereon shall cease to accrue from and after said date;

(5) the place where such Securities are to be surrendered for payment of the Redemption Price, which shall be the office or agency maintained by the Company in the Place of Payment pursuant to Section 10.02 hereof; and

(6) that the redemption is on account of a sinking or purchase fund, or other analogous obligation, if that be the case.

Notice of redemption of Securities to be redeemed at the election of the Company shall be given by the Company or, at the Company's request, made at least five business days prior to the date on which notice is to be given, by the Trustee in the name and at the expense of the Company.

Section 11.05 Deposit of Redemption Price. On or prior to any Redemption Date, the Company shall deposit 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 10.03) an amount of money, in immediately available funds, sufficient to pay the Redemption Price of all the Securities which are to be redeemed on that date.

Section 11.06 Securities Payable on Redemption Date. Notice of Redemption having been given as aforesaid, 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) such Securities shall cease to bear interest. Upon surrender of such Securities for redemption in accordance with the notice, such Securities shall be paid by the Company at the Redemption Price. Any installment of interest due and payable on or prior to the Redemption Date shall be payable to the Holders of such Securities registered as such on the relevant Record Date according to the terms and the provisions of Section 3.07 above; unless, with respect to an Interest Payment Date that falls on a Redemption Date, such Securities provide that interest due on such date is to be paid to the Person to whom principal is payable.

If any Security called for redemption shall not be so paid upon surrender thereof for redemption, the principal shall, until paid, bear interest from the Redemption Date at the rate borne by the Security, or as otherwise provided in such Security.

Section 11.07 Securities Redeemed in Part. Any Security that is to be redeemed only in part shall be surrendered at the office or agency maintained by the Company in the Place of Payment pursuant to Section 10.02 hereof with respect to that series (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 and at the expense of the Company, a new Security or Securities of the same series, tenor, terms and Scheduled Maturity Date, of any authorized denomination as requested by such Holders in aggregate principal amount equal to and in exchange for the unredeemed portion of the principal of the Security so surrendered.

Section 11.08 Provisions with Respect to any Sinking Funds. Unless the form or terms of any series of Securities shall provide otherwise, in lieu of making all or any part of any mandatory sinking fund payment with respect to such series of Securities in cash, the Company may at its option (a) deliver to the Trustee for cancellation any Securities of such series theretofore acquired by the Company, or (b) receive credit for any Securities of such series (not previously so credited) acquired or redeemed by the Company (other than through operation of a mandatory sinking fund) and theretofore delivered to the Trustee for cancellation, and if it does so then (i) Securities so delivered or credited shall be credited at the applicable sinking fund Redemption Price with respect to Securities of such series, and (ii) on or before the 60th day next preceding each sinking fund Redemption Date with respect to such series of Securities, the Company will deliver to the Trustee (A) an Officers' Certificate specifying the portions of such sinking fund payment to be satisfied by payment of cash and by the delivery or credit of Securities of such series acquired or redeemed by the Company, and (B) such Securities, to the extent not previously surrendered. Such Officers' Certificate shall also state the basis for any such credit and that the Securities for which the Company elects to receive credit have not been previously so credited and were not acquired by the Company through operation of the mandatory sinking fund, if any, provided with respect to such Securities and shall also state that no Event of Default with respect to Securities of such series has occurred and is continuing. All Securities so delivered to the Trustee shall be canceled by the Trustee and no Securities shall be authenticated in lieu thereof.

If the sinking fund payment or payments (mandatory or optional) with respect to any series of Securities made in cash plus any unused balance of any preceding sinking fund payments with respect to Securities of such series made in cash shall exceed \$50,000 (or a lesser sum if the Company shall so request), unless otherwise provided by the terms of such series of Securities, that cash shall be applied by the Trustee on the sinking fund Redemption Date with respect to Securities of such series next following the date of such payment to the redemption of Securities of such series at the applicable sinking fund Redemption Price with respect to Securities of such series, together with accrued interest, if any, to the date fixed for redemption, with the effect provided in Section 11.06. The Trustee shall select, in the manner provided in Section 11.03, for redemption on such sinking fund Redemption Date a sufficient principal amount of Securities of such series to utilize that cash and shall thereupon cause notice of redemption of the Securities of such series for the sinking fund to be given in the manner provided in Section 11.04 (and with the effect provided in Section 11.06) for the redemption of Securities in part at the option of the Company.

