

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

FORM S-3

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

Anixa Biosciences, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

6794
(Primary Standard Industrial
Classification Code Number)

11-2622630
(I.R.S. Employer
Identification Number)

3150 Almaden Expressway, Suite 250
San Jose, CA 95118
(408) 708-9808

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

Dr. Amit Kumar
President and Chief Executive Officer
Anixa Biosciences, Inc.
3150 Almaden Expressway, Suite 250
San Jose, CA 95118
(408) 708-9808

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

Please send a copy of all communications to:

Barry I. Grossman, Esq.
Ellenoff Grossman & Schole LLP
1345 Avenue of the Americas
New York, New York 10105-0302
(212) 370-1300

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

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

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

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

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

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, 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, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.:

Large accelerated filer
Non-accelerated filer

Accelerated filer
Smaller reporting company
Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of Securities Act.

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered (1)	Amount to be Registered (2) (3)	Proposed Maximum Aggregate Offering Price per Security (2) (3)	Proposed Maximum Aggregate Offering Price (2) (3)	Amount of Registration Fee (4)
Common Stock, par value \$0.01 per share	—	—	—	—
Preferred Stock, par value \$100 per share	—	—	—	—
Purchase Contracts (5)	—	—	—	—
Warrants to Purchase common stock, Preferred Stock or other Securities (6)	—	—	—	—
Subscription Rights to Purchase common stock or Preferred Stock	—	—	—	—
Depository Shares	—	—	—	—
Debt Securities (which may be senior or subordinated, convertible or non-convertible, secured or unsecured)	—	—	—	—
Units (7)	—	—	—	—
TOTAL	---	—	\$100,000,000	\$12,120

(1) Securities registered hereunder may be sold separately, together or as units with other securities registered hereunder.

(2) Not specified as to each class of securities to be registered pursuant to Form S-3 General Instruction II.D.

(3) The Registrant is registering an indeterminate aggregate principal amount and number of securities of each identified class of securities up to a proposed aggregate offering price of \$100,000,000, which may be offered from time to time in unspecified numbers and at indeterminate prices, and as may be issuable upon conversion, redemption, repurchase, exchange, or exercise of any securities registered hereunder, including under any applicable anti-dilution provisions. In addition, pursuant to Rule 416 under the Securities Act of 1933, as amended, the shares being registered hereunder include such indeterminate number of shares of common stock and preferred stock as may be issuable with respect to the shares being registered hereunder as a result of stock splits, stock dividends or similar transactions.

(4) The registration fee is calculated in accordance with Rule 457(o) under the Securities Act of 1933, as amended.

(5) Includes purchase contracts issuable upon conversion or exchange of securities registered hereunder to the extent any such securities are by their terms convertible into or exchangeable for purchase contracts. Each purchase contract obligates the registrant to sell, and the holder thereof to purchase, an indeterminate number of debt securities, shares of common stock, shares of preferred stock or other securities registered hereunder.

(6) Warrants may represent rights to purchase debt securities, common stock, preferred stock or other securities registered hereunder.

(7) Each Unit consists of any combination of two or more of the securities being registered hereby.

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

EXPLANATORY NOTE

This registration statement contains two prospectuses:

- a base prospectus which covers the offering, issuance and sale by us of up to \$100,000,000 of our common stock, preferred stock, purchase contracts, warrants, subscriptions rights, depositary shares, debt securities and/or units; and
- a sales agreement prospectus covering the offering, issuance and sale by the Registrant of up to \$50,000,000 of our common stock that may be issued and sold under a sales agreement with B. Riley FBR, Inc.

The base prospectus immediately follows this explanatory note. The sales agreement prospectus immediately follows the base prospectus. The \$50,000,000 of common stock that may be offered, issued and sold by us under the sales agreement prospectus is included in the \$100,000,000 of securities that may be offered, issued and sold by us under the base prospectus. The sales agreement prospectus includes the base prospectus, except that the sales agreement prospectus contains a different front and back cover page, and sets forth additional information in the sections titled "About this Prospectus," "The Offering," "Risk Factors," "Use of Proceeds," "Dilution," "Plan of Distribution" and "Legal Matters." The cover pages and such additional information contained in the sales agreement prospectus are set forth in the pages following the base prospectus included herein.

The information in this prospectus is not complete and may be changed. We may not sell the securities until the Registration Statement filed with the Securities and Exchange Commission, of which this prospectus is a part, is effective. This prospectus is not an offer to sell these securities and is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED JUNE 11, 2019

Prospectus

ANIXA BIOSCIENCES, INC.

\$100,000,000

**COMMON STOCK
PREFERRED STOCK
PURCHASE CONTRACTS
WARRANTS
SUBSCRIPTION RIGHTS
DEPOSITARY SHARES
DEBT SECURITIES
UNITS**

We may offer and sell from time to time, in one or more series, any one of the following securities of our company, for total gross proceeds of up to \$100,000,000:

- common stock;
- preferred stock;
- purchase contracts;
- warrants to purchase our securities;
- subscription rights to purchase any of the foregoing securities;
- depositary shares;
- secured or unsecured debt securities consisting of notes, debentures or other evidences of indebtedness which may be senior debt securities, senior subordinated debt securities or subordinated debt securities, each of which may be convertible into equity securities; or
- units comprised of, or other combinations of, the foregoing securities.

We may offer and sell these securities separately or together, in one or more series or classes and in amounts, at prices and on terms described in one or more offerings. We may offer securities through underwriting syndicates managed or co-managed by one or more underwriters or dealers, through agents or directly to purchasers. The prospectus supplement for each offering of securities will describe in detail the plan of distribution for that offering. For general information about the distribution of securities offered, please see "Plan of Distribution" in this prospectus.

Each time our securities are offered, we will provide a prospectus supplement containing more specific information about the particular offering and attach it to this prospectus. The prospectus supplements may also add, update or change information contained in this prospectus.

This prospectus may not be used to offer or sell securities without a prospectus supplement which includes a description of the method and terms of this offering.

Our common stock is quoted on the Nasdaq Capital Market under the symbol "ANIX." The last reported sale price of our common stock on the NASDAQ Capital Market on June 10, 2019 was \$4.28 per share. The aggregate market value of our outstanding common stock held by non-affiliates is \$83,002,683 based on 20,096,743 shares of outstanding common stock, of which 17,474,249 shares are held by non-affiliates, and a per share price of \$4.75 which was the closing sale price of our common stock as quoted on the NASDAQ Capital Market on May 7, 2019.

If we decide to seek a listing of any preferred stock, purchase contracts, warrants, subscriptions rights, depository shares, debt securities or units offered by this prospectus, the related prospectus supplement will disclose the exchange or market on which the securities will be listed, if any, or where we have made an application for listing, if any.

Investing in our securities involves certain risks. See “Risk Factors” beginning on page 4 and the risk factors in our most recent Annual Report on Form 10-K, which is incorporated by reference herein, as well as in any other recently filed quarterly or current reports and, if any, in the relevant prospectus supplement. We urge you to carefully read this prospectus and the accompanying prospectus supplement, together with the documents we incorporate by reference, describing the terms of these securities before investing.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this Prospectus is _____, 2019.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or SEC, utilizing a “shelf” registration process. Under this shelf registration process, we may offer and sell, either individually or in combination, in one or more offerings, any of the securities described in this prospectus, for total gross proceeds of up to \$100,000,000. This prospectus provides you with a general description of the securities we may offer. Each time we offer securities under this prospectus, we will provide a prospectus supplement to this prospectus that will contain more specific information about the terms of that offering. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. The prospectus supplement and any related free writing prospectus that we may authorize to be provided to you may also add, update or change any of the information contained in this prospectus or in the documents that we have incorporated by reference into this prospectus.

We urge you to read carefully this prospectus, any applicable prospectus supplement and any free writing prospectuses we have authorized for use in connection with a specific offering, together with the information incorporated herein by reference as described under the heading “Incorporation of Documents by Reference,” before investing in any of the securities being offered. You should rely only on the information contained in, or incorporated by reference into, this prospectus and any applicable prospectus supplement, along with the information contained in any free writing prospectuses we have authorized for use in connection with a specific offering. We have not authorized anyone to provide you with different or additional information. This prospectus is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so.

The information appearing in this prospectus, any applicable prospectus supplement or any related free writing prospectus is accurate only as of the date on the front of the document and any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus, any applicable prospectus supplement or any related free writing prospectus, or any sale of a security.

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under the section entitled “Where You Can Find Additional Information.”

This prospectus contains, or incorporates by reference, trademarks, tradenames, service marks and service names of Anixa Biosciences, Inc. and its subsidiaries.

CAUTIONARY NOTE REGARDING FORWARD LOOKING STATEMENTS

This prospectus and any accompanying prospectus supplement and the documents incorporated by reference herein may contain forward looking statements that involve risks and uncertainties. All statements other than statements of historical fact contained in this prospectus and any accompanying prospectus supplement and the documents incorporated by reference herein, including statements regarding future events, our future financial performance, business strategy, and plans and objectives of management for future operations, are forward-looking statements. We have attempted to identify forward-looking statements by terminology including “anticipates,” “believes,” “can,” “continue,” “could,” “estimates,” “expects,” “intends,” “may,” “plans,” “potential,” “predicts,” “should,” or “will” or the negative of these terms or other comparable terminology. Although we do not make forward looking statements unless we believe we have a reasonable basis for doing so, we cannot guarantee their accuracy. These statements are only predictions and involve known and unknown risks, uncertainties and other factors, including the risks outlined under “Risk Factors” or elsewhere in this prospectus and the documents incorporated by reference herein, which may cause our or our industry’s actual results, levels of activity, performance or achievements expressed or implied by these forward-looking statements. Moreover, we operate in a highly regulated, very competitive, and rapidly changing environment. New risks emerge from time to time and it is not possible for us to predict all risk factors, nor can we address the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause our actual results to differ materially from those contained in any forward-looking statements.

We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy, short term and long term business operations, and financial needs. These forward-looking statements are subject to certain risks and uncertainties that could cause our actual results to differ materially from those reflected in the forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed in this prospectus, and in particular, the risks discussed below and under the heading “Risk Factors” and those discussed in other documents we file with the SEC. The following discussion should be read in conjunction with the consolidated financial statements for the fiscal years ended October 31, 2018 and 2017 and notes incorporated by reference herein. We undertake no obligation to revise or publicly release the results of any revision to these forward-looking statements, except as required by law. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this prospectus may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statement.

You should not place undue reliance on any forward-looking statement, each of which applies only as of the date of this prospectus. Except as required by law, we undertake no obligation to update or revise publicly any of the forward-looking statements after the date of this prospectus to conform our statements to actual results or changed expectations.

Any forward-looking statement you read in this prospectus, any prospectus supplement or any document incorporated by reference reflects our current views with respect to future events and is subject to these and other risks, uncertainties and assumptions relating to our operations, operating results, growth strategy and liquidity. You should not place undue reliance on these forward-looking statements because such statements speak only as to the date when made. We assume no obligation to publicly update or revise these forward-looking statements for any reason, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future, except as otherwise required by applicable law. You are advised, however, to consult any further disclosures we make on related subjects in our reports on Forms 10-Q, 8-K and 10-K filed with the SEC. You should understand that it is not possible to predict or identify all risk factors. Consequently, you should not consider any such list to be a complete set of all potential risks or uncertainties.

PROSPECTUS SUMMARY

This summary highlights selected information contained elsewhere in this prospectus. This summary does not contain all the information that you should consider before investing in our Company. You should carefully read the entire prospectus, including all documents incorporated by reference herein. In particular, attention should be directed to our “Risk Factors,” “Information With Respect to the Company,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and the financial statements and related notes thereto contained herein or otherwise incorporated by reference hereto, before making an investment decision.

As used herein, and any amendment or supplement hereto, unless otherwise indicated, “we,” “us,” “our,” the “Company,” or “Anixa” means Anixa Biosciences, Inc. and its subsidiaries. Unless otherwise indicated, all references in this prospectus to “dollars” or “\$” refer to US dollars.

Business Overview

Our primary operations involve research and development of cancer therapeutics and diagnostics. Our cancer therapeutics program consists of development of chimeric endocrine receptor T-cell (“CER-T”) technology, a novel form of CAR-T technology, initially focused on treating ovarian cancer. Our cancer diagnostics program consists of development of the artificial intelligence (AI) driven Cchek™ liquid biopsy platform for early cancer detection.

Our subsidiary, Certainty Therapeutics, Inc. (“Certainty”), is developing immuno-therapy drugs against cancer. Certainty holds an exclusive worldwide, royalty-bearing license to use certain intellectual property owned or controlled by The Wistar Institute (“Wistar”) relating to Wistar’s CER-T technology. We have initially focused on the development of a treatment for ovarian cancer, but we may also pursue applications of the technology for the development of treatments for additional solid tumors. The license agreement requires Certainty to make certain cash and equity payments to Wistar. With respect to Certainty’s equity obligations to Wistar, Certainty issued to Wistar shares of its common stock equal to five percent (5%) of the common stock of Certainty.

Certainty, in collaboration with the H. Lee Moffitt Cancer Center and Research Institute, Inc. (“Moffitt”), is advancing toward human clinical testing its CER-T technology for treating ovarian cancer. Certainty is working with researchers at Moffitt to complete studies necessary to submit an Investigational New Drug (“IND”) application with the U.S. Food and Drug Administration (“FDA”). We anticipate filing the IND with the FDA in the fall of 2019, with human clinical trials commencing thereafter, by late 2019 or early 2020.

Our subsidiary, Anixa Diagnostics Corporation (“Anixa Diagnostics”), is developing Cchek™, an AI driven platform of non-invasive blood tests for the early detection of cancer which is based on the body’s immune response to the presence of a malignancy. We have demonstrated the efficacy of Cchek™ with 20 different types of cancer, including: breast, lung, colon, melanoma, ovarian, liver, thyroid, pancreatic, appendiceal, uterine, osteosarcoma, leiomyosarcoma, liposarcoma, vulvar, prostate, bladder, cervical, head and neck, gastric and testicular cancers. Breast, lung, colon and prostate cancers represent the four largest categories of cancer worldwide.

We are currently developing tests for the detection of multiple types of cancer and are working with our development and commercialization partner, ResearchDx, a CLIA-certified laboratory, to launch Cchek™ Prostate Cancer Confirmation as a Laboratory Developed Test by the end of the third quarter of 2019.

Over the next several quarters, we expect the development of Certainty’s CER-T technology and Cchek™ to be the primary focus of the Company. As part of our legacy operations, the Company remains engaged in limited patent licensing activities in the area of encrypted audio/video conference calling. We do not expect these activities to be a significant part of the Company’s ongoing operations nor do we expect these activities to require material financial resources or attention of senior management.

Over the past several quarters, our revenue was derived from technology licensing and the sale of patented technologies, including revenue from the settlement of litigation. In addition to Certainty and Anixa Diagnostics, the Company may make investments in and form new companies to develop additional emerging technologies.

Corporate Information

Our principal executive offices are located at 3150 Almaden Expressway, Suite 250, San Jose, CA 95118, our telephone number is (408) 708-9808, and our Internet website address is <https://www.anixa.com/>. The information on our website is not a part of, or incorporated in, this prospectus supplement.

RISK FACTORS

Investing in our securities involves a high degree of risk. Before deciding whether to invest in our securities, you should carefully consider the risk factors we describe in any prospectus supplement and in any related free writing prospectus for a specific offering of securities, as well as those incorporated by reference into this prospectus or such prospectus supplement. You should also carefully consider other information contained and incorporated by reference in this prospectus and any applicable prospectus supplement, including our financial statements and the related notes thereto incorporated by reference in this prospectus. The risks and uncertainties described in the applicable prospectus supplement and our other filings with the SEC incorporated by reference herein are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently consider immaterial may also adversely affect us. If any of the described risks occur, our business, financial condition or results of operations could be materially harmed. In such case, the value of our securities could decline and you may lose all or part of your investment.

USE OF PROCEEDS

Unless otherwise indicated in a prospectus supplement, we intend to use the net proceeds from these sales for general corporate purposes, which includes, without limitation, ongoing clinical work, the development of new cancer related technologies, investing in or acquiring companies that are synergistic with or complimentary to our technologies, licensing activities related to our current and future product candidates, the development of emerging technologies, investing in or acquiring companies that are developing emerging technologies, licensing activities, or the acquisition of other businesses and working capital. The amounts and timing of these expenditures will depend on numerous factors, including the development of our current business initiatives. We have no specific acquisition contemplated at this time.

PLAN OF DISTRIBUTION

We may sell the securities from time to time to or through underwriters or dealers, through agents, or directly to one or more purchasers. A distribution of the securities offered by this prospectus may also be effected through the issuance of derivative securities, including without limitation, warrants, rights to purchase and subscriptions. In addition, the manner in which we may sell some or all of the securities covered by this prospectus includes, without limitation, through:

- a block trade in which a broker-dealer will attempt to sell as agent, but may position or resell a portion of the block, as principal, in order to facilitate the transaction;
- purchases by a broker-dealer, as principal, and resale by the broker-dealer for its account; or
- ordinary brokerage transactions and transactions in which a broker solicits purchasers.

A prospectus supplement or supplements with respect to each series of securities will describe the terms of the offering, including, to the extent applicable:

- the terms of the offering;
- the name or names of the underwriters or agents and the amounts of securities underwritten or purchased by each of them, if any;
- the public offering price or purchase price of the securities or other consideration therefor, and the proceeds to be received by us from the sale;
- any delayed delivery requirements;
- any over-allotment options under which underwriters may purchase additional securities from us;
- any underwriting discounts or agency fees and other items constituting underwriters' or agents' compensation
- any discounts or concessions allowed or re-allowed or paid to dealers; and
- any securities exchange or market on which the securities may be listed.

The offer and sale of the securities described in this prospectus by us, the underwriters or the third parties described above may be effected from time to time in one or more transactions, including privately negotiated transactions, either:

- at a fixed price or prices, which may be changed;
- in an "at the market" offering within the meaning of Rule 415(a)(4) of the Securities Act of 1933, as amended, or the Securities Act;
- at prices related to such prevailing market prices; or
- at negotiated prices.

Only underwriters named in the prospectus supplement will be underwriters of the securities offered by the prospectus supplement.

Underwriters and Agents; Direct Sales

If underwriters are used in a sale, they will acquire the offered securities for their own account and may resell the offered securities from time to time in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. We may offer the securities to the public through underwriting syndicates represented by managing underwriters or by underwriters without a syndicate.

Unless the prospectus supplement states otherwise, the obligations of the underwriters to purchase the securities will be subject to the conditions set forth in the applicable underwriting agreement. Subject to certain conditions, the underwriters will be obligated to purchase all of the securities offered by the prospectus supplement, other than securities covered by any over-allotment option. Any public offering price and any discounts or concessions allowed or re-allowed or paid to dealers may change from time to time. We may use underwriters with whom we have a material relationship. We will describe in the prospectus supplement, naming the underwriter, the nature of any such relationship.

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

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

Dealers

We may sell the offered securities to dealers as principals. The dealer may then resell such securities to the public either at varying prices to be determined by the dealer or at a fixed offering price agreed to with us at the time of resale.

Institutional Purchasers

We may authorize agents, dealers or underwriters to solicit certain institutional investors to purchase offered securities on a delayed delivery basis pursuant to delayed delivery contracts providing for payment and delivery on a specified future date. The applicable prospectus supplement or other offering materials, as the case may be, will provide the details of any such arrangement, including the offering price and commissions payable on the solicitations.

We will enter into such delayed contracts only with institutional purchasers that we approve. These institutions may include commercial and savings banks, insurance companies, pension funds, investment companies and educational and charitable institutions.

Indemnification; Other Relationships

We may provide agents, underwriters, dealers and remarketing firms with indemnification against certain civil liabilities, including liabilities under the Securities Act, or contribution with respect to payments that the agents or underwriters may make with respect to these liabilities. Agents, underwriters, dealers and remarketing firms, and their affiliates, may engage in transactions with, or perform services for, us in the ordinary course of business. This includes commercial banking and investment banking transactions.

Market-Making; Stabilization and Other Transactions

There is currently no market for any of the offered securities, other than our common stock, which is quoted on the Nasdaq Capital Market. If the offered securities are traded after their initial issuance, they may trade at a discount from their initial offering price, depending upon prevailing interest rates, the market for similar securities and other factors. While it is possible that an underwriter could inform us that it intends to make a market in the offered securities, such underwriter would not be obligated to do so, and any such market-making could be discontinued at any time without notice. Therefore, no assurance can be given as to whether an active trading market will develop for the offered securities. We have no current plans for listing of the debt securities, preferred stock, warrants or subscription rights on any securities exchange or quotation system; any such listing with respect to any particular debt securities, preferred stock, warrants or subscription rights will be described in the applicable prospectus supplement or other offering materials, as the case may be.

Any underwriter may engage in over-allotment, stabilizing transactions, short-covering transactions and penalty bids in accordance with Regulation M under the Securities Exchange Act of 1934, as amended, or the Exchange Act. Over-allotment involves sales in excess of the offering size, which create a short position. Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum price. Syndicate-covering or other short-covering transactions involve purchases of the securities, either through exercise of the over-allotment option or in the open market after the distribution is completed, to cover short positions. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the securities originally sold by the dealer are purchased in a stabilizing or covering transaction to cover short positions. Those activities may cause the price of the securities to be higher than it would otherwise be. If commenced, the underwriters may discontinue any of the activities at any time.

Any underwriters or agents that are qualified market makers on the Nasdaq Capital Market may engage in passive market making transactions in our common stock on the Nasdaq Capital Market in accordance with Regulation M under the Exchange Act, during the business day prior to the pricing of the offering, before the commencement of offers or sales of our common stock. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid must then be lowered when certain purchase limits are exceeded. Passive market making may stabilize the market price of the securities at a level above that which might otherwise prevail in the open market and, if commenced, may be discontinued at any time.

Fees and Commissions

If 5% or more of the net proceeds of any offering of securities made under this prospectus will be received by a FINRA member participating in the offering or affiliates or associated persons of such FINRA member, the offering will be conducted in accordance with FINRA Rule 5121.

DESCRIPTION OF SECURITIES WE MAY OFFER

General

This prospectus describes the general terms of our capital stock. The following description is not complete and may not contain all the information you should consider before investing in our capital stock. For a more detailed description of these securities, you should read the applicable provisions of Delaware law and our certificate of incorporation, as amended, referred to herein as our certificate of incorporation, and our amended and restated bylaws, referred to herein as our bylaws. When we offer to sell a particular series of these securities, we will describe the specific terms of the series in a supplement to this prospectus. Accordingly, for a description of the terms of any series of securities, you must refer to both the prospectus supplement relating to that series and the description of the securities described in this prospectus. To the extent the information contained in the prospectus supplement differs from this summary description, you should rely on the information in the prospectus supplement.

The total number of shares of capital stock we are authorized to issue is 48,020,000 shares, of which (a) 48,000,000 shares are common stock and (b) 20,000 shares are preferred stock.

We, directly or through agents, dealers or underwriters designated from time to time, may offer, issue and sell, together or separately, up to \$100,000,000 in the aggregate of:

- common stock;
- preferred stock;
- purchase contracts;
- warrants to purchase our securities;
- subscription rights to purchase our securities;
- depositary shares;
- secured or unsecured debt securities consisting of notes, debentures or other evidences of indebtedness which may be senior debt securities, senior subordinated debt securities or subordinated debt securities, each of which may be convertible into equity securities; or
- units comprised of, or other combinations of, the foregoing securities.

We may issue the debt securities as exchangeable for or convertible into shares of common stock, preferred stock or other securities that may be sold by us pursuant to this prospectus or any combination of the foregoing. The preferred stock may also be exchangeable for and/or convertible into shares of common stock, another series of preferred stock or other securities that may be sold by us pursuant to this prospectus or any combination of the foregoing. When a particular series of securities is offered, a supplement to this prospectus will be delivered with this prospectus, which will set forth the terms of the offering and sale of the offered securities.

Common Stock

As of June 10, 2019, there were 20,096,743 shares of common stock issued and outstanding, held of record by approximately 338 stockholders. Subject to preferential rights with respect to any outstanding preferred stock, all outstanding shares of common stock are of the same class and have equal rights and attributes.

Dividend Rights

Holders of the common stock may receive dividends when, as and if declared by our board of directors out of the assets legally available for that purpose and subject to the preferential dividend rights of any other classes or series of stock of our Company. We have never paid, and have no plans to pay, any dividends on our shares of common stock.

Voting Rights

Holders of the common stock are entitled to one vote per share in all matters as to which holders of common stock are entitled to vote. Holders of not less than a majority of the outstanding shares of common stock entitled to vote at any meeting of stockholders constitute a quorum unless otherwise required by law.

Election of Directors

Directors hold office until the next annual meeting of stockholders and are eligible for re-election at such meeting. Directors are elected by a plurality of the shares present in person or represented by proxy at the meeting and entitled to vote on the election of directors. There is no cumulative voting for directors.

Liquidation

In the event of any liquidation, dissolution or winding up of the Company, holders of the common stock have the right to receive ratably and equally all of the assets remaining after payment of liabilities and liquidation preferences of any preferred stock then outstanding.

Redemption

The common stock is not redeemable or convertible and does not have any sinking fund provisions.

Preemptive Rights

Holders of the common stock do not have preemptive rights.

Other Rights

Our common stock is not liable to further calls or to assessment by the registrant and for liabilities of the registrant imposed on its stockholders under state statutes.

Right to Amend Bylaws

The board of directors has the power to adopt, amend or repeal the bylaws. Bylaws adopted by the board of directors may be repealed or changed, and new bylaws made, by the stockholders, and the stockholders may prescribe that any bylaw made by them shall not be altered, amended or repealed by the board of directors.

Change in Control

Provisions of Delaware law and our certificate of incorporation and bylaws could make the acquisition of our company by means of a tender offer, proxy contest or otherwise, and the removal of incumbent officers and directors, more difficult. These provisions include:

Section 203 of the DGCL, which prohibits a merger with a 15%-or-greater stockholder, such as a party that has completed a successful tender offer, until three years after that party became a 15%-or-greater stockholder;

The authorization in our certificate of incorporation of undesignated preferred stock, which could be issued without stockholder approval in a manner designed to prevent or discourage a takeover; and

Provisions in our bylaws regarding stockholders' rights to call a special meeting of stockholders limit such rights to stockholders holding together at least a sixty-six and two-thirds percent of the shares of the Company entitled to vote at the meeting, which could make it more difficult for stockholders to wage a proxy contest for control of our board of directors or to vote to repeal any of the anti-takeover provisions contained in our certificate of incorporation and bylaws.

Together, these provisions may make the removal of management more difficult and may discourage transactions that could otherwise involve payment of a premium over prevailing market prices for our common stock.

Market, Symbol and Transfer Agent

Our common stock is listed for trading on the Nasdaq Capital Market under the symbol "ANIX". The transfer agent and registrar for our common stock is American Stock Transfer and Trust Company.

Preferred Stock

Our certificate of incorporation empowers our board of directors, without action by our shareholders, to issue up to 20,000 shares of blank check preferred stock from time to time in one or more series, which preferred stock may be offered by this prospectus and supplements thereto. As of June 10, 2019, 140 shares of Series A convertible preferred stock, the Series A preferred stock, were designated and 0 shares of Series A preferred stock was outstanding.

We will fix the rights, preferences, privileges and restrictions of the preferred stock of each series in the certificate of designation relating to that series. We will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from a current report on Form 8-K that we file with the SEC, the form of any certificate of designation that describes the terms of the series of preferred stock we are offering before the issuance of the related series of preferred stock. This description will include any or all of the following, as required:

- the title and stated value;
- the number of shares we are offering;
- the liquidation preference per share;
- the purchase price;

- the dividend rate, period and payment date and method of calculation for dividends;
- whether dividends will be cumulative or non-cumulative and, if cumulative, the date from which dividends will accumulate;
- any contractual limitations on our ability to declare, set aside or pay any dividends;
- the procedures for any auction and remarketing, if any;
- the provisions for a sinking fund, if any;
- the provisions for redemption or repurchase, if applicable, and any restrictions on our ability to exercise those redemption and repurchase rights;
- 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 the 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 the exchange period;
- voting rights, if any, of the preferred stock;
- preemptive rights, if any;
- restrictions on transfer, sale or other assignment, if any;
- whether interests in the preferred stock will be represented by depositary shares;
- a discussion of any material or special United States federal income tax considerations applicable to the preferred stock;
- the relative ranking and preferences of the preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs;
- any 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 if we liquidate, dissolve or wind up our affairs; and
- any other specific terms, preferences, rights or limitations of, or restrictions on, the preferred stock.

If we issue shares of preferred stock under this prospectus, after receipt of payment therefor, the shares will be fully paid and non-assessable.

The Delaware General Corporation Law provides that the holders of preferred stock will have the right to vote separately as a class on any proposal involving fundamental changes in the rights of holders of that preferred stock. This right is in addition to any voting rights provided for in the applicable certificate of designation.

Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of our common stock. Preferred stock could be issued quickly with terms designed to delay or prevent a change in control of our Company or make removal of management more difficult. Additionally, the issuance of preferred stock could have the effect of decreasing the market price of our common stock.

Series A Convertible Preferred Stock

Conversion

The Series A preferred stock is convertible into shares of common stock at any time following issuance at the option of the holder (subject to certain limitations described below). Each share of Series A preferred stock is convertible into approximately 5,285.4 shares of common stock pursuant to the terms of the Certificate of Designations, Preferences and Rights of Series A Convertible Preferred Stock, or the Certificate of Designations. Such ratio is calculated by dividing the stated value of each share of Series A preferred stock (\$25,000) by \$4.73.

Ranking; Dividends

The Company may not, directly or indirectly, incur any indebtedness or create a new class of equity that is expressly senior in right of payment to the Series A preferred stock without prior written consent of at least two-thirds of the outstanding Series A preferred stock holders. The Series A preferred stock holders are not entitled to receive cash dividends. In the event that the Company declares a stock dividend or otherwise makes a distribution to the common stock holders, the terms of the Series A preferred stock will be adjusted proportionately so that the holder after such dividend or distribution will be entitled to receive the aggregate number and kind of shares, evidences, rights, options, warrants or securities which, the holder would have owned if the Series A preferred stock had been converted immediately prior to the time of the distribution.

Subsequent Equity Sales

In the event that the Company issues additional shares of common stock and/or any rights, warrants, options or other securities or debt convertible, exercisable or exchangeable for shares of common stock or otherwise entitling any person to acquire shares of common stock in connection with a financing pursuant to which the effective net price to the Company for such securities, or the Effective Price, is less than 75% of the then conversion price, then subject to certain exceptions set forth in the Certificate of Designations, the conversion price will be reduced to the Effective Price.

Maximum Conversion

The Company will not effect any conversion of the Series A preferred stock if after giving effect to such conversion, the holder, together with any affiliate thereof, would beneficially own (as determined in accordance with Section 13(d) of the Exchange Act) on an as-converted basis with the common stock in excess of 4.99%, or the Maximum Percentage, of the number of shares of common stock outstanding immediately after giving effect to such conversion. A holder may increase the Maximum Percentage by providing written notice to the Company of its intention to exceed the Maximum Percentage at a time no earlier than 60 days after such notice.

Board and Observer Rights

For so long as any holder of Series A preferred stock beneficially owns at least 2,000,000 shares of common stock, such holder has the right to designate one representative, reasonably acceptable to the Company as a board observer, to the Company's board of directors. In lieu of the right to designate an observer to the board of directors, the holder may designate one representative, reasonably acceptable to the Company, to serve on the board of directors.

Redemption; Mandatory Conversion

Upon at least 60 days prior written notice to the Company, on November 11, 2016, any holder of Series A preferred stock has a one-time right to require the Company to redeem all or some of its shares of Series A preferred stock for cash that is specifically generated from the sale of the Company's equity securities. The redemption price per share is equal to the "stated value."

After November 11, 2016, the Company has the right to convert any outstanding shares of Series A preferred stock into shares of common stock, subject to certain volume restrictions, if the average of the high and low trading price of the common stock for any 10 out of 20 consecutive trading days exceeds the then conversion price.

Liquidation Preference

In the event of a liquidation, dissolution or winding up of the Company, then the holders of the Series A preferred stock are entitled to receive out of the assets of the Company legally available for distribution, prior to and in preference to distributions to the holders of common stock and either in preference to or pari passu with the holders of any other series of preferred stock that may be issued in the future, an amount equal to the "stated value" of the Series A preferred stock. The remaining assets of the Company will then be distributed to the holders of the Series A preferred stock and the holders of the common stock on an as converted basis.

Other Provisions

This section is a summary and may not describe every aspect of the common stock and Series A preferred stock that may be important to you. We urge you to read applicable Delaware law, our certificate of incorporation, including the Certificate of Designations, and bylaws, because they, and not this description, define your rights as a holder of common stock.

Purchase Contracts

We may issue purchase contracts, representing contracts obligating holders to purchase from us, and us to sell to the holders, a specific or varying number of common stock, preferred stock, warrants, depositary shares, debt securities, warrants or any combination of the above, at a future date or dates. Alternatively, the purchase contracts may obligate us to purchase from holders, and obligate holders to sell to us, a specific or varying number of common stock, preferred stock, warrants, depositary shares, debt securities, or any combination of the above. The price of the securities and other property subject to the purchase contracts may be fixed at the time the purchase contracts are issued or may be determined by reference to a specific formula set forth in the purchase contracts.

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The purchase contracts may be issued separately or as a part of a unit that consists of (a) a purchase contract and (b) one or more of the other securities that may be sold by us pursuant to this prospectus or any combination of the foregoing, which may secure the holders' obligations to purchase the securities under the purchase contract. The purchase contracts may require us to make periodic payments to the holders or require the holders to make periodic payments to us. These payments may be unsecured or prefunded and may be paid on a current or on a deferred basis. The purchase contracts may require holders to secure their obligations under the contracts in a manner specified in the applicable prospectus supplement.

We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from a current report on Form 8-K that we file with the SEC, forms of the purchase contracts and purchase contract agreement, if any. The applicable prospectus supplement will describe the terms of any purchase contracts in respect of which this prospectus is being delivered, including, to the extent applicable, the following:

- whether the purchase contracts obligate the holder or us to purchase or sell, or both purchase and sell, the securities subject to purchase under the purchase contract, and the nature and amount of each of those securities, or the method of determining those amounts;
- whether the purchase contracts are to be prepaid or not;
- whether the purchase contracts are to be settled by delivery, or by reference or linkage to the value, performance or level of the securities subject to purchase under the purchase contract;
- any acceleration, cancellation, termination or other provisions relating to the settlement of the purchase contracts; and
- whether the purchase contracts will be issued in fully registered or global form.