Any sinking fund moneys not so applied or allocated by the Trustee to the redemption of Securities of such series shall be added to the next cash sinking fund payment with respect to Securities of such series received by the Trustee and, together with such payment, shall be applied in accordance with the provisions of this Section 11.08. Any and all sinking fund moneys with respect to Securities of any series held by the Trustee at the Maturity of Securities of such series, and not held for the payment or redemption of particular Securities of such series, shall be applied by the Trustee, together with other moneys, if necessary, to be deposited sufficient for the purpose, to the payment of the principal of the Securities of such series at Maturity.

On or before each sinking fund Redemption Date provided with respect to Securities of any series, the Company shall pay to the Trustee in cash a sum equal to all accrued interest, if any, to the date fixed for redemption on Securities to be redeemed on such sinking fund Redemption Date pursuant to this Section 11.08.

The Trustee shall not redeem any Securities with sinking fund moneys or give any notice of redemption of Securities by operation of the applicable sinking fund during the continuance of a default in payment of interest on Securities of such series or of any Event of Default with respect to such series, except that if the notice of redemption of any Securities shall theretofore have been mailed in accordance with the provisions hereof, the Trustee shall redeem such Securities if cash sufficient for that purpose shall be deposited with the Trustee for that purpose in accordance with the terms of this Article 11. Except as aforesaid, any moneys in the sinking fund with respect to Securities of any series at the time when any such default or Event of Default with respect to such series shall occur, and any moneys thereafter paid into such sinking fund shall, during the continuance of such default or Event of Default with respect to such series, be held as security for the payment of all Securities of such series; provided, however, that in case such default or Event of Default with respect to such series shall have been cured or waived as provided herein, such moneys shall thereafter be applied on the next sinking fund payment date on which such moneys may be applied pursuant to the provisions of this Section 11.08.

ARTICLE XII REPAYMENT AT OPTION OF HOLDERS

Section 12.01 Applicability of Article. Repayment of Securities of any series before their Scheduled Maturity Date at the option of Holders thereof shall be made in accordance with the terms of such Securities and (except as otherwise specified as contemplated by Section 3.01 for Securities of any series) in accordance with this Article.

Section 12.02 Repayment of Securities. Securities of any series subject to repayment in whole or in part at the option of the Holders thereof will, unless otherwise provided in the terms of such Securities, be repaid at a price equal to the principal amount thereof, together with interest thereon accrued to the Repayment Date specified in the terms of such Securities. On or before the Repayment Date, the Company will deposit 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 10.03) an amount of money, in immediately available funds, sufficient to pay the Repayment Price of all the Securities which are to be repaid on such date.

Section 12.03 Exercise of Option. Securities of any series subject to repayment at the option of the Holders thereof will contain an “**Option to Elect Repayment**” form on the reverse of such Securities. To be repaid at the option of the Holder, any Security so providing for such repayment, with the “**Option to Elect Repayment**” form on the reverse of such Security duly completed by the Holder, must be received by the Company at the Place of Payment therefor specified in the terms of such Security (or at such other place or places of which the Company shall from time to time notify the Holders of such Securities) not earlier than 30 days nor later than 15 days prior to the Repayment Date. If less than the entire principal amount of such Security is to be repaid in accordance with the terms of such Security, the principal amount of such Security to be repaid, in increments of \$1,000 unless otherwise specified in the terms of such Security, and the denomination or denominations of the Security or Securities to be issued to the Holder for the portion of the principal amount of such Security surrendered that is not to be repaid must be specified. The principal amount of any Security providing for repayment at the option of the Holder thereof may not be repaid in part, if, following such repayment, the unpaid principal amount of such Security would be less than the minimum authorized denomination of Securities of the series of which such Security to be repaid is a part. Except as otherwise may be provided by the terms of any Security providing for repayment at the option of the Holder thereof, exercise of the repayment option by the Holder shall be irrevocable unless waived by the Company.

Section 12.04 When Securities Presented for Repayment Become Due and Payable. If Securities of any series providing for repayment at the option of the Holders thereof shall have been surrendered as provided in this Article and as provided by the terms of such Securities, such Securities or the portions thereof, as the case may be, to be repaid shall become due and payable and shall be paid by the Company on the Repayment Date therein specified, and on and after such Repayment Date (unless the Company shall default in the payment of such Securities on such Repayment Date) interest on such Securities or the portions thereof, as the case may be, shall cease to accrue.