Warrants

We may issue warrants to purchase our securities or other rights, including rights to receive payment in cash or securities based on the value, rate or price of one or more specified commodities, currencies, securities or indices, or any combination of the foregoing. Warrants may be issued independently or together with any other securities that may be sold by us pursuant to this prospectus or any combination of the foregoing and may be attached to, or separate from, such securities. To the extent warrants that we issue are to be publicly-traded, each series of such warrants will be issued under a separate warrant agreement to be entered into between us and a warrant agent.

We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from a current report on Form 8-K that we file with the SEC, forms of the warrant and warrant agreement, if any. The prospectus supplement relating to any warrants that we may offer will contain the specific terms of the warrants and a description of the material provisions of the applicable warrant agreement, if any. These terms may include the following:

- the title of the warrants;
- the price or prices at which the warrants will be issued;
- the designation, amount and terms of the securities or other rights for which the warrants are exercisable;
- the designation and terms of the other securities, if any, with which the warrants are to be issued and the number of warrants issued with each other security;
- the aggregate number of warrants;
- any provisions for adjustment of the number or amount of securities receivable upon exercise of the warrants or the exercise price of the warrants;
- the price or prices at which the securities or other rights purchasable upon exercise of the warrants may be purchased;
- if applicable, the date on and after which the warrants and the securities or other rights purchasable upon exercise of the warrants will be separately transferable;
- a discussion of any material U.S. federal income tax considerations applicable to the exercise of the warrants;

- the date on which the right to exercise the warrants will commence, and the date on which the right will expire;
- the maximum or minimum number of warrants that may be exercised at any time;
- information with respect to book-entry procedures, if any; and
- any other terms of the warrants, including terms, procedures and limitations relating to the exchange and exercise of the warrants.

Exercise of Warrants. Each warrant will entitle the holder of warrants to purchase the amount of securities or other rights, at the exercise price stated or determinable in the prospectus supplement for the warrants. Warrants may be exercised at any time up to the close of business on the expiration date shown in the applicable prospectus supplement, unless otherwise specified in such prospectus supplement. After the close of business on the expiration date, if applicable, unexercised warrants will become void. Warrants may be exercised in the manner described in the applicable prospectus supplement. When the warrant holder makes the payment and properly completes and signs the warrant certificate at the corporate trust office of the warrant agent, if any, or any other office indicated in the prospectus supplement, we will, as soon as possible, forward the securities or other rights that the warrant holder has purchased. If the warrant holder exercises less than all of the warrants represented by the warrant certificate, we will issue a new warrant certificate for the remaining warrants.

Subscription Rights

We may issue rights to purchase our securities. The rights may or may not be transferable by the persons purchasing or receiving the rights. In connection with any rights offering, we may enter into a standby underwriting or other arrangement with one or more underwriters or other persons pursuant to which such underwriters or other persons would purchase any offered securities remaining unsubscribed for after such rights offering. In connection with a rights offering to holders of our capital stock a prospectus supplement will be distributed to such holders on the record date for receiving rights in the rights offering set by us.

We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from a current report on Form 8-K that we file with the SEC, forms of the subscription rights, standby underwriting agreement or other agreements, if any. The prospectus supplement relating to any rights that we offer will include specific terms relating to the offering, including, among other matters:

- the date of determining the security holders entitled to the rights distribution;
- the aggregate number of rights issued and the aggregate amount of securities purchasable upon exercise of the rights;
- the exercise price;
- the conditions to completion of the rights offering;
- the date on which the right to exercise the rights will commence and the date on which the rights will expire; and
- any applicable federal income tax considerations.

Each right would entitle the holder of the rights to purchase the principal amount of securities at the exercise price set forth in the applicable prospectus supplement. Rights may be exercised at any time up to the close of business on the expiration date for the rights provided in the applicable prospectus supplement. After the close of business on the expiration date, all unexercised rights will become void.

Holders may exercise rights as described in the applicable prospectus supplement. Upon receipt of payment and the rights certificate properly completed and duly executed at the corporate trust office of the rights agent, if any, or any other office indicated in the prospectus supplement, we will, as soon as practicable, forward the securities purchasable upon exercise of the rights. If less than all of the rights issued in any rights offering are exercised, we may offer any unsubscribed securities directly to persons other than stockholders, to or through agents, underwriters or dealers or through a combination of such methods, including pursuant to standby underwriting arrangements, as described in the applicable prospectus supplement.

Depositary Shares

General. We may offer fractional shares of preferred stock, rather than full shares of preferred stock. If we decide to offer fractional shares of our preferred stock, we will issue receipts for depositary shares. Each depositary share will represent a fraction of a share of a particular series of our preferred stock, and the applicable prospectus supplement will indicate that fraction. The shares of preferred stock represented by depositary shares will be deposited under a deposit agreement between us and a depositary that is a bank or trust company that meets certain requirements and is selected by us. The depositary will be specified in the applicable prospectus supplement. Each owner of a depositary share will be entitled to all of the rights and preferences of the preferred stock represented by the depositary share.

The depositary shares will be evidenced by depositary receipts issued pursuant to the deposit agreement. Depositary receipts will be distributed to those persons purchasing the fractional shares of our preferred stock in accordance with the terms of the offering. We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from a current report on Form 8-K that we file with the SEC, forms of the deposit agreement, form of certificate of designation of underlying preferred stock, form of depositary receipts and any other related agreements.

Dividends and Other Distributions. The depositary will distribute all cash dividends or other cash distributions received by it in respect of the preferred stock to the record holders of depositary shares relating to such preferred shares in proportion to the numbers of depositary shares held on the relevant record date.

In the event of a distribution other than in cash, the depositary will distribute securities or property received by it to the record holders of depositary shares in proportion to the numbers of depositary shares held on the relevant record date, unless the depositary determines that it is not feasible to make such distribution. In that case, the depositary may make the distribution by such method as it deems equitable and practicable. One such possible method is for the depositary to sell the securities or property and then distribute the net proceeds from the sale as provided in the case of a cash distribution.

Redemption of Depositary Shares. Whenever we redeem the preferred stock, the depositary will redeem a number of depositary shares representing the same number of shares of preferred stock so redeemed. If fewer than all of the depositary shares are to be redeemed, the depositary shares to be redeemed will be selected by lot, pro rata or by any other equitable method as the depositary may determine.

Voting of Underlying Shares. Upon receipt of notice of any meeting at which the holders of our preferred stock of any series are entitled to vote, the depositary will mail the information contained in the notice of the meeting to the record holders of the depositary shares relating to that series of preferred stock. Each record holder of the depositary shares on the record date will be entitled to instruct the depositary as to the exercise of the voting rights represented by the number of shares of preferred stock underlying the holder's depositary shares. The depositary will endeavor, to the extent it is practical to do so, to vote the number of whole shares of preferred stock underlying such depositary shares in accordance with such instructions. We will agree to take all action that the depositary may deem reasonably necessary in order to enable the depositary to do so. To the extent the depositary does not receive specific instructions from the holders of depositary shares relating to such preferred shares, it will abstain from voting such shares of preferred stock.

Withdrawal of Shares. Upon surrender of depositary receipts representing any number of whole shares at the depositary's office, unless the related depositary shares previously have been called for redemption, the holder of the depositary shares evidenced by the depositary receipts will be entitled to delivery of the number of whole shares of the related series of preferred stock and all money and other property, if any, underlying such depositary shares. However, once such an exchange is made, the preferred stock cannot thereafter be re-deposited in exchange for depositary shares. Holders of depositary shares will be entitled to receive whole shares of the related series of preferred stock on the basis set forth in the applicable prospectus supplement. If the depositary receipts delivered by the holder evidence a number of depositary shares representing more than the number of whole shares of preferred stock of the related series to be withdrawn, the depositary will deliver to the holder at the same time a new depositary receipt evidencing the excess number of depositary shares.

Amendment and Termination of Depositary Agreement. The form of depositary receipt evidencing the depositary shares and any provision of the applicable depositary agreement may at any time be amended by agreement between us and the depositary. We may, with the consent of the depositary, amend the depositary agreement from time to time in any manner that we desire. However, if the amendment would materially and adversely alter the rights of the existing holders of depositary shares, the amendment would need to be approved by the holders of at least a majority of the depositary shares then outstanding.

The depositary agreement may be terminated by us or the depositary if:

- all outstanding depositary shares have been redeemed; or
- there has been a final distribution in respect of the shares of preferred stock of the applicable series in connection with our liquidation, dissolution or winding up and such distribution has been made to the holders of depositary receipts.

Resignation and Removal of Depositary. The depositary may resign at any time by delivering to us notice of its election to do so. We may remove a depositary at any time. Any resignation or removal will take effect upon the appointment of a successor depositary and its acceptance of appointment.

Charges of Depositary. We will pay all transfer and other taxes and governmental charges arising solely from the existence of any depositary arrangements. We will pay all charges of each depositary in connection with the initial deposit of the preferred shares of any series, the initial issuance of the depositary shares, any redemption of such preferred shares and any withdrawals of such preferred shares by holders of depositary shares. Holders of depositary shares will be required to pay any other transfer taxes.

Notices. Each depositary will forward to the holders of the applicable depositary shares all notices, reports and communications from us which are delivered to such depositary and which we are required to furnish the holders of the preferred stock represented by such depositary shares.

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Miscellaneous. The depositary agreement may contain provisions that limit our liability and the liability of the depositary to the holders of depositary shares. Both the depositary and we are also entitled to an indemnity from the holders of the depositary shares prior to bringing, or defending against, any legal proceeding. We or any depositary may rely upon written advice of counsel or accountants, or information provided by persons presenting preferred shares for deposit, holders of depositary shares or other persons believed by us to be competent and on documents believed by us or them to be genuine.

Debt Securities

As used in this prospectus, the term “debt securities” means the debentures, notes, bonds and other evidences of indebtedness that we may issue from time to time. The debt securities will either be senior debt securities, senior subordinated debt or subordinated debt securities. We may also issue convertible debt securities. Debt securities may be issued under an indenture (which we refer to herein as an Indenture), which are contracts entered into between us and a trustee to be named therein. The Indenture has been filed as an exhibit to the registration statement of which this prospectus forms a part. We may issue debt securities and incur additional indebtedness other than through the offering of debt securities pursuant to this prospectus. It is likely that convertible debt securities will not be issued under an Indenture.

The debt securities may be fully and unconditionally guaranteed on a secured or unsecured senior or subordinated basis by one or more guarantors, if any. The obligations of any guarantor under its guarantee will be limited as necessary to prevent that guarantee from constituting a fraudulent conveyance under applicable law. In the event that any series of debt securities will be subordinated to other indebtedness that we have outstanding or may incur, the terms of the subordination will be set forth in the prospectus supplement relating to the subordinated debt securities.

We may issue debt securities from time to time in one or more series, in each case with the same or various maturities, at par or at a discount. Unless indicated in a prospectus supplement, we may issue additional debt securities of a particular series without the consent of the holders of the debt securities of such series outstanding at the time of the issuance. Any such additional debt securities, together with all other outstanding debt securities of that series, will constitute a single series of debt securities under the applicable Indenture and will be equal in ranking.

Should an Indenture relate to unsecured indebtedness, in the event of a bankruptcy or other liquidation event involving a distribution of assets to satisfy our outstanding indebtedness or an event of default under a loan agreement relating to secured indebtedness of our company or its subsidiaries, the holders of such secured indebtedness, if any, would be entitled to receive payment of principal and interest prior to payments on the unsecured indebtedness issued under an Indenture.

Each prospectus supplement will describe the terms relating to the specific series of debt securities. These terms will include some or all of the following:

- the title of debt securities and whether the debt securities are senior or subordinated;
- any limit on the aggregate principal amount of debt securities of such series;
- the percentage of the principal amount at which the debt securities of any series will be issued;
- the ability to issue additional debt securities of the same series;
- the purchase price for the debt securities and the denominations of the debt securities;
- the specific designation of the series of debt securities being offered;
- the maturity date or dates of the debt securities and the date or dates upon which the debt securities are payable and the rate or rates at which the debt securities of the series shall bear interest, if any, which may be fixed or variable, or the method by which such rate shall be determined;
- the basis for calculating interest;
- the date or dates from which any interest will accrue or the method by which such date or dates will be determined;
- the duration of any deferral period, including the period during which interest payment periods may be extended;
- whether the amount of payments of principal of (and premium, if any) or interest on the debt securities may be determined with reference to any index, formula or other method, such as one or more currencies, commodities, equity indices or other indices, and the manner of determining the amount of such payments;
- the dates on which we will pay interest on the debt securities and the regular record date for determining who is entitled to the interest payable on any interest payment date;

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- the place or places where the principal of (and premium, if any) and interest on the debt securities will be payable, where any securities may be surrendered for registration of transfer, exchange or conversion, as applicable, and notices and demands may be delivered to or upon us pursuant to the applicable Indenture;
- the rate or rates of amortization of the debt securities;
- any terms for the attachment to the debt securities of warrants, options or other rights to purchase or sell our securities;
- if the debt securities will be secured by any collateral and, if so, a general description of the collateral and the terms and provisions of such collateral security, pledge or other agreements;
- if we possess the option to do so, the periods within which and the prices at which we may redeem the debt securities, in whole or in part, pursuant to optional redemption provisions, and the other terms and conditions of any such provisions;
- our obligation or discretion, if any, to redeem, repay or purchase debt securities by making periodic payments to a sinking fund or through an analogous provision or at the option of holders of the debt securities, and the period or periods within which and the price or prices at which we will redeem, repay or purchase the debt securities, in whole or in part, pursuant to such obligation, and the other terms and conditions of such obligation;
- the terms and conditions, if any, regarding the option or mandatory conversion or exchange of debt securities;
- the period or periods within which, the price or prices at which and the terms and conditions upon which any debt securities of the series may be redeemed, in whole or in part at our option and, if other than by a board resolution, the manner in which any election by us to redeem the debt securities shall be evidenced;
- any restriction or condition on the transferability of the debt securities of a particular series;
- the portion, or methods of determining the portion, of the principal amount of the debt securities which we must pay upon the acceleration of the maturity of the debt securities in connection with any event of default;
- the currency or currencies in which the debt securities will be denominated and in which principal, any premium and any interest will or may be payable or a description of any units based on or relating to a currency or currencies in which the debt securities will be denominated;
- provisions, if any, granting special rights to holders of the debt securities upon the occurrence of specified events;
- any deletions from, modifications of or additions to the events of default or our covenants with respect to the applicable series of debt securities, and whether or not such events of default or covenants are consistent with those contained in the applicable Indenture;
- any limitation on our ability to incur debt, redeem stock, sell our assets or other restrictions;
- the application, if any, of the terms of the applicable Indenture relating to defeasance and covenant defeasance (which terms are described below) to the debt securities;
- what subordination provisions will apply to the debt securities;
- the terms, if any, upon which the holders may convert or exchange the debt securities into or for our securities or property;
- whether we are issuing the debt securities in whole or in part in global form;
- any change in the right of the trustee or the requisite holders of debt securities to declare the principal amount thereof due and payable because of an event of default;
- the depositary for global or certificated debt securities, if any;

- any material federal income tax consequences applicable to the debt securities, including any debt securities denominated and made payable, as described in the prospectus supplements, in foreign currencies, or units based on or related to foreign currencies;
- any right we may have to satisfy, discharge and defease our obligations under the debt securities, or terminate or eliminate restrictive covenants or events of default in the Indentures, by depositing money or U.S. government obligations with the trustee of the Indentures;
- the names of any trustees, depositories, authenticating or paying agents, transfer agents or registrars or other agents with respect to the debt securities;
- to whom any interest on any debt security shall be payable, if other than the person in whose name the security is registered, on the record date for such interest, the extent to which, or the manner in which, any interest payable on a temporary global debt security will be paid;
- if the principal of or any premium or interest on any debt securities is to be payable in one or more currencies or currency units other than as stated, the currency, currencies or currency units in which it shall be paid and the periods within and terms and conditions upon which such election is to be made and the amounts payable (or the manner in which such amount shall be determined);
- the portion of the principal amount of any debt securities which shall be payable upon declaration of acceleration of the maturity of the debt securities pursuant to the applicable Indenture;
- if the principal amount payable at the stated maturity of any debt security of the series will not be determinable as of any one or more dates prior to the stated maturity, the amount which shall be deemed to be the principal amount of such debt securities as of any such date for any purpose, including the principal amount thereof which shall be due and payable upon any maturity other than the stated maturity or which shall be deemed to be outstanding as of any date prior to the stated maturity (or, in any such case, the manner in which such amount deemed to be the principal amount shall be determined); and
- any other specific terms of the debt securities, including any modifications to the events of default under the debt securities and any other terms which may be required by or advisable under applicable laws or regulations.

Unless otherwise specified in the applicable prospectus supplement, we do not anticipate the debt securities will be listed on any securities exchange. Holders of the debt securities may present registered debt securities for exchange or transfer in the manner described in the applicable prospectus supplement. Except as limited by the applicable Indenture, we will provide these services without charge, other than any tax or other governmental charge payable in connection with the exchange or transfer.

Debt securities may bear interest at a fixed rate or a variable rate as specified in the prospectus supplement. In addition, if specified in the prospectus supplement, we may sell debt securities bearing no interest or interest at a rate that at the time of issuance is below the prevailing market rate, or at a discount below their stated principal amount. We will describe in the applicable prospectus supplement any special federal income tax considerations applicable to these discounted debt securities.

We may issue debt securities with the principal amount payable on any principal payment date, or the amount of interest payable on any interest payment date, to be determined by referring to one or more currency exchange rates, commodity prices, equity indices or other factors. Holders of such debt securities may receive a principal amount on any principal payment date, or interest payments on any interest payment date, that are greater or less than the amount of principal or interest otherwise payable on such dates, depending upon the value on such dates of applicable currency, commodity, equity index or other factors. The applicable prospectus supplement will contain information as to how we will determine the amount of principal or interest payable on any date, as well as the currencies, commodities, equity indices or other factors to which the amount payable on that date relates and certain additional tax considerations.

Units

We may issue units consisting of any combination of the other types of securities offered under this prospectus in one or more series. We may evidence each series of units by unit certificates that we may issue under a separate agreement. We may enter into unit agreements with a unit agent. Each unit agent, if any, may be a bank or trust company that we select. We will indicate the name and address of the unit agent, if any, in the applicable prospectus supplement relating to a particular series of units. Specific unit agreements, if any, will contain additional important terms and provisions. We will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from a current report that we file with the SEC, the form of unit and the form of each unit agreement, if any, relating to units offered under this prospectus.

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If we offer any units, certain terms of that series of units will be described in the applicable prospectus supplement, including, without limitation, the following, as applicable

- the title of the series of units;
- identification and description of the separate constituent securities comprising the units;
- the price or prices at which the units will be issued;
- the date, if any, on and after which the constituent securities comprising the units will be separately transferable;
- a discussion of certain United States federal income tax considerations applicable to the units; and
- any other material terms of the units and their constituent securities.

FORMS OF SECURITIES

Each security may 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 securities. Certificated securities 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, warrants or units 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.

Registered Global Securities

We may issue the securities in the form of one or more fully registered global securities that will be deposited with a depositary or its nominee identified in the applicable prospectus supplement and registered in the name of that depositary or 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.

The 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 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 applicable indenture, warrant agreement or unit agreement.

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 applicable indenture, warrant agreement or unit agreement. 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 applicable indenture, warrant agreement or unit agreement. 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 applicable indenture, warrant agreement or unit agreement, 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.

Payments to holders with respect to 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. None of the Company, the trustees, the warrant agents, the unit agents or any other agent of the Company, agent of the trustees, the warrant agents or unit agents 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 payment or distribution to holders of 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 or registered in "street name," and will be the responsibility of those participants.

If the depositary for any of these securities represented by a registered global security is at any time unwilling or unable to continue as depositary or ceases to be a clearing agency registered under the Exchange Act and a successor depositary 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 depositary. Any securities issued in definitive form in exchange for a registered global security will be registered in the name or names that the depositary gives to the relevant trustee, warrant agent, unit agent or other relevant agent of ours or theirs. It is expected that the depositary's instructions will be based upon directions received by the depositary from participants with respect to ownership of beneficial interests in the registered global security that had been held by the depositary.

LEGAL MATTERS

Unless otherwise indicated in the applicable prospectus supplement, the validity of the securities offered by this prospectus will be passed upon for us by Ellenoff Grossman & Schole LLP, New York, New York. If legal matters in connection with offerings made by this prospectus are passed on by counsel for the underwriters, dealers or agents, if any, that counsel will be named in the applicable prospectus supplement.

EXPERTS

The consolidated financial statements of Anixa Biosciences, Inc. and subsidiaries as of and for the years ended October 31, 2018 and 2017 have been incorporated by reference in the registration statement in reliance upon the report of Haskell & White LLP, independent registered public accounting firm, and upon the authority of said firm as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We file annual, quarter and periodic reports, proxy statements and other information with the Securities and Exchange Commission using the Commission's EDGAR system. The Commission maintains a web site that contains reports, proxy and information statements and other information regarding registrants that file electronically with the Commission. The address of such site is <http://www.sec.gov>.

INCORPORATION OF DOCUMENTS BY REFERENCE

We are "incorporating by reference" in this prospectus certain documents we file with the SEC, which means that we can disclose important information to you by referring you to those documents. The information in the documents incorporated by reference is considered to be part of this prospectus. Statements contained in documents that we file with the SEC and that are incorporated by reference in this prospectus will automatically update and supersede information contained in this prospectus, including information in previously filed documents or reports that have been incorporated by reference in this prospectus, to the extent the new information differs from or is inconsistent with the old information. We have filed or may file the following documents with the SEC and they are incorporated herein by reference as of their respective dates of filing.

1. Our Annual Report on Form 10-K for the year ended October 31, 2018 filed with the SEC on January 11, 2019;
2. Our Quarterly Report on Form 10-Q for the quarter ended January 31, 2019 filed with the SEC on March 13, 2019;
3. Our Definitive Proxy Statement on Schedule 14A filed with the SEC on August 17, 2018;
4. Our Current Reports on Form 8-K filed with the SEC on January 25, 2019 and May 23, 2019; and
5. The description of our common stock contained in our Current Report on Form 8-K filed on March 31, 2014 and as it may further be amended from time to time.

All documents that we filed with the SEC pursuant to Sections 13(a), 13(c), 14, and 15(d) of the Exchange Act subsequent to the date of this registration statement and prior to the filing of a post-effective amendment to this registration statement that indicates that all securities offered under this prospectus have been sold, or that deregisters all securities then remaining unsold, will be deemed to be incorporated in this registration statement by reference and to be a part hereof from the date of filing of such documents.

Any statement contained in a document incorporated or deemed to be incorporated by reference in this prospectus shall be deemed modified, superseded or replaced for purposes of this prospectus to the extent that a statement contained in this prospectus, or in any subsequently filed document that also is deemed to be incorporated by reference in this prospectus, modifies, supersedes or replaces such statement. Any statement so modified, superseded or replaced shall not be deemed, except as so modified, superseded or replaced, to constitute a part of this prospectus. None of the information that we disclose under Items 2.02 or 7.01 of any Current Report on Form 8-K or any corresponding information, either furnished under Item 9.01 or included as an exhibit therein, that we may from time to time furnish to the SEC will be incorporated by reference into, or otherwise included in, this prospectus, except as otherwise expressly set forth in the relevant document. Subject to the foregoing, all information appearing in this prospectus is qualified in its entirety by the information appearing in the documents incorporated by reference.

You may request, orally or in writing, a copy of these documents, which will be provided to you at no cost (other than exhibits, unless such exhibits are specifically incorporate by reference), by contacting Dr. Amit Kumar, c/o Anixa Biosciences, Inc., at 3150 Almaden Expressway, Suite 250, San Jose, CA 95118. Our telephone number is (408) 708-9808. Information about us is also available at our website at <https://www.anixa.com/>. However, the information in our website is not a part of this prospectus and is not incorporated by reference.

The information in this prospectus is not complete and may be changed. We may not sell the securities until the Registration Statement filed with the Securities and Exchange Commission, of which this prospectus is a part, is effective. This prospectus is not an offer to sell these securities and is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED JUNE 11, 2019

Prospectus

**ANIXA BIOSCIENCES, INC.
Up to \$50,000,000
Common Stock**

We have entered into an At Market Issuance Sales Agreement with B. Riley FBR, Inc. (“B. Riley FBR”) relating to the sale of our common stock offered by this prospectus. In accordance with the terms of the At Market Issuance Sales Agreement, we may offer and sell up to \$50,000,000 of shares of our common stock, \$0.01 par value per share, from time to time through B. Riley FBR acting as agent.

Our common stock is listed on The NASDAQ Capital Market under the symbol “ANIX.” The last reported sale price of our common stock on The NASDAQ Capital Market on June 10, 2019 was \$4.28 per share. As of June 10, 2019, the aggregate market value of our outstanding common stock held by non-affiliates was \$83,002,683 based on 20,096,743 outstanding shares of common stock, of which 17,474,249 shares are held by non-affiliates, and a per share price of \$4.75, based upon the closing sale price of our common stock on May 7, 2019.

Sales of our common stock, if any, under this prospectus may be made in sales deemed to be “at the market equity offerings” as defined in Rule 415 promulgated under the Securities Act of 1933, as amended, or the Securities Act. B. Riley FBR is not required to sell any specific dollar amount of shares, but will use commercially reasonable efforts to sell on our behalf all of the shares of common stock requested to be sold by us, consistent with its normal trading and sales practices, on mutually agreed terms between B. Riley FBR and us. There is no arrangement for funds to be received in any escrow, trust or similar arrangement.

B. Riley FBR will be entitled to compensation at a fixed commission rate of 3% of the gross sales price per share sold. In connection with the sale of our common stock on our behalf, B. Riley FBR will be deemed to be an “underwriter” within the meaning of the Securities Act and the compensation of B. Riley FBR will be deemed to be underwriting commissions or discounts. We have also agreed to provide indemnification and contribution to B. Riley FBR with respect to certain liabilities, including liabilities under the Securities Act.

Investing in our securities involves a high degree of risk. You should read this prospectus and the information incorporated herein by reference carefully before you make your investment decision. See “Risk Factors” beginning on page S-5 of this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

B. RILEY FBR

The date of this prospectus is _____, 2019

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You should rely only on the information we have provided or incorporated by reference in this prospectus or in any prospectus supplement. We have not authorized anyone to provide you with information different from that contained or incorporated by reference in this prospectus or in any prospectus supplement.

This prospectus and any prospectus supplement is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so.

You should assume that the information contained in this prospectus and in any prospectus supplement is accurate only as of their respective dates and that any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus or any prospective supplement for any sale of securities.

⁷ To be updated by printer

ABOUT THIS PROSPECTUS

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

This prospectus describes the specific terms of the common stock we are offering and also adds to, and updates information contained in the documents incorporated by reference into this prospectus. To the extent there is a conflict between the information contained in this prospectus, on the one hand, and the information contained in any document incorporated by reference into this prospectus that was filed with the SEC before the date of this prospectus, on the other hand, you should rely on the information in this prospectus. If any statement in one of these documents is inconsistent with a statement in another document having a later date—for example, a document incorporated by reference into this prospectus—the statement in the document having the later date modifies or supersedes the earlier statement.

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

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

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

Unless otherwise stated, all references to “us,” “our,” “Anixa,” “we,” the “Company” and similar designations refer to Anixa Biosciences, Inc. and its subsidiaries. Our logo, trademarks and service marks are the property of Anixa Biosciences, Inc. and its subsidiaries. Other trademarks or service marks appearing in this prospectus are the property of their respective holders.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and any accompanying prospectus supplement and the documents incorporated by reference herein may contain forward looking statements that involve risks and uncertainties. All statements other than statements of historical fact contained in this prospectus and any accompanying prospectus supplement and the documents incorporated by reference herein, including statements regarding future events, our future financial performance, business strategy, and plans and objectives of management for future operations, are forward-looking statements. We have attempted to identify forward-looking statements by terminology including “anticipates,” “believes,” “can,” “continue,” “could,” “estimates,” “expects,” “intends,” “may,” “plans,” “potential,” “predicts,” “should,” or “will” or the negative of these terms or other comparable terminology. Although we do not make forward looking statements unless we believe we have a reasonable basis for doing so, we cannot guarantee their accuracy. These statements are only predictions and involve known and unknown risks, uncertainties and other factors, including the risks outlined under “Risk Factors” or elsewhere in this prospectus and the documents incorporated by reference herein, which may cause our or our industry’s actual results, levels of activity, performance or achievements expressed or implied by these forward-looking statements. Moreover, we operate in a highly regulated, very competitive, and rapidly changing environment. New risks emerge from time to time and it is not possible for us to predict all risk factors, nor can we address the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause our actual results to differ materially from those contained in any forward-looking statements.

We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy, short term and long term business operations, and financial needs. These forward-looking statements are subject to certain risks and uncertainties that could cause our actual results to differ materially from those reflected in the forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed in this prospectus, and in particular, the risks discussed below and under the heading “Risk Factors” and those discussed in other documents we file with the SEC. The following discussion should be read in conjunction with the consolidated financial statements for the fiscal years ended October 31, 2018 and 2017 and notes incorporated by reference herein. We undertake no obligation to revise or publicly release the results of any revision to these forward-looking statements, except as required by law. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this prospectus may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statement.

You should not place undue reliance on any forward-looking statement, each of which applies only as of the date of this prospectus. Except as required by law, we undertake no obligation to update or revise publicly any of the forward-looking statements after the date of this prospectus to conform our statements to actual results or changed expectations.

Any forward-looking statement you read in this prospectus, any prospectus supplement or any document incorporated by reference reflects our current views with respect to future events and is subject to these and other risks, uncertainties and assumptions relating to our operations, operating results, growth strategy and liquidity. You should not place undue reliance on these forward-looking statements because such statements speak only as to the date when made. We assume no obligation to publicly update or revise these forward-looking statements for any reason, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future, except as otherwise required by applicable law. You are advised, however, to consult any further disclosures we make on related subjects in our reports on Forms 10-Q, 8-K and 10-K filed with the SEC. You should understand that it is not possible to predict or identify all risk factors. Consequently, you should not consider any such list to be a complete set of all potential risks or uncertainties.

PROSPECTUS SUMMARY

This summary highlights selected information contained elsewhere in this prospectus. This summary does not contain all the information that you should consider before investing in our Company. You should carefully read the entire prospectus, including all documents incorporated by reference herein. In particular, attention should be directed to our "Risk Factors," "Information With Respect to the Company," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the financial statements and related notes thereto contained herein or otherwise incorporated by reference hereto, before making an investment decision.

Business Overview

Our primary operations involve research and development of cancer therapeutics and diagnostics. Our cancer therapeutics program consists of development of chimeric endocrine receptor T-cell ("CER-T") technology, a novel form of CAR-T technology, initially focused on treating ovarian cancer. Our cancer diagnostics program consists of development of the artificial intelligence (AI) driven Cchek™ liquid biopsy platform for early cancer detection.

Our subsidiary, Certainty Therapeutics, Inc. ("Certainty"), is developing immuno-therapy drugs against cancer. Certainty holds an exclusive worldwide, royalty-bearing license to use certain intellectual property owned or controlled by The Wistar Institute ("Wistar") relating to Wistar's CER-T technology. We have initially focused on the development of a treatment for ovarian cancer, but we may also pursue applications of the technology for the development of treatments for additional solid tumors. The license agreement requires Certainty to make certain cash and equity payments to Wistar. With respect to Certainty's equity obligations to Wistar, Certainty issued to Wistar shares of its common stock equal to five percent (5%) of the common stock of Certainty.

Certainty, in collaboration with the H. Lee Moffitt Cancer Center and Research Institute, Inc. ("Moffitt"), is advancing toward human clinical testing its CER-T technology for treating ovarian cancer. Certainty is working with researchers at Moffitt to complete studies necessary to submit an Investigational New Drug ("IND") application with the U.S. Food and Drug Administration ("FDA"). We anticipate filing the IND with the FDA in the fall of 2019, with human clinical trials commencing thereafter, by late 2019 or early 2020.

Our subsidiary, Anixa Diagnostics Corporation ("Anixa Diagnostics"), is developing Cchek™, an AI driven platform of non-invasive blood tests for the early detection of cancer which is based on the body's immune response to the presence of a malignancy. We have demonstrated the efficacy of Cchek™ with 20 different types of cancer, including: breast, lung, colon, melanoma, ovarian, liver, thyroid, pancreatic, appendiceal, uterine, osteosarcoma, leiomyosarcoma, liposarcoma, vulvar, prostate, bladder, cervical, head and neck, gastric and testicular cancers. Breast, lung, colon and prostate cancers represent the four largest categories of cancer worldwide.

We are currently developing tests for the detection of multiple types of cancer and are working with our development and commercialization partner, ResearchDx, a CLIA-certified laboratory, to launch Cchek™ Prostate Cancer Confirmation as a Laboratory Developed Test by the end of the third quarter of 2019.

Over the next several quarters, we expect the development of Certainty's CER-T technology and Cchek™ to be the primary focus of the Company. As part of our legacy operations, the Company remains engaged in limited patent licensing activities in the area of encrypted audio/video conference calling. We do not expect these activities to be a significant part of the Company's ongoing operations nor do we expect these activities to require material financial resources or attention of senior management.

Over the past several quarters, our revenue was derived from technology licensing and the sale of patented technologies, including revenue from the settlement of litigation. In addition to Certainty and Anixa Diagnostics, the Company may make investments in and form new companies to develop additional emerging technologies.

Corporate Information

Our principal executive offices are located at 3150 Almaden Expressway, Suite 250, San Jose, CA 95118, our telephone number is (408) 708-9808, and our Internet website address is <https://www.anixa.com/>. The information on our website is not a part of, or incorporated in, this prospectus.