Section 12.05 Securities Repaid in Part. Upon surrender of any Security which is to be repaid in part only, the Company shall execute and the Trustee shall authenticate and deliver to the Holder of such Security, without service charge and at the expense of the Company, a new Security or Securities of the same series, tenor, terms and Scheduled Maturity Date, of any authorized denomination specified by the Holder, in an aggregate principal amount equal to and in exchange for the portion of the principal of such Security so surrendered which is not to be repaid.

(signature page follows)

IN WITNESS WHEREOF, the parties hereto have caused this Indenture to be duly executed, and their respective corporate seals to be hereunto affixed and attested; all as of the day and year first above written.

**CORBUS PHARMACEUTICALS HOLDINGS,
INC.**

By: _____
Name:
Title:

Attest:

By: _____
Name:
Title:

TRUSTEE

By: _____
Name:
Title:

Attest:

By: _____
Name:
Title:

State of

ss.:

County of

On the [] day of [], 20[] before me personally came [] to me known, who, being by me duly sworn, did depose and say that he resides at []; that he is of [], one of the parties described in and which executed the above instrument; that he knows the corporate seal of said corporation; that the seal affixed to that instrument is such corporate seal; that it was affixed by authority of the board of directors of said corporation; and that he signed his name thereto by like authority.

Name

Notary Public

State of

ss.:

County of

On the [] day of [], 20[] before me personally came [], to me known, who, being by me duly sworn, did depose and say that he resides at []; that he is the [] of Corbus Pharmaceuticals Holdings, Inc., one of the parties described in and which executed the above instrument; that he knows the corporate seal of said corporation; that the seal affixed to that instrument is such corporate seal; that it was affixed by authority of the board of directors of said corporation; and that he signed his name thereto by like authority.

Name

Notary Public

November 10, 2015

Corbus Pharmaceuticals Holdings, Inc.
100 River Ridge Drive, Suite 103
Norwood, MA 02062

Re: Shelf Registration Statement on Form S-3

Ladies and Gentlemen:

This opinion is being furnished to you in connection with the Registration Statement on Form S-3 (the "Registration Statement"), including the prospectus that is part of the Registration Statement (the "Prospectus"), filed by Corbus Pharmaceuticals Holdings, Inc., a Delaware corporation (the "Company"), with the Securities and Exchange Commission (the "Commission") on November 10, 2015 under the Securities Act of 1933, as amended (the "Securities Act").

The Prospectus provides that it will be supplemented in the future by one or more prospectus supplements (each, a "Prospectus Supplement"). The Prospectus, as supplemented by the various Prospectus Supplements, will provide for the issuance and sale by the Company from time to time of up to \$100,000,000 aggregate offering price of (i) shares of the Company's common stock, par value \$0.0001 per share (the "Common Stock"), (ii) shares of the Company's preferred stock, par value \$0.0001 per share (the "Preferred Stock"), in one or more series or classes, (iii) warrants to purchase shares of Common Stock or Preferred Stock (the "Warrants"), (iv) secured or unsecured debt securities, in one or more series, which may be either senior debt securities, senior subordinated debt securities, subordinated debt securities or junior subordinated securities (the "Debt Securities") to be issued pursuant to an Indenture between the Company and a trustee or bank to be named (the "Trustee"), which may be supplemented for any series of Debt Securities (the "Indenture"), or (v) units composed of any of the foregoing (the "Units"). The Common Stock, Preferred Stock, Warrants, Debt Securities and Units are collectively referred to herein as the "Securities." The Warrants may be issued pursuant to a warrant agreement (the "Warrant Agreement") between the Company and a bank or trust company as warrant agent. Any Preferred Stock may be exchangeable for and/or convertible into shares of Common Stock or another series of Preferred Stock. Any Debt Securities may be exchangeable and/or convertible into shares of Common Stock or Preferred Stock. The Units may be issued pursuant to a Unit Agreement (the "Unit Agreement") between the Company and a bank or trust company as unit agent. The Securities are being registered for offering and sale from time to time pursuant to Rule 415 under the Securities Act.