THE OFFERING

Common stock offered by us:	Shares of our common stock having an aggregate offering price of up to \$50,000,000.
Manner of offering	“At the market offering” that may be made from time to time through our sales agent, B. Riley FBR. See “Plan of Distribution” on page S-12 of this prospectus.
Use of Proceeds	We intend to use the net proceeds from these sales for general corporate purposes, including, but not limited to, ongoing clinical work, the development of new cancer related technologies, investing in or acquiring companies that are synergistic with or complimentary to our technologies, and licensing activities related to our current and future product candidates and working capital. See “Use of Proceeds” on page S-8 of this prospectus.
Risk Factors	Your investment in our securities involves substantial risks. You should consider the “Risk Factors” and the “Cautionary Note Regarding Forward-Looking Statements” included and incorporated by reference in this prospectus and the accompanying prospectus, including the risk factors incorporated by reference from our filings with the SEC.
NASDAQ symbol	Capital Market “ANIX”

RISK FACTORS

Investing in our securities involves a high degree of risk. Before deciding whether to invest in our securities, you should carefully consider the risk factors we describe in this prospectus and in any related free writing prospectus that we may authorize to be provided to you or in any report incorporated by reference into this prospectus, including our Annual Report on Form 10-K for the year ended October 31, 2018, or any Annual Report on Form 10-K or Quarterly Report on Form 10-Q that is incorporated by reference into this prospectus after the date of this prospectus. Although we discuss key risks in those risk factor descriptions, additional risks not currently known to us or that we currently deem immaterial also may impair our business. Our subsequent filings with the SEC may contain amended and updated discussions of significant risks. We cannot predict future risks or estimate the extent to which they may affect our financial performance.

Risks Related to our Financial Condition and Operations and our Common Stock

We have a history of losses and may incur additional losses in the future.

On a cumulative basis we have sustained substantial losses and negative cash flows from operations since our inception. As of January 31, 2019, our accumulated deficit was approximately \$175,052,000. As of January 31, 2019, we had approximately \$5,903,000 in cash and cash equivalents and short-term investments, and working capital of approximately \$4,909,000. In fiscal year 2018, we incurred losses of approximately \$14,243,000 and we experienced negative cash flows from operations of approximately \$4,273,000. We expect to incur material research and development expenses and to continue incurring significant legal and general and administrative expenses in connection with our operations. As a result, we anticipate that we will incur losses in the future.

We will need additional funding in the future which may not be available on acceptable terms, or at all, and, if available, may result in dilution to our stockholders.

Based on currently available information as of June 11, 2019, we believe that our existing cash, cash equivalents, short-term investments and expected cash flows will be sufficient to fund our activities for the next 12 months. However, our projections of future cash needs and cash flows may differ from actual results. If current cash on hand, cash equivalents, short term investments and cash that may be generated from our business operations are insufficient to continue to operate our business, or if we elect to invest in or acquire a company or companies that are synergistic with or complimentary to our technologies, we may be required to obtain more working capital. We may seek to obtain working capital through sales of our equity securities or through bank credit facilities or public or private debt from various financial institutions where possible. We cannot be certain that additional funding will be available on acceptable terms, or at all. If we do identify sources for additional funding, the sale of additional equity securities or convertible debt could result in dilution to our stockholders. Additionally, the sale of equity securities or issuance of debt securities may be subject to certain security holder approvals or may result in the downward adjustment of the exercise or conversion price of our outstanding securities. We can give no assurance that we will generate sufficient cash flows in the future to satisfy our liquidity requirements or sustain future operations, or that other sources of funding, such as sales of equity or debt, would be available or would be approved by our security holders, if needed, on favorable terms or at all. If we fail to obtain additional working capital as and when needed, such failure could have a material adverse impact on our business, results of operations and financial condition. Furthermore, such lack of funds may inhibit our ability to respond to competitive pressures or unanticipated capital needs, or may force us to reduce operating expenses, which would significantly harm the business and development of operations.

Failure to effectively manage our potential growth could place strains on our managerial, operational and financial resources and could adversely affect our business and operating results.

Our business strategy and potential growth may place a strain on managerial, operational and financial resources and systems. Although we may not grow as we expect, if we fail to manage our growth effectively or to develop and expand our managerial, operational and financial resources and systems, our business and financial results will be materially harmed.

We may use our financial and human resources to pursue a particular research program or product candidate and fail to capitalize on programs or product candidates that may be more profitable or for which there is a greater likelihood of success.

Because we have limited resources, we may forego or delay pursuit of opportunities with certain programs or product candidates or for indications that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on current and future research and development programs for product candidates may not yield any commercially viable products. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through strategic collaboration, licensing or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate, or we may allocate internal resources to a product candidate which it would have been more advantageous to enter into a partnering arrangement.

We are currently subject to a putative shareholder derivative complaint which could distract our management and could result in substantial costs or large judgments against us.

On November 5, 2018, a putative shareholder derivative complaint was filed in the Court of Chancery of the State of Delaware, captioned Howland v. Kumar et al., C.A. No. 2018-0804-KSJM (the “Howland Matter”), that alleges claims for breach of fiduciary duty and unjust enrichment. The complaint named as defendants certain of the Company’s current and former officers and directors, and the Company is named solely as a nominal defendant. The complaint seeks, on behalf of the Company, a declaration that the defendant officers and directors breached their fiduciary duties, unspecified damages, certain changes to the Company’s internal procedures, and an award of the plaintiff’s attorneys’ fees and costs. The defendants moved to dismiss the complaint on November 29, 2018, which motion is still pending before the Court of Chancery. If the Howland Matter is not dismissed at the pleading stage, we will be required to devote significant time to the adjudication of the matter which will distract our management and may have an adverse impact on our business, operating results and financial condition. Further, if the Howland Matter is not dismissed, we could incur substantial costs related to the adjudication of the Howland Matter that may not be covered by insurance. In addition, we are obligated pursuant to Article 10 of our amended and restated bylaws, or our bylaws, to indemnify any person who was or is a party or is threatened to be made a party to, or testifies in, any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative in nature, by reason of the fact that such person is or was a director or officer of the Company against expenses (including attorneys’ fees and disbursements), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding to the full extent permitted by law. Accordingly, we may incur substantial costs related to the indemnification of our current and former officers and directors that were named as defendants in the Howland Matter. While we have director and officer insurance, there is no assurance that our policy will cover any or all of the costs associated with the indemnification of our current and former officers and directors that were named as defendants in the Howland Matter.

We have issued a significant number of securities pursuant to our incentive plans and may continue to do so in the future. The vesting and, if applicable, exercise of these securities and the sale of the shares of common stock issuable thereunder may dilute your percentage ownership interest and may also result in downward pressure on the price of our common stock.

As of the date of this prospectus, we have issued and outstanding options to purchase 7,258,668 shares of our common stock with a weighted average exercise price of \$2.73 and 1,500,000 restricted stock awards (including options to purchase 1,500,000 shares of our common stock and a restricted stock award of 1,500,000 shares of our common stock that vest based upon achievement of certain stock price based milestones issued to our president and chief executive officer in May 2018). Further, as of the date of this report, our Board of Directors and Compensation Committee have the authority to issue awards totaling an additional 2,907,200 shares of our common stock (not including any additional shares of common stock that will be available for issuance pursuant to the evergreen provisions in our 2010 Share Incentive Plan and our 2018 Share Incentive Plan on the first business day of the 2020 calendar year). Additionally, we have registered for resale all of the shares of common stock issuable under our incentive plans. Because the market for our common stock is thinly traded, the sales and/or the perception that those sales may occur, could adversely affect the market price of our common stock. Furthermore, the mere existence of a significant number of shares of common stock issuable upon vesting and, if applicable, exercise of these securities may be perceived by the market as having a potential dilutive effect, which could lead to a decrease in the price of our common stock.

Additional Risks Related to This Offering

Since we have some discretion in how we use the proceeds from this offering, we may use the proceeds in ways with which you disagree.

We have not allocated specific amounts of the net proceeds from this offering for any specific purpose. Accordingly, our management will have some flexibility in applying the net proceeds of this offering. You will be relying on the judgment of our management with regard to the use of these net proceeds and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. It is possible that the net proceeds will be invested in a way that does not yield a favorable, or any, return for us. The failure of our management to use such funds effectively could have a material adverse effect on our business, financial condition, operating results and cash flow.

You may experience immediate and substantial dilution.

The offering price per share in this offering may exceed the net tangible book value per share of our common stock outstanding prior to this offering. Assuming that an aggregate of \$50,000,000 of shares of our common stock are sold during the term of the At Market Issuance Sales Agreement with B. Riley FBR at a price of \$4.28 per share, the last reported sale price of our common stock on The NASDAQ Capital Market on June 10, 2019, for aggregate net proceeds of approximately \$48,331,000 after deducting commissions and estimated aggregate offering expenses payable by us, you will experience immediate dilution of \$2.57 per share, representing the difference between our adjusted pro forma net tangible book value per share as of January 31, 2019 after giving effect to this offering and the assumed offering price. The exercise of outstanding stock options and warrants may result in further dilution of your investment. See the section entitled “Dilution” below for a more detailed illustration of the dilution you would incur if you participate in this offering.

We do not anticipate declaring any cash dividends on our common stock which may adversely impact the market price of our stock.

We have never declared or paid cash dividends on our common stock and do not plan to pay any cash dividends in the near future. Our current policy is to retain all funds and any earnings for use in the operation and expansion of our business. If we do not pay dividends, our stock may be less valuable to you because a return on your investment will only occur if our stock price appreciates.

Sales of a significant number of shares of our common stock in the public markets, or the perception that such sales could occur, could depress the market price of our common stock.

Sales of a significant number of shares of our common stock in the public markets, or the perception that such sales could occur as a result of our utilization of a universal shelf registration statement, our At Market Issuance Sales Agreement with B. Riley FBR or otherwise could depress the market price of our common stock and impair our ability to raise capital through the sale of additional equity securities. We cannot predict the effect that future sales of our common stock or the market perception that we are permitted to sell a significant number of our securities would have on the market price of our common stock.

The market price for our securities may be volatile, which could result in substantial losses to investors.

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 operating results;
- our failure to meet or exceed securities analysts' expectations of our financial results;
- a change in financial estimates or securities analysts' recommendations;
- changes in management's or securities analysts' estimates of our financial performance;
- future sales of our common stock;
- low trading volume of our common stock;
- additions or departures of key personnel; or
- results of studies or patents.

In addition, the securities markets have from time to time experienced significant price and volume fluctuations that are not related to the operating performance of particular companies. As a result, to the extent shareholders sell our securities in negative market fluctuation, they may not receive a price per share that is based solely upon our business performance. We cannot guarantee that shareholders will not lose some of their entire investment in our securities.

USE OF PROCEEDS

We intend to use the net proceeds of this offering for general corporate purposes, including, but not limited to, ongoing clinical work, the development of new cancer related technologies, investing in or acquiring companies that are synergistic with or complimentary to our technologies, licensing activities related to our current and future product candidates, the development of emerging technologies, investing in or acquiring companies that are developing emerging technologies, licensing activities, or the acquisition of other businesses and working capital. While a portion of the net proceeds may be used for the acquisition of businesses, products and technologies that are synergistic or complementary to ours, or for other strategic purposes, we have no current understandings, commitments or agreements to do so. Pending use of the net proceeds, we intend to invest the net proceeds in short-term, interest-bearing, investment-grade securities.

DILUTION

If you invest in our common stock, your interest will be diluted immediately to the extent of the difference between the public offering price per share and the adjusted net tangible book value per share of our common stock after this offering.

Our net tangible book value on January 31, 2019 was approximately \$4,976,000, or \$0.26 per share. "Net tangible book value" is total assets minus the sum of liabilities and intangible assets. "Net tangible book value per share" is net tangible book value divided by the total number of shares outstanding.

After giving effect to the sale of shares of our common stock in the aggregate amount of \$50,000,000 in this offering at an assumed offering price of \$4.28 per share, which was the last reported sale price of our common stock on The NASDAQ Capital Market on June 10, 2019, and after deducting estimated offering commissions and expenses payable by us, our net tangible book value as of January 31, 2019 would have been approximately \$53,307,000, or \$1.71 per share of common stock. This represents an immediate increase in net tangible book value of \$1.45 per share to our existing stockholders and an immediate dilution in net tangible book value of \$2.57 per share to investors participating in this offering. The following table illustrates this dilution per share to investors participating in this offering:

Assumed offering price per share	\$	4.28
Net tangible book value per share as of January 31, 2019	\$	0.26
Increase per share attributable to new investors	\$	1.45
Net tangible book value per share after giving effect to this offering	\$	1.71
Dilution per share to new investors	\$	2.57

The table above assumes, for illustrative purposes, that an aggregate of 11,682,243 shares of our common stock are sold at a price of \$4.28 per share, the last reported sale price of our common stock on The NASDAQ Capital Market on June 10, 2019, for aggregate gross proceeds of \$50,000,000. The shares sold in this offering, if any, will be sold from time to time at various prices.

The number of shares of our common stock that will be outstanding immediately after this offering as shown above is based on 20,096,743 shares outstanding as of the date of this prospectus. The number of shares outstanding as of the date of this prospectus, as used throughout this prospectus, unless otherwise indicated, excludes the following, all as of the date of this prospectus:

- 3,470,000 shares of our common stock issuable upon exercise of stock options outstanding under our 2018 Share Incentive Plan, 2,258,334 of which are not currently exercisable, which have a weighted average exercise price of \$3.73 per share;
- 2,000,668 shares of our common stock issuable upon exercise of stock options outstanding under our 2010 Share Incentive Plan, 429,028 of which are not currently exercisable, which have a weighted average exercise price of \$2.03 per share;
- 8,000 shares of our common stock issuable upon exercise of stock options outstanding under our 2003 Share Incentive Plan which have a weighted average exercise price of \$2.34 per share;
- 2,907,200 shares of our common stock reserved for future issuance under our 2018 Share Incentive Plan and 2010 Share Incentive Plan;
- 1,780,000 shares of our common stock issuable upon the exercise of stock options outstanding pursuant to stock options that were not granted under the 2003 Share Plan, the 2010 Share Plan or the 2018 Share Plan which have a weighted average exercise price of \$1.58 per share;
and
- 854,400 shares of our common stock issuable upon exercise of our outstanding warrants which have a weighted average exercise price of \$6.95.

To the extent that any of our outstanding options or warrants are exercised, we grant additional options or other awards under our stock incentive plan or issue additional warrants, or we issue additional shares of common stock in the future, there may be further dilution.

DESCRIPTION OF SECURITIES WE ARE OFFERING

General

The following description is not complete and may not contain all the information you should consider before investing in our common stock. For a more detailed description of these securities, you should read the applicable provisions of Delaware law and our certificate of incorporation, as amended, referred to herein as our certificate of incorporation, and our bylaws.

The total number of shares of capital stock we are authorized to issue is 48,020,000 shares, of which (a) 48,000,000 shares are common stock and (b) 20,000 shares are preferred stock.

Common Stock

As of June 10, 2019, there were 20,096,743 shares of common stock issued and outstanding, held of record by approximately 338 stockholders. Subject to preferential rights with respect to any outstanding preferred stock, all outstanding shares of common stock are of the same class and have equal rights and attributes.

Dividend Rights

Holders of the common stock may receive dividends when, as and if declared by our board of directors out of the assets legally available for that purpose and subject to the preferential dividend rights of any other classes or series of stock of our Company. We have never paid, and have no plans to pay, any dividends on our shares of common stock.

Voting Rights

Holders of the common stock are entitled to one vote per share in all matters as to which holders of common stock are entitled to vote. Holders of not less than a majority of the outstanding shares of common stock entitled to vote at any meeting of stockholders constitute a quorum unless otherwise required by law.

Election of Directors

Directors hold office until the next annual meeting of stockholders and are eligible for re-election at such meeting. Directors are elected by a plurality of the shares present in person or represented by proxy at the meeting and entitled to vote on the election of directors. There is no cumulative voting for directors.

Liquidation

In the event of any liquidation, dissolution or winding up of the Company, holders of the common stock have the right to receive ratably and equally all of the assets remaining after payment of liabilities and liquidation preferences of any preferred stock then outstanding.

Redemption

The common stock is not redeemable or convertible and does not have any sinking fund provisions.

Preemptive Rights

Holders of the common stock do not have preemptive rights.

Other Rights

Our common stock is not liable to further calls or to assessment by the registrant and for liabilities of the registrant imposed on its stockholders under state statutes.

Right to Amend Bylaws

The board of directors has the power to adopt, amend or repeal the bylaws. Bylaws adopted by the board of directors may be repealed or changed, and new bylaws made, by the stockholders, and the stockholders may prescribe that any bylaw made by them shall not be altered, amended or repealed by the board of directors.

Change in Control

Provisions of Delaware law and our certificate of incorporation and bylaws could make the acquisition of our company by means of a tender offer, proxy contest or otherwise, and the removal of incumbent officers and directors, more difficult. These provisions include:

Section 203 of the DGCL, which prohibits a merger with a 15%-or-greater stockholder, such as a party that has completed a successful tender offer, until three years after that party became a 15%-or-greater stockholder;

The authorization in our certificate of incorporation of undesignated preferred stock, which could be issued without stockholder approval in a manner designed to prevent or discourage a takeover; and

Provisions in our bylaws regarding stockholders' rights to call a special meeting of stockholders limit such rights to stockholders holding together at least a sixty-six and two-thirds percent of the shares of the Company entitled to vote at the meeting, which could make it more difficult for stockholders to wage a proxy contest for control of our board of directors or to vote to repeal any of the anti-takeover provisions contained in our certificate of incorporation and bylaws.

Together, these provisions may make the removal of management more difficult and may discourage transactions that could otherwise involve payment of a premium over prevailing market prices for our common stock.

Market, Symbol and Transfer Agent

Our common stock is listed for trading on the Nasdaq Capital Market under the symbol "ANIX". The transfer agent and registrar for our common stock is American Stock Transfer and Trust Company.

PLAN OF DISTRIBUTION

We have entered into an At Market Issuance Sales Agreement with B. Riley FBR pursuant to which we may issue and sell up to an aggregate of \$50,000,000 of shares of our common stock from time to time through B. Riley FBR acting as agent.

Upon delivery of a placement notice and subject to the terms and conditions of the At Market Issuance Sales Agreement, B. Riley FBR may sell our common stock by any method permitted by law deemed to be an “at the market offering” as defined in Rule 415 promulgated under the Securities Act. We or B. Riley FBR may suspend or terminate the offering of our common stock upon notice and subject to other conditions.

We will pay B. Riley FBR in cash, upon each sale of our common stock pursuant to the At Market Issuance Sales Agreement, a commission in an amount equal to 3% of the aggregate gross proceeds from each sale of our common stock. Because there is no minimum offering amount required as a condition to this offering, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time. We have agreed, under certain circumstances, to reimburse a portion of B. Riley FBR’s expenses, including legal fees, in connection with this offering up to a maximum of \$25,000. We estimate that the total expenses for the offering, excluding compensation and expense reimbursement payable to B. Riley FBR under the terms of the At Market Issuance Sales Agreement, will be approximately \$144,000.

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

B. Riley FBR will act as sales agent on a commercially reasonable efforts basis consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of The NASDAQ Capital Market. In connection with the sale of the common stock on our behalf, B. Riley FBR will be deemed to be an “underwriter” within the meaning of the Securities Act and the compensation of B. Riley FBR will be deemed to be underwriting commissions or discounts. We have agreed to provide indemnification and contribution to B. Riley FBR against certain civil liabilities, including liabilities under the Securities Act.

The offering of our common stock pursuant to the At Market Issuance Sales Agreement will terminate upon the termination of the sales agreement as permitted therein.

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

This prospectus in electronic format may be made available on a web site maintained by B. Riley FBR and B. Riley FBR may distribute this prospectus electronically.

LEGAL MATTERS

The validity of the issuance of the common stock offered by this prospectus will be passed upon for us by Ellenoff Grossman & Schole LLP, New York, New York. B. Riley FBR is being represented in connection with this offering by Duane Morris LLP.

EXPERTS

The consolidated financial statements of Anixa Biosciences, Inc. and subsidiaries as of and for the years ended October 31, 2018 and 2017 have been incorporated by reference in the registration statement in reliance upon the report of Haskell & White LLP, independent registered public accounting firm, and upon the authority of said firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus is part of the registration statement on Form S-3 we filed with the SEC under the Securities Act and does not contain all the information set forth in the registration statement. Whenever a reference is made in this prospectus to any of our contracts, agreements or other documents, the reference may not be complete and you should refer to the exhibits that are a part of the registration statement or the exhibits to the reports or other documents incorporated by reference into this prospectus for a copy of such contract, agreement or other document. Because we are subject to the information and reporting requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, we file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at <http://www.sec.gov>.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

We are "incorporating by reference" certain documents we file with the SEC, which means that we can disclose important information to you by referring you to those documents. The information in the documents incorporated by reference is considered to be part of this prospectus. Statements contained in documents that we file with the SEC and that are incorporated by reference in this prospectus will automatically update and supersede information contained in this prospectus, including information in previously filed documents or reports that have been incorporated by reference in this prospectus, to the extent the new information differs from or is inconsistent with the old information. We have filed or may file the following documents with the SEC and they are incorporated herein by reference as of their respective dates of filing:

1. Our Annual Report on Form 10-K for the year ended October 31, 2018 filed with the SEC on January 11, 2019;
2. Our Quarterly Report on Form 10-Q for the quarter ended January 31, 2019 filed with the SEC on March 13, 2019;
3. Our Definitive Proxy Statement on Schedule 14A filed with the SEC on August 17, 2018;
4. Our Current Reports on Form 8-K filed with the SEC on January 25, 2019 and May 23, 2019; and
5. The description of our common stock contained in our Current Report on Form 8-K filed on March 31, 2014 and as it may further be amended from time to time.

All documents that we filed with the SEC pursuant to Sections 13(a), 13(c), 14, and 15(d) of the Exchange Act subsequent to the date of this registration statement and prior to the filing of a post-effective amendment to this registration statement that indicates that all securities offered under this prospectus have been sold, or that deregisters all securities then remaining unsold, will be deemed to be incorporated in this registration statement by reference and to be a part hereof from the date of filing of such documents.

Any statement contained in a document incorporated or deemed to be incorporated by reference in this prospectus shall be deemed modified, superseded or replaced for purposes of this prospectus to the extent that a statement contained in this prospectus, or in any subsequently filed document that also is deemed to be incorporated by reference in this prospectus, modifies, supersedes or replaces such statement. Any statement so modified, superseded or replaced shall not be deemed, except as so modified, superseded or replaced, to constitute a part of this prospectus. None of the information that we disclose under Items 2.02 or 7.01 of any Current Report on Form 8-K or any corresponding information, either furnished under Item 9.01 or included as an exhibit therein, that we may from time to time furnish to the SEC will be incorporated by reference into, or otherwise included in, this prospectus, except as otherwise expressly set forth in the relevant document. Subject to the foregoing, all information appearing in this prospectus is qualified in its entirety by the information appearing in the documents incorporated by reference.

You may request, orally or in writing, a copy of these documents, which will be provided to you at no cost (other than exhibits, unless such exhibits are specifically incorporate by reference), by contacting Amit Kumar, c/o Anixa Biosciences, Inc., at 3150 Almaden Expressway, San Jose, CA 95118. Our telephone number is (408) 708-9808. Information about us is also available at our website at <https://www.anixa.com/>. However, the information in our website is not a part of this prospectus and is not incorporated by reference.

**ANIXA BIOSCIENCES, INC.
Up to \$50,000,000 of Shares
Common Stock**

PROSPECTUS

B. RILEY FBR

June 11, 2019

PART II**INFORMATION NOT REQUIRED IN PROSPECTUS****Item 14. Other Expenses of Issuance and Distribution.**

The Company is paying all expenses of the offering. The following table sets forth all expenses to be paid by the registrant. All amounts shown are estimates except for the registration fee.

SEC registration fee	\$	12,120
Printing		*
Legal fees and expenses	\$	125,000
Accounting fees and expenses	\$	6,500
Trustees' Fees and Expenses		*
Warrant Agent Fees and Expenses		*
Miscellaneous		*
Total	\$	143,620

* These fees are calculated based on the securities offered and the number of issuances and accordingly cannot be estimated at this time. The applicable prospectus supplement will set forth the estimated amount of expenses of any offering of securities.

Item 15. Indemnification of Directors and Officers.

Section 145 of the DGCL inter alia, empowers a Delaware corporation to 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 (other than an action by or in the right of the corporation) by reason of the fact that such person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by him in connection with such action, suit or proceeding if he acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful. Similar indemnity is authorized for such persons against expenses (including attorneys' fees) actually and reasonably incurred in connection with the defense or settlement of any such threatened, pending or completed action or suit if such person acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation, and provided further that (unless a court of competent jurisdiction otherwise provides) such person shall not have been adjudged liable to the corporation. Any such indemnification may be made only as authorized in each specific case upon a determination by the stockholders or disinterested directors or by independent legal counsel in a written opinion that indemnification is proper because the indemnitee has met the applicable standard of conduct.

Section 145 further authorizes a corporation to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation or enterprise, against any liability asserted against him and incurred by him in any such capacity, or arising out of his status as such, whether or not the corporation would otherwise have the power to indemnify him under Section 145. We maintain policies insuring our officers and directors against certain liabilities for actions taken in such capacities, including liabilities under the Securities Act.

Section 102(b)(7) of the DGCL permits a corporation to include in its certificate of incorporation a provision eliminating or limiting the personal liability of a director to the corporation or its shareholders for monetary damages for breach of fiduciary duty as a director, provided that such provision shall not eliminate or limit the liability of a director (i) for any breach of the director's duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the DGCL (relating to unlawful payment of dividends and unlawful stock purchase or redemption) or (iv) for any transaction from which the director derived an improper personal benefit.

Article 10 of the bylaws of the Company contains provisions which are designed to provide mandatory indemnification of directors and officers of the Company to the full extent permitted by law, as now in effect or later amended. The bylaws further provide that, if and to the extent required by the DGCL, an advance payment of expenses to a director or officer of the Company that is entitled to indemnification will only be made upon delivery to the Company of an undertaking, by or on behalf of the director or officer, to repay all amounts so advanced if it is ultimately determined that such director is not entitled to indemnification.

Item 16. Exhibits.

The following exhibits are filed with this Registration Statement.

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The agreements included or incorporated by reference as exhibits to this registration statement contain representations and warranties by each of the parties to the applicable agreement. These representations and warranties were made solely for the benefit of the other parties to the applicable agreement and (i) were not intended to be treated as categorical statements of fact, but rather as a way of allocating the risk to one of the parties if those statements prove to be inaccurate; (ii) may have been qualified in such agreement by disclosures that were made to the other party in connection with the negotiation of the applicable agreement; (iii) may apply contract standards of “materiality” that are different from “materiality” under the applicable securities laws; and (iv) were made only as of the date of the applicable agreement or such other date or dates as may be specified in the agreement.

The undersigned registrant acknowledges that, notwithstanding the inclusion of the foregoing cautionary statements, it is responsible for considering whether additional specific disclosures of material information regarding material contractual provisions are required to make the statements in this registration statement not misleading.

Exhibit

Number	Description of Document
1.1	Form of Underwriting Agreement**
4.1	Form of Certificate of Designation of Preferred Stock**
4.2	Form of Stock Purchase Contract**
4.3	Form of Warrant Agreement and Form of Warrant Certificate**
4.4	Form of Subscription Rights Agreement and Form Subscription Rights Certificate**
4.5	Form of Indenture*
4.6	Form of Note**
4.7	Form of Debt Securities**
5.1	Opinion of Ellenoff Grossman & Schole LLP*
10.1	Form of At Market Issuance Sales Agreement*
12.1	Computation of Ratio of Earnings to Fixed Charges**
23.1	Consent of Haskell & White LLP*
23.2	Consent of Ellenoff Grossman & Schole LLP (included in Exhibit 5.1)*
24.1	Power of Attorney (included in Part II of this Registration Statement)*
25.1	Statement of Eligibility of trustee on Form T-1***+

* Filed herewith.

** If applicable, to be filed by an amendment or as an exhibit to a report pursuant to section 13(a) or section 15(d) of the Exchange Act and incorporated by reference

+ To be filed pursuant to Rule 305(b)(2) of the Trust Indenture Act.

Item 17. Undertakings.

(a) The undersigned Registrant hereby undertakes:

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

(i) to include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

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

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

provided, however, that paragraphs (1)(i), (1)(ii) and (1)(iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or 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:

(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.

(5) 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 undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

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

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

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

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

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability of the registrant under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or Section 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.

(c) The undersigned registrant hereby undertakes to supplement the prospectus, after the expiration of the subscription period, to set forth the results of the subscription offer, the transactions by the underwriters during the subscription period, the amount of unsubscribed securities to be purchased by the underwriters, and the terms of any subsequent reoffering thereof. If any public offering by the underwriters is to be made on terms differing from those set forth on the cover page of the prospectus, a post-effective amendment will be filed to set forth the terms of such offering.

(d) 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 foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

(e) The undersigned registrant 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 Trust Indenture Act.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of San Jose, State of California, on this 11th day of June, 2019.

ANIXA BIOSCIENCES, INC.By: /s/ Dr. Amit Kumar

Dr. Amit Kumar

President and Chief Executive Officer

KNOW ALL PERSONS BY THESE PRESENTS that each individual whose signature appears below hereby constitutes and appoints Dr. Amit Kumar as his or her true and lawful attorney-in-fact and agent with full power of substitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments, including post-effective amendments, to this registration statement, and to sign any registration statement for the same offering covered by this registration statement that is to be effective upon filing pursuant to Rule 462(b) promulgated under the Securities Act of 1933 increasing the number of shares for which registration is sought, and all post-effective amendments thereto, and to file the same, with all exhibits thereto and all documents in connection therewith, making such changes in this registration statement as such attorney-in-fact and agent so acting deem appropriate, with the SEC, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done with respect to the offering of securities contemplated by this registration statement, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his, her or their substitute or substitutes, may lawfully do or cause to be done or by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, 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/ Dr. Amit Kumar</u> Dr. Amit Kumar	President, Chief Executive Officer and Chairman of the Board (Principal Executive Officer)	June 11, 2019
<u>/s/ Michael J. Catelani</u> Michael J. Catelani	Chief Financial Officer and Chief Operating Officer (Principal Financial Officer and Principal Accounting Officer)	June 11, 2019
<u>/s/ Lewis H. Titterton, Jr.</u> Lewis H. Titterton Jr.	Director	June 11, 2019
<u>/s/ Dr. John Monahan</u> Dr. John Monahan	Director	June 11, 2019
<u>/s/ Dr. Arnold Baskies</u> Dr. Arnold Baskies	Director	June 11, 2019
<u>/s/ David Cavalier</u> David Cavalier	Director	June 11, 2019

ANIXA BIOSCIENCES, INC., as
ISSUER

and
[], as
INDENTURE TRUSTEE

INDENTURE
Dated as of []

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ANIXA BIOSCIENCES, INC.
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(a)(2)	7.10
(a)(3)	NOT APPLICABLE
(a)(4)	NOT APPLICABLE
(a)(5)	7.10
(b)	7.10
Section 311 (a)	7.11
(b)	7.11
(c)	NOT APPLICABLE
Section 312 (a)	2.06
(b)	10.03
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(b)(1)	7.06
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(b)	NOT APPLICABLE
(c)(1)	10.04
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(b)	6.08
Section 317 (a)(1)	6.03
(a)(2)	6.04
(b)	2.05
Section 318 (a)	10.01

INDENTURE, dated as of [], between Anixa Biosciences, Inc., a Delaware corporation (“*Company*”), and [], as trustee (“*Trustee*”).

Each party agrees as follows for the benefit of the other party and for the equal and ratable benefit of the Holders of the Securities issued under this Indenture.

**ARTICLE I
DEFINITIONS AND INCORPORATION BY REFERENCE**

Section 1.01 Definitions.

“*Additional Amounts*” means any additional amounts which are required hereby or by any Security, under circumstances specified herein or therein, to be paid by the Company in respect of certain taxes imposed on Holders specified herein or therein and which are owing to such Holders, as calculated by the Company.

“*Affiliate*” of any specified person means any other person directly or indirectly controlling or controlled by or under direct or indirect common control with such specified person. For the purposes of this definition, “control” (including, with correlative meanings, the terms “controlled by” and “under common control with”), as used with respect to any person, shall mean the possession, directly or indirectly, of the power to direct or cause the direction of the management or policies of such person, whether through the ownership of voting securities or by agreement or otherwise.

“*Agent*” means any Registrar or Paying Agent.

“*Applicable Procedures*” means, with respect to any transfer or transaction involving a Global Security or beneficial interest therein, the rules and procedures of DTC or any successor Depository, in each case to the extent applicable to such transaction and as in effect from time to time.

“*Board of Directors*” means the Board of Directors of the Company or any duly authorized committee thereof.

“*Board Resolution*” means a copy of a resolution certified by the Secretary or an Assistant Secretary of the Company to have been adopted by the Board of Directors or pursuant to authorization by the Board of Directors and to be in full force and effect on the date of the certificate and delivered to the Trustee.

“*Business Day*” means any day other than a Saturday, Sunday or other day on which banking institutions are authorized or required by law, regulation or executive order to close or be closed in the State of New York.

“*Capital Interests*” means any and all shares, interests, participations, rights or other equivalents (however designated) of capital stock, including, without limitation, with respect to partnerships, partnership interests (whether general or limited) and any other interest or participation that confers on a person the right to receive a share of the profits and losses of, or distributions of assets of, such partnership.

“*Company*” means the party named as such above until a successor replaces it and thereafter means the successor.

“*Company Order*” means a written order signed in the name of the Company by two Officers, one of whom must be the Company’s principal executive officer, principal financial officer or principal accounting officer.

“*Company Request*” means a written request signed in the name of the Company by its Chief Executive Officer or Chief Financial Officer and delivered to the Trustee.

“*Corporate Trust Office*” means the address of the Trustee specified in Section 10.02, or such other address as to which the Trustee may give notice to the Holders and the Company.

“*Default*” means any event which is, or after notice or passage of time or both would be, an Event of Default.

“*Depository*” means, with respect to the Securities of any Series issuable or issued in whole or part in the form of one or more Global Securities, the person designated as Depository for such Series by the Company, which Depository shall be a clearing agency registered under the Exchange Act; and if at any time there is more than one such person, “*Depository*” as used with respect to the Securities of any Series shall mean the Depository with respect to the Securities of such Series.

“*Discount Security*” means any Security that provides for an amount less than the stated principal amount thereof to be due and payable upon declaration of acceleration of the maturity thereof pursuant to Section 6.02.

“*Dollars*” and “\$” means the currency of The United States of America.

“*DTC*” means the Depository Trust Company, a New York corporation.

“*Exchange Act*” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

“*Foreign Currency*” means any currency or currency unit issued by a government other than the government of The United States of America.