In rendering our opinions set forth below, we have reviewed the Registration Statement and the exhibits thereto. We have also reviewed such corporate documents and records of the Company, such certificates of public officials and officers of the Company and such other matters as we have deemed necessary or appropriate for purposes of this opinion. In our examination, we have assumed: (i) the authenticity of original documents and the genuineness of all signatures; (ii) the conformity to the originals of all documents submitted to us as copies; (iii) the truth, accuracy and completeness of the information, representations and warranties contained in the instruments, documents, certificates and records we have reviewed; and (iv) the legal capacity for all purposes relevant hereto of all natural persons and, with respect to all parties to agreements or instruments relevant hereto other than the Company, that such parties had the requisite power and authority (corporate or otherwise) to execute, deliver and perform such agreements or instruments, that such agreements or instruments have been duly authorized by all requisite action (corporate or otherwise), executed and delivered by such parties and that such agreements or instruments are the valid, binding and enforceable obligations of such parties. As to any facts material to the opinions expressed herein that were not independently established or verified, we have relied upon oral or written statements and representations of officers and other representatives of the Company.

Based on the foregoing, and subject to the assumptions, limitations and qualifications set forth herein, we are of the opinion that:

1. With respect to shares of Common Stock, when (a) the issuance and the terms of the sale of the shares of Common Stock have been duly authorized by the Board of Directors of the Company in conformity with the Company's certificate of incorporation and bylaws; (b) such shares have been issued and delivered against payment of the purchase price therefor in an amount in excess of the par value thereof, in accordance with the applicable definitive purchase, underwriting or similar agreement, and as contemplated by the Registration Statement, the Prospectus and the related Prospectus Supplement; and (c) to the extent such shares of Common Stock are to be issued upon the conversion, exchange or exercise of any Preferred Stock, Warrants or Debt Securities, when such shares have been duly issued and delivered as contemplated by the terms of the applicable Preferred Stock, the Warrant Agreement relating to such Warrants or the Indenture relating to such Debt Securities, respectively, the shares of Common Stock will be validly issued, fully paid and nonassessable.

2. With respect to any particular series of shares of Preferred Stock, when (a) the issuance and the terms of the sale of the shares of Preferred Stock have been duly authorized by the Board of Directors of the Company in conformity with the Company's certificate of incorporation and bylaws; (b) an appropriate certificate of designation relating to a series of the Preferred Stock to be sold under the Registration Statement has been duly authorized and adopted and filed with the Secretary of State of Delaware; (c) the terms of issuance and sale of shares of such series of Preferred Stock have been duly established in conformity with the Company's certificate of incorporation and bylaws 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 and comply with any requirement or restriction imposed by any court or governmental body having jurisdiction over the Company or any of its property; (d) such shares have been issued and delivered against payment of the purchase price therefor in an amount in excess of the par value thereof, in accordance with the applicable definitive purchase, underwriting or similar agreement, and as contemplated by the Registration Statement, the Prospectus and the related Prospectus Supplement; and (e) to the extent such shares of Preferred Stock are to be issued upon the conversion, exchange or exercise of any Preferred Stock, Warrants or Debt Securities, when such shares have been duly issued and delivered as contemplated by the terms of the applicable Preferred Stock, the Warrant Agreement relating to such Warrants or Indenture relating to such Debt Securities, respectively, the shares of Preferred Stock will be validly issued, fully paid and nonassessable.

3. With respect to Warrants, when (a) the issuance and the terms of the sale of the Warrants have been duly authorized by the Board of Directors of the Company; (b) the terms of the Warrants and of their issuance and sale have been duly established 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 and comply with any requirement or restriction imposed by any court or governmental body having jurisdiction over the Company or any of its property; (c) the Warrants and the applicable Warrant Agreement relating to the Warrants, if any, have been duly executed and countersigned and the Warrants have been issued and sold in accordance with the applicable definitive purchase, underwriting or similar agreement, as contemplated by the Registration Statement, the Prospectus and the related Prospectus Supplement; and (d) the Company has received the applicable consideration for the Warrants as contemplated by the Registration Statement, the Prospectus and the related Prospectus Supplement(s), the Warrants will constitute valid and binding obligations of the Company.