“*Foreign Government Obligations*” means, with respect to Securities of any Series that are denominated in a Foreign Currency, (i) direct obligations of the government that issued or caused to be issued such currency for the payment of which obligations its full faith and credit is pledged or (ii) obligations of a person controlled or supervised by or acting as an agency or instrumentality of such government the timely payment of which is unconditionally guaranteed as a full faith and credit obligation by such government, which, in either case under clauses (i) or (ii), are not callable or redeemable at the option of the issuer thereof.

“*GAAP*” means generally accepted accounting principles set forth in the opinions and pronouncements of the Accounting Principles Board of the American Standards Board or in such other statements by such other entity as have been approved by a significant segment of the accounting profession.

“*Global Security*” or “*Global Securities*” means a Security or Securities, as the case may be, in the form established pursuant to Section 2.02 evidencing all or part of a Series of Securities, issued to the Depository for such Series or its nominee, and registered in the name of such Depository or nominee.

“*Holder*” means a person in whose name a Security is registered.

“*Indenture*” means this Indenture as amended or supplemented from time to time and shall include the form and terms of particular Series of Securities established as contemplated hereunder.

“*interest*” with respect to any Discount Security which by its terms bears interest only after Maturity means interest payable after Maturity.

“*Maturity*,” when used with respect to any Security or installment of principal thereof, means the date on which the principal of such Security or such installment of principal becomes due and payable as therein or herein provided, whether at the Stated Maturity or by declaration of acceleration, call for redemption or otherwise.

“*Officer*” means the Chief Executive Officer, Chief Financial Officer, any Vice-President, the Treasurer, the Secretary, any Assistant Treasurer or any Assistant Secretary of the Company.

“*Officers’ Certificate*” means a certificate signed by two Officers, one of whom must be the Company’s principal executive officer, principal financial officer or principal accounting officer.

“*Opinion of Counsel*” means a written opinion of legal counsel who is reasonably acceptable to the Trustee. The counsel may be an employee of or counsel to the Company.

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

“*principal*” of a Security means the principal of the Security plus, when appropriate, the premium, if any, on, and any Additional Amounts in respect of, the Security.

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

“*SEC*” means the Securities and Exchange Commission.

“*Securities*” means the debentures, notes or other debt instruments of the Company of any Series authenticated and delivered under this Indenture.

“*Series*” or “*Series of Securities*” means each series of debentures, notes or other debt instruments of the Company created pursuant to Sections 2.01 and 2.02 hereof.

“*Stated Maturity*” means when used with respect to any Security or any installment of principal thereof or interest thereon, the date specified in such Security as the fixed date on which the principal of such Security or such installment of principal or interest is due and payable.

“*Subsidiary*” means, with respect to any person, any corporation, association or other business entity of which more than 50% of the total voting power of shares of Capital Interests entitled (without regard to the occurrence of any contingency) to vote in the election of directors, managers or trustees thereof or, in the case of a partnership, more than 50% of the partners’ Capital Interests (considering all partners’ Capital Interests as a single class), is at the time owned or controlled, directly or indirectly, by such person or one or more of the other Subsidiaries of such person or combination thereof.

“*TIA*” means the Trust Indenture Act of 1939 (15 U.S. Code Sections 77aaa-77bbbb) as in effect on the date of this Indenture and the rules and regulations promulgated thereunder; provided, however, that in the event the Trust Indenture Act of 1939 is amended after such date, “*TIA*” means, to the extent required by any such amendment, the Trust Indenture Act as so amended.

“*Trustee*” means the person named as the “*Trustee*” in the first paragraph of this instrument until a successor Trustee shall have become such pursuant to the applicable provisions of this Indenture, and thereafter “*Trustee*” shall mean each person who is then a Trustee hereunder, and if at any time there is more than one such person, “*Trustee*” as used with respect to the Securities of any Series shall mean the Trustee with respect to Securities of that Series.

“*U.S. Government Obligations*” means securities which are (i) direct obligations of The United States of America for the payment of which its full faith and credit is pledged or (ii) 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 as a full faith and credit obligation by The United States of America, and which are not callable or redeemable at the option of the issuer thereof, and shall also include a depository receipt issued by a bank or trust company as custodian with respect to any such U.S. Government Obligation or a specific payment of interest on or principal of any such U.S. Government Obligation 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 from any amount received by the custodian in respect of the U.S. Government Obligation evidenced by such depository receipt.

Section 1.02 Other Definitions.

TERM	Defined in Section
<i>Bankruptcy Law</i>	6.01
<i>Custodian</i>	6.01
<i>Event of Default</i>	6.01
<i>Legal Holiday</i>	10.07
<i>mandatory sinking fund payment</i>	11.01
<i>Market Exchange Rate</i>	10.15
<i>optional sinking fund payment</i>	11.01
<i>Paying Agent</i>	2.04
<i>Registrar</i>	2.04
<i>Successor Person</i>	5.01

Section 1.03 Incorporation by Reference of Trust Indenture Act.

Whenever this Indenture refers to a provision of the TIA, the provision is incorporated by reference in and made a part of this Indenture. The following TIA terms used in this Indenture have the following meanings:

“*Commission*” means the SEC.

“*indenture securities*” means the Securities.

“*indenture security holder*” means a Holder.

“*indenture to be qualified*” means this Indenture.

“*indenture trustee*” or “*institutional trustee*” means the Trustee.

“*obligor*” on the indenture securities means the Company and any successor obligor upon the Securities.

All other terms used in this Indenture that are defined by the TIA, defined by TIA reference to another statute or defined by SEC rule under the TIA and not otherwise defined herein are used herein as so defined.

Section 1.04 Rules of Construction.

Unless the context otherwise requires:

- (a) a term has the meaning assigned to it;
- (b) an accounting term not otherwise defined has the meaning assigned to it in accordance with generally accepted accounting principles;
- (c) references to “generally accepted accounting principles” and “GAAP” shall mean generally accepted accounting principles in effect as of the time when and for the period as to which such accounting principles are to be applied;
- (d) “or” is not exclusive;
- (e) words in the singular include the plural, and in the plural include the singular; and
- (f) provisions apply to successive events and transactions.

ARTICLE II THE SECURITIES

Section 2.01 Issuable in Series. The aggregate principal amount of Securities that may be authenticated and delivered under this Indenture is unlimited. The Securities may be issued in one or more Series. All Securities of a Series shall be identical except as may be set forth or determined in the manner provided in a Board Resolution, supplemental indenture or Officers’ Certificate detailing the adoption of the terms thereof pursuant to authority granted under a Board Resolution. In the case of Securities of a Series to be issued from time to time, the Board Resolution, Officers’ Certificate or supplemental indenture detailing the adoption of the terms thereof pursuant to authority granted under a Board Resolution may provide for the method by which specified terms (such as interest rate, maturity date, record date or date from which interest shall accrue) are to be determined. Securities may differ between Series in respect of any matters, provided that all Series of Securities shall be equally and ratably entitled to the benefits of the Indenture.

Section 2.02 Establishment of Terms of Series of Securities. At or prior to the issuance of any Securities within a Series, the following shall be established (as to the Series generally, in the case of Subsection 2.02(a) and either as to such Securities within the Series or as to the Series generally in the case of Subsections 2.02(b) through 2.02(s)) by or pursuant to a Board Resolution, and set forth or determined in the manner provided in a Board Resolution, supplemental indenture or an Officers’ Certificate:

- (a) the form and title of the Series (which shall distinguish the Securities of that particular Series from the Securities of any other Series);

(b) the price or prices (expressed as a percentage of the principal amount thereof) at which the Securities of the Series will be issued;

(c) any limit upon the aggregate principal amount of the Securities of the Series which may be authenticated and delivered under this Indenture (except for Securities authenticated and delivered upon registration of transfer of, or in exchange for, or in lieu of, other Securities of the Series pursuant to Sections 2.07, 2.08, 2.11, 3.06 or 9.06);

(d) the date or dates on which the principal of the Securities of the Series is payable;

(e) the rate or rates (which may be fixed or variable) per annum or, if applicable, the method used to determine such rate or rates (including, but not limited to, any commodity, commodity index, stock exchange index or financial index) at which the Securities of the Series shall bear interest, if any, the date or dates from which such interest, if any, shall accrue, the date or dates on which such interest, if any, shall commence and be payable and any regular record date for the interest payable on any interest payment date;

(f) the place or places where the principal of and interest, if any, on the Securities of the Series shall be payable, where the Securities of such Series may be surrendered for registration of transfer or exchange and where notices and demands to or upon the Company in respect of the Securities of such Series and this Indenture may be served, and the method of such payment, if by wire transfer, mail or other means;

(g) if applicable, the period or periods within which, the price or prices at which and the terms and conditions upon which the Securities of the Series may be redeemed, in whole or in part, at the option of the Company;

(h) the obligation, if any, of the Company to redeem or purchase the Securities of the Series pursuant to any sinking fund or analogous provisions or at the option of a Holder thereof and the period or periods within which, the price or prices at which and the terms and conditions upon which Securities of the Series shall be redeemed or purchased, in whole or in part, pursuant to such obligation;

(i) the dates, if any, on which and the price or prices at which the Securities of the Series will be repurchased by the Company at the option of the Holders thereof and other detailed terms and provisions of such repurchase obligations;

(j) if other than denominations of \$1,000 and any integral multiple thereof, the denominations in which the Securities of the Series shall be issuable;

(k) if other than the principal amount thereof, the portion of the principal amount of the Securities of the Series that shall be payable upon declaration of acceleration of the maturity thereof pursuant to Section 6.02;

(l) the currency of denomination of the Securities of the Series, which may be Dollars or any Foreign Currency, and the agency or organization, if any, responsible for overseeing such composite currency;

(m) the provisions, if any, relating to any security provided for the Securities of the Series;

(n) any addition to or change in the Events of Default which applies to any Securities of the Series and any change in the right of the Trustee or the requisite Holders of such Securities to declare the principal amount thereof due and payable pursuant to Section 6.02;

(o) any addition to or change in the covenants set forth in Articles IV or V which applies to Securities of the Series;

(p) the provisions, if any, relating to conversion of any Securities of such Series, including, if applicable, the securities into which the Securities are convertible, the conversion price, the conversion period, provisions as to whether conversion will be mandatory, at the option of the Holders or at the option of the Company, the events requiring an adjustment of the conversion price and provisions affecting conversion if such Series of Securities are redeemed;

(q) whether the Securities of such Series will be senior debt securities or subordinated debt securities and, if applicable, a description of the subordination terms thereof;

(r) any depositaries, interest rate calculation agents, exchange rate calculation agents or other agents with respect to Securities of such Series if other than those appointed herein; and

(s) any other terms of the Securities of the Series (which may modify or delete any provision of this Indenture insofar as it applies to such Series).

All Securities of any one Series need not be issued at the same time and may be issued from time to time, consistent with the terms of this Indenture, if so provided by or pursuant to the Board Resolution, supplemental indenture hereto or Officers' Certificate referred to above, and, unless otherwise provided in such Board Resolution, a Series may be reopened, without the consent of the Holders, for increases in the aggregate principal amount of such Series and issuances of additional Securities of such Series.

Section 2.03 Execution and Authentication. At least one Officer shall sign the Securities for the Company by manual or facsimile signature. If an Officer whose signature is on a Security no longer holds that office at the time the Security is authenticated, the Security shall nevertheless be valid. A Security shall not be valid until authenticated by the manual signature of the Trustee or an authenticating agent. The signature shall be conclusive evidence that the Security has been authenticated under this Indenture. The Trustee shall at any time, and from time to time, authenticate Securities for original issue in the principal amount provided in the Board Resolution, supplemental indenture hereto or Officers' Certificate, upon receipt by the Trustee of a Company Order. Such Company Order may authorize authentication and delivery pursuant to electronic instructions in PDF from the Company or its duly authorized agent or agents. Each Security shall be dated the date of its authentication unless otherwise provided by a Board Resolution, a supplemental indenture hereto or an Officers' Certificate. The aggregate principal amount of Securities of any Series outstanding at any time may not exceed any limit upon the maximum principal amount for such Series set forth in the Board Resolution, supplemental indenture hereto or Officers' Certificate delivered pursuant to Section 2.02, except as provided in Section 2.02 or 2.08. Prior to the issuance of Securities of any Series, the Trustee shall have received and (subject to Section 7.02) shall be fully protected in relying on: (a) the Board Resolution, supplemental indenture hereto or Officers' Certificate establishing the form of the Securities of that Series or of Securities within that Series and the terms of the Securities of that Series or of Securities within that Series, (b) an Officers' Certificate complying with Section 10.04 and (c)(1) an Opinion of Counsel complying with Section 10.04 or (2) an Opinion of Counsel (or reliance letter with respect to an Opinion of Counsel) that the Securities have been duly authorized, executed and delivered by the Company and such Securities will constitute valid and binding obligations of the Company, enforceable against the Company in accordance with its terms. The Trustee may appoint an authenticating agent acceptable to the Company to authenticate Securities. An authenticating agent may authenticate Securities whenever the Trustee may do so. Each reference in this Indenture to authentication by the Trustee includes authentication by such agent. An authenticating agent has the same rights as an Agent to deal with the Company or an Affiliate of the Company.

Section 2.04 Registrar and Paying Agent. The Company shall maintain, with respect to each Series of Securities, at the place or places specified with respect to such Series pursuant to Section 2.02, an office or agency where Securities of such Series may be presented or surrendered for payment (“*Paying Agent*”), and where Securities of such Series may be surrendered for registration of transfer or exchange (“*Registrar*”). The Registrar shall keep a register with respect to each Series of Securities and of their transfer and exchange. The Company hereby appoints the Trustee as Paying Agent and Registrar. The Company will give prompt written notice to the Trustee of the name and address, and any change in the name or address, of each Registrar or Paying Agent. The Company may also from time to time designate one or more co-registrars or additional paying agents and may from time to time rescind such designations; provided, however, that no such designation or rescission shall in any manner relieve the Company of its obligations to maintain a Registrar and a Paying Agent in each place so specified pursuant to Section 2.02 for Securities of any Series for such purposes. The Company will give prompt written notice to the Trustee of any such designation or rescission and of any change in the name or address of any such co-registrar or additional paying agent. The term “Registrar” includes any co-registrar; and the term “Paying Agent” includes any additional paying agent. The Company hereby appoints the Trustee as the initial Registrar and Paying Agent for each Series unless another Registrar or Paying Agent, as the case may be, is appointed prior to the time Securities of that Series are first issued.

Section 2.05 Paying Agent to Hold Money in Trust. The Company shall require each Paying Agent other than the Trustee to agree in writing that the Paying Agent will hold in trust, for the benefit of Holders of any Series of Securities, or the Trustee, all money held by the Paying Agent for the payment of principal of or interest on the Series of Securities, and will notify the Trustee of any default by the Company in making any such payment. While any such default continues, the Trustee may require a Paying Agent to pay all money held by it to the Trustee. The Company at any time may require a Paying Agent to pay all money held by it to the Trustee. Upon payment over to the Trustee, the Paying Agent (if other than the Company or a Subsidiary of the Company) shall have no further liability for the money. If the Company or a Subsidiary of the Company acts as Paying Agent, it shall segregate and hold in a separate trust fund for the benefit of Holders of any Series of Securities all money held by it as Paying Agent. Upon an Event of Default under Section 6.01(d) or (e), the Trustee shall be the Paying Agent.

Section 2.06 Holder Lists. The Trustee shall preserve in as current a form as is reasonably practicable the most recent list available to it of the names and addresses of Holders of each Series of Securities and shall otherwise comply with TIA Section 312(a). If the Trustee is not the Registrar, the Company shall furnish to the Trustee at least ten (10) days before each interest payment date and at such other times as the Trustee may request in writing a list, in such form and as of such date as the Trustee may reasonably require, of the names and addresses of Holders of each Series of Securities.

Section 2.07 Transfer and Exchange. Where Securities of a Series are presented to the Registrar or a co-registrar with a request to register a transfer or to exchange them for an equal principal amount of Securities of the same Series, the Registrar shall register the transfer or make the exchange if its requirements for such transactions are met. To permit registrations of transfers and exchanges, the Trustee shall authenticate Securities at the Registrar’s request. No service charge shall be made for any registration of transfer or exchange (except as otherwise expressly permitted herein), but the Company may require payment of a sum sufficient to cover any transfer tax or similar governmental charge payable in connection therewith (other than any such transfer tax or similar governmental charge payable upon exchanges pursuant to Sections 2.11, 3.06 or 9.06). Neither the Company nor the Registrar shall be required (a) to issue, register the transfer of, or exchange Securities of any Series for the period beginning at the opening of business fifteen days immediately preceding the delivery of a notice of redemption of Securities of that Series selected for redemption and ending at the close of business on the day of such delivery, or (b) to register the transfer of or exchange Securities of any Series selected, called or being called for redemption as a whole or the portion being redeemed of any such Securities selected, called or being called for redemption in part.

Section 2.08 Mutilated, Destroyed, Lost and Stolen Securities.

(a) If any mutilated Security is surrendered to the Trustee, the Company shall execute and the Trustee shall authenticate and make available for delivery in exchange therefor a new Security of the same Series and of like tenor and principal amount and bearing a number not contemporaneously outstanding. If there shall be delivered to the Company and the Trustee (i) evidence to their satisfaction of the destruction, loss or theft of any Security and (ii) such security or indemnity as may be required by them to save each of them and any agent of either of them harmless, then, in the absence of notice to the Company or the Trustee that such Security has been acquired by a protected purchaser, the Company shall execute and upon its request the Trustee shall authenticate and make available for delivery, in lieu of any such destroyed, lost or stolen Security, a new Security of the same Series and of like tenor and principal amount and bearing a number not contemporaneously outstanding. In case any such mutilated, destroyed, lost or stolen Security has become due and payable, the Company in its discretion may, instead of issuing a new Security, pay such Security.