4. With respect to Debt Securities, when (a) the issuance and the terms of the sale of the Debt Securities have been duly authorized by the Board of Directors of the Company; (b) the terms of the Debt Securities and of their issuance and sale have been duly established 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 and comply with any requirement or restriction imposed by any court or governmental body having jurisdiction over the Company or any of its property; (c) the Debt Securities and the applicable Indenture relating to the Debt Securities have been duly executed and countersigned and in the case of the Indenture, duly authenticated by the Trustee, and the Debt Securities have been issued and sold as contemplated by the Registration Statement, the Prospectus and the related Prospectus

Supplement; and (d) the Company has received the applicable consideration for the Debt Securities as contemplated by the Registration Statement, the Prospectus and the related Prospectus Supplement(s), the Debt Securities will constitute valid and binding obligations of the Company.

5. With respect to Units, when (a) the issuance and the terms of the sale of the Units have been duly authorized by the Board of Directors of the Company; (b) the terms of the Units and of their issuance and sale have been duly established 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 and comply with any requirement or restriction imposed by any court or governmental body having jurisdiction over the Company or any of its property; (c) the Unit Agreement and the Units have been duly executed and countersigned and the Units have been issued and sold in accordance with the applicable Unit Agreement, as contemplated by the Registration Statement, the Prospectus and the related Prospectus Supplement; and (d) the Company has received the applicable consideration for the Units as contemplated by the Registration Statement, the Prospectus and the related Prospectus Supplement(s), the Units will constitute valid and binding obligations of the Company.

In rendering the opinions set forth above, we have assumed that (i) the Registration Statement (and any applicable post-effective amendment thereto) will have become effective under the Securities Act, a Prospectus Supplement will have been prepared and filed with the Commission describing the Securities offered thereby and such Securities will have been issued and sold in accordance with the terms of such Prospectus Supplement and in compliance with all applicable laws; (ii) a definitive purchase, underwriting or similar agreement with respect to such Securities (if applicable) will have been duly authorized, executed and delivered by the Company and the other parties thereto; (iii) the Securities will be duly authorized by all necessary corporate action by the Company and any agreement pursuant to which such Securities may be issued will be duly authorized, executed and delivered by the Company and the other parties thereto; (iv) the Company is and will remain duly organized, validly existing and in good standing under applicable state law; and (v) the Company has reserved a sufficient number of shares of its duly authorized, but unissued, Common Stock and Preferred Stock as is necessary to provide for the issuance of the shares of Common Stock and Preferred Stock pursuant to the Registration Statement.

The opinions set forth above are subject to the following exceptions, limitations and qualifications: (i) the effect of bankruptcy, insolvency, reorganization, fraudulent conveyance, moratorium or other similar laws now or hereafter in effect relating to or affecting the rights and remedies of creditors; (ii) the effect of general principles of equity, including without limitation, concepts of materiality, reasonableness, good faith and fair dealing and the possible unavailability of specific performance or injunctive relief, regardless of whether enforcement is considered in a proceeding in equity or at law, and the discretion of the court before which any proceeding therefor may be brought; and (iii) the unenforceability under certain circumstances under law or court decisions of provisions providing for the indemnification of, or contribution to, a party with respect to liability where such indemnification or contribution is contrary to public policy. We express no opinion concerning the enforceability of any waiver of rights or defenses with respect to stay, extension or usury laws. Our opinion expressed herein is also subject to the qualification that no term or provision shall be included in any certificate of designation relating to any series of the Preferred Stock, Warrant Agreement, Indenture, Unit Agreement or any other agreement or instrument pursuant to which any of the Securities are to be issued that would affect the validity of such opinion.

Our opinion is limited to the federal laws of the United States, the General Corporation Law of the State of Delaware (including reported judicial decisions interpreting the General Corporation Law of the State of Delaware) and the State of New York. We express no opinion as to the effect of the law of any other jurisdiction. Our opinion is rendered as of the date hereof, and we assume no obligation to advise you of changes in law or fact (or the effect thereof on the opinions expressed herein) that hereafter may come to our attention.

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

Very truly yours,

/s/ Lowenstein Sandler LLP

LOWENSTEIN SANDLER LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the Registration Statement of Corbus Pharmaceuticals Holdings, Inc. (the “Company”) on Form S-3 to be filed on November 10, 2015 of our report dated February 10, 2015, on our audits of the consolidated financial statements as of December 31, 2014 and 2013 and for each of the years then ended, which report was included in the Annual Report on Form 10-K filed February 10, 2015. We also consent to the reference to our firm under the caption “Experts” in the Registration Statement on Form S-3.

/s/ EISNERAMPER LLP

Iselin, New Jersey
November 10, 2015