(b) 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 of any Series 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 that 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 2.09 Outstanding Securities. The Securities outstanding at any time are all the Securities authenticated by the Trustee except for those canceled by it, those delivered to it for cancellation, those reductions in the interest on a Global Security effected by the Trustee in accordance with the provisions hereof and those described in this Section as not outstanding. If a Security is replaced pursuant to Section 2.08, it ceases to be outstanding until the Trustee receives proof satisfactory to it that the replaced Security is held by a protected purchaser. If the Paying Agent (other than the Company, a Subsidiary of the Company or an Affiliate of the Company) holds on the Maturity of Securities of a Series money sufficient to pay such Securities payable on that date, then on and after that date such Securities of the Series cease to be outstanding and interest on them ceases to accrue. A Security does not cease to be outstanding because the Company or an Affiliate of the Company holds the Security. In determining whether the Holders of the requisite principal amount of outstanding Securities have given any request, demand, authorization, direction, notice, consent or waiver hereunder, the principal amount of a Discount Security that shall be deemed to be outstanding for such purposes 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 pursuant to Section 6.02.

Section 2.10 Treasury Securities. In determining whether the Holders of the required principal amount of Securities of a Series have concurred in any request, demand, authorization, direction, notice, consent or waiver, Securities of a Series owned by the Company shall be disregarded, except that for the purposes of determining whether the Trustee shall be protected in relying on any such request, demand, authorization, direction, notice, consent or waiver, only Securities of a Series that a Responsible Officer of the Trustee knows are so owned shall be so disregarded.

Section 2.11 Temporary Securities. Until definitive Securities are ready for delivery, the Company may prepare and the Trustee shall authenticate temporary Securities upon a Company Order. Temporary Securities shall be substantially in the form of definitive Securities but may have variations that the Company considers appropriate for temporary Securities. Without unreasonable delay, the Company shall prepare and the Trustee upon request shall authenticate definitive Securities of the same Series and date of maturity in exchange for temporary Securities. Until so exchanged, temporary securities shall have the same rights under this Indenture as the definitive Securities.

Section 2.12 Cancellation. The Company at any time may deliver Securities to the Trustee for cancellation. The Registrar and the Paying Agent shall forward to the Trustee any Securities surrendered to them for registration of transfer, exchange or payment. The Trustee shall cancel all Securities surrendered for registration of transfer, exchange, payment, replacement or cancellation in accordance with its customary procedures. The Company may not issue new Securities to replace Securities that it has paid or delivered to the Trustee for cancellation.

Section 2.13 Defaulted Interest. If the Company defaults in a payment of interest on a Series of Securities, it shall pay the defaulted interest at the rate established for the particular Series, if any, plus, to the extent permitted by law, any interest payable on the defaulted interest, to the persons who are Holders of the Series on a subsequent special record date. The Company shall fix the special record date and payment date; provided that if no rate for defaulted interest is specified for any Series of Securities, then the defaulted interest rate shall be the interest rate specified for such Series of Securities. At least ten (10) days before the special record date, the Company shall deliver to the Trustee and to each Holder of the Series a notice that states the record date, the related payment date and the amount of interest to be paid. The Company may also pay defaulted interest in any other lawful manner.

Section 2.14 Global Securities

(a) Terms of Securities. A Board Resolution, a supplemental indenture hereto or an Officers' Certificate shall establish whether the Securities of a Series shall be issued in whole or in part in the form of one or more Global Securities and the Depositary for such Global Security or Securities.

(b) Transfer and Exchange. Notwithstanding any provisions to the contrary contained in Section 2.07 of the Indenture and in addition thereto, any Global Security shall be exchangeable pursuant to Section 2.07 of the Indenture for Securities registered in the names of Holders other than the Depositary for such Security or its nominee only if (i) such Depositary notifies the Company that it is unwilling or unable to continue as Depositary for such Global Security or if at any time such Depositary ceases to be a clearing agency registered under the Exchange Act, and, in either case, the Company fails to appoint a successor Depositary registered as a clearing agency under the Exchange Act within 90 days of such event, (ii) the Company executes and delivers to the Trustee an Officers' Certificate to the effect that such Global Security shall be so exchangeable or (iii) an Event of Default with respect to the Securities represented by such Global Security shall have happened and be continuing. Any Global Security that is exchangeable pursuant to the preceding sentence shall be exchangeable for Securities registered in such names as the Depositary shall direct in writing in an aggregate principal amount equal to the principal amount of the Global Security with like tenor and terms.

(c) Except as provided in this Section 2.14(c), a Global Security may not be transferred except as a whole by the Depositary with respect to such Global Security to a nominee of such Depositary, by a nominee of such Depositary to such Depositary or another nominee of such Depositary or by the Depositary or any such nominee to a successor Depositary or a nominee of such a successor Depositary.

(d) Legend. Any Global Security issued hereunder shall bear a legend in substantially the following form:

“This Security is a Global Security within the meaning of the Indenture hereinafter referred to and is registered in the name of the Depositary or a nominee of the Depositary. This Security is exchangeable for Securities registered in the name of a person other than the Depositary or its nominee only in the limited circumstances described in the Indenture, and may not be transferred except as a whole by the Depositary to a nominee of the Depositary, 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 a successor Depositary.”

(e) Acts of Holders. The Depositary, as a Holder, may appoint agents and otherwise authorize participants to give or take any request, demand, authorization, direction, notice, consent, waiver or other action which a Holder is entitled to give or take under the Indenture.

(f) Payments. Notwithstanding the other provisions of this Indenture, unless otherwise specified as contemplated by Section 2.02, payment of the principal of and interest, if any, on any Global Security shall be made to the Holder thereof.

(g) Consents, Declaration and Directions. Except as provided in Section 2.14(g), the Company, the Trustee and any Agent shall treat a person as the Holder of such principal amount of outstanding Securities of such Series represented by a Global Security as shall be specified in a written statement of the Depositary with respect to such Global Security, for purposes of obtaining any consents, declarations, waivers or directions required to be given by the Holders pursuant to this Indenture.

(h) The Depositary or its nominee, as registered owner of a Global Security, shall be the Holder of such Global Security for all purposes under the Indenture and the Securities, and owners of beneficial interests in a Global Security shall hold such interests pursuant to the Applicable Procedures. Accordingly, any such owner's beneficial interest in a Global Security will be shown only on, and the transfer of such interest shall be effected only through, records maintained by the Depositary or its nominee and such owners of beneficial interests in a Global Security will not be considered the owners or holders thereof. Notwithstanding any other provision of this Indenture or any Security, where this Indenture or any Global Security provides for notice of any event (including any notice of redemption or repurchase) to a Holder of a Global Security (whether by mail or otherwise), such notice shall be sufficiently given if given to the Depositary (or its designee) pursuant to the standing instructions from the Depositary or its designee, including by electronic mail in accordance with applicable Depositary procedures.

Section 2.15 CUSIP Numbers. The Company in issuing the Securities may use “CUSIP” numbers (if then generally in use), and, if so, the Trustee shall use “CUSIP” numbers in notices of redemption as a convenience to Holders; provided that any such notice may state that no representation is made as to the correctness of such numbers either as printed on the Securities or as contained in any notice of a redemption and that reliance may be placed only on the other elements of identification printed on the Securities, and any such redemption shall not be affected by any defect in or omission of such numbers. The Company shall promptly notify the Trustee of any change in “CUSIP” numbers of which the Company becomes aware.

**ARTICLE III
REDEMPTION**

Section 3.01 Notice to Trustee. The Company may, with respect to any Series of Securities, reserve the right to redeem and pay the Series of Securities or may covenant to redeem and pay the Series of Securities or any part thereof prior to the Stated Maturity thereof at such time and on such terms as provided for in such Securities. If a Series of Securities is redeemable and the Company wants or is obligated to redeem prior to the Stated Maturity thereof all or part of the Series of Securities pursuant to the terms of such Securities, it shall notify the Trustee of the redemption date and the principal amount of the Series of Securities to be redeemed.

Section 3.02 Selection of Securities to be Redeemed. Unless otherwise indicated for a particular Series by a Board Resolution, a supplemental indenture or an Officers' Certificate, if less than all the Securities of a Series are to be redeemed, the Trustee shall select the Securities of the Series to be redeemed in any manner that the Trustee deems fair and appropriate. The Trustee shall make the selection from Securities of the Series outstanding not previously called for redemption. Securities of a Series and portions selected for redemption shall be in amounts of \$1,000 or whole multiples of \$1,000 or, with respect to Securities of any Series issuable in other denominations pursuant to Section 2.02(j), the minimum principal denomination for each Series and integral multiples thereof. Provisions of this Indenture that apply to Securities of a Series called for redemption also apply to portions of Securities of that Series called for redemption. The Trustee shall not be liable for the selection made in accordance with this Section 3.02.

Section 3.03 Notice of Redemption.

(a) Unless otherwise specified for a particular Series by a Board Resolution, a supplemental indenture or an Officers' Certificate, at least 30 days but not more than 60 days before a redemption date, the Company shall deliver notice of redemption to each Holder whose Securities are to be redeemed. The notice shall identify the Securities of the Series to be redeemed and shall state:

- (i) the redemption date;
- (ii) the redemption price or the manner of the calculation of the redemption price;
- (iii) the name and address of the Paying Agent;
- (iv) that Securities of the Series called for redemption must be surrendered to the Paying Agent to collect the redemption price;
- (v) that interest on Securities of the Series called for redemption ceases to accrue on and after the redemption date;
- (vi) the CUSIP number, if any; and
- (vii) any other information as may be required by the terms of the particular Series or the Securities of a Series being redeemed.

At the Company's request, the Trustee shall give the notice of redemption in the Company's name and at its expense; provided that the Company shall have delivered to the Trustee, at least five Business Days (or such shorter period as the Trustee may consent to in writing) before notice of redemption is required to be delivered or caused to be delivered to Holders pursuant to this Section 3.03, an Officers' Certificate of the Company requesting that the Trustee give such notice and setting forth the information to be stated in such notice as provided in the preceding paragraph.

Section 3.04 Effect of Notice of Redemption. Once notice of redemption is delivered as provided in Section 3.03, Securities of a Series called for redemption become due and payable on the redemption date and at the redemption price. A notice of redemption may not be conditional. Upon surrender to the Paying Agent, such Securities shall be paid at the redemption price plus accrued interest to the redemption date; provided that installments of interest whose Stated Maturity is on or prior to the redemption date shall be payable to the Holders of such Securities (or one or more predecessor Securities) registered at the close of business on the relevant record date therefor according to their terms and the terms of this Indenture.

Section 3.05 Deposit of Redemption Price. Unless otherwise indicated for a particular Series by a Board Resolution, a supplemental indenture or an Officers' Certificate, on or before 11:00 a.m., New York City time, on the redemption date, the Company shall deposit with the Paying Agent money sufficient to pay the redemption price of and accrued interest, if any, on all Securities to be redeemed on that date.

Section 3.06 Securities Redeemed in Part. Upon surrender of a Security that is redeemed in part, the Company shall issue and the Trustee shall authenticate for the Holder a new Security of the same Series and the same maturity equal in principal amount to the unredeemed portion of the Security surrendered.

ARTICLE IV COVENANTS

Section 4.01 Payment of Principal and Interest. The Company covenants and agrees for the benefit of the Holders of each Series of Securities that it will duly and punctually pay the principal of and interest, if any, on the Securities of that Series in accordance with the terms of such Securities and this Indenture.

Section 4.02 SEC Reports. Any information, documents or other reports that the Company shall file with the Commission pursuant to Section 13 or 15(d) of the Exchange Act shall be filed with the Trustee within 15 days after the same is filed with the Commission; provided that any such information, documents or reports filed or furnished with the Commission pursuant to its Electronic Data Gathering, Analysis and Retrieval (or EDGAR) system shall be deemed filed with the Trustee as of the time such information, documents or reports are filed or furnished via EDGAR.

Section 4.03 Compliance Certificate. The Company shall, so long as any of the Securities are outstanding, deliver to the Trustee, within 120 days after the end of each fiscal year of the Company, an Officers' Certificate stating whether or not to the knowledge of the signers thereof the Company is in default in the performance and observance of any of the terms, provisions and conditions hereof (without regard to any period of grace or requirement of notice provided hereunder), and if a Default or Event of Default shall have occurred, specifying all such Defaults or Events of Default and the nature and status thereof of which they may have knowledge.

Section 4.04 Stay, Extension and Usury Laws. The Company covenants (to the extent that it may lawfully do so) that it will not at any time insist upon, plead or in any manner whatsoever claim or take the benefit or advantage of, any stay, extension or usury law wherever enacted, now or at any time hereafter in force, which may affect the covenants or the performance of this Indenture or the Securities or any other law that would prohibit or forgive the Company from paying all or any portion of the principal of, or interest on, the Securities as contemplated in the Indenture, any indenture supplemental thereto relating to the Securities or the Securities and the Company (to the extent it may lawfully do so) hereby expressly waives all benefit or advantage of any such law and covenants that it will not, by resort to any such law, 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 has been enacted.

**ARTICLE V
SUCCESSORS**

Section 5.01 When Company May Merge, Etc. The Company shall not consolidate with or merge with or into, or convey, transfer or lease all or substantially all of its properties and assets to, another person (a “*Successor Person*”) unless:

(a) the Company is the surviving corporation or the Successor Person (if other than the Company) is organized and validly existing under the laws of any U.S. domestic jurisdiction and expressly assumes the Company’s obligations on the Securities and under this Indenture; and

(b) immediately after giving effect to the transaction, no Default or Event of Default shall have occurred and be continuing.

The Company shall deliver to the Trustee prior to the consummation of the proposed transaction an Officers’ Certificate to the foregoing effect and an Opinion of Counsel stating that the proposed transaction and any supplemental indenture comply with this Indenture.

Section 5.02 Successor Corporation Substituted. Upon any consolidation or merger, or any sale, lease, conveyance or other disposition of all or substantially all of the assets of the Company in accordance with Section 5.01, the successor corporation formed by such consolidation or into or with which the Company is merged or to which such sale, lease, conveyance or other disposition is made shall succeed to, and be substituted for, and may exercise every right and power of, the Company under this Indenture with the same effect as if such Successor Person has been named as the Company herein; provided, however, that the predecessor Company in the case of a sale, conveyance or other disposition (other than a lease) shall be released from all obligations and covenants under this Indenture and the Securities.

**ARTICLE VI
DEFAULTS AND REMEDIES**

Section 6.01 Events of Default.

“*Event of Default*,” wherever used herein with respect to Securities of any Series, means any one of the following events, unless in the establishing Board Resolution, supplemental indenture or Officers’ Certificate, it is provided that such Series shall not have the benefit of said Event of Default or the terms of such Event of Default have been modified or superceded as set forth in the Board Resolution, supplemental indenture or Officers’ Certificate for such Securities of any Series:

(a) default in the payment of any interest on any Security of that Series when it becomes due and payable, and continuance of such default for a period of 30 days (unless the entire amount of such payment is deposited by the Company with the Trustee or with a Paying Agent prior to the expiration of such period of 30 days); or

(b) default in the payment of principal of any Security of that Series at its Maturity; or

(c) default in the performance or breach of any covenant or warranty of the Company in this Indenture (other than a covenant or warranty for which the consequences of nonperformance or breach are addressed elsewhere in this Section 6.01 and other than a covenant or warranty that has been included in this Indenture solely for the benefit of a Series of Securities other than that Series), which default continues uncured 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 not less than a majority in principal amount of the outstanding Securities of that 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

(d) the Company pursuant to or within the meaning of any Bankruptcy Law:

- (i) commences a voluntary case or proceeding;
- (ii) consents to the entry of an order for relief against it in an involuntary case,
- (iii) consents to the appointment of a Custodian of it or for all or substantially all of its property,
- (iv) makes a general assignment for the benefit of its creditors, or
- (v) makes an admission in writing that it is generally unable to pay its debts as the same become due; or

(e) a court of competent jurisdiction enters an order or decree under any Bankruptcy Law that:

- (i) is for relief against the Company in an involuntary case,
- (ii) appoints a Custodian of the Company or for all or substantially all of its property, or
- (iii) orders the liquidation of the Company, and the order or decree remains unstayed and in effect for 90 days; or

(f) any other Event of Default provided with respect to Securities of that Series, which is specified in a Board Resolution, a supplemental indenture hereto or an Officers' Certificate, in accordance with Section 2.02(n).

The term "*Bankruptcy Law*" means Title 11 of the U.S. Code or any similar federal or state law for the relief of debtors. The term "*Custodian*" means any receiver, trustee, assignee, liquidator or similar official under any Bankruptcy Law.

Section 6.02 Acceleration of Maturity; Rescission and Annulment. If an Event of Default with respect to Securities of any Series at the time outstanding occurs and is continuing (other than an Event of Default referred to in Section 6.01(d) or (e)), then in every such case the Trustee or the Holders of not less than a majority in principal amount of the outstanding Securities of that Series may declare the principal amount (or, if any Securities of that Series are Discount Securities, such portion of the principal amount as may be specified in the terms of such Securities) of and accrued and unpaid interest, if any, on all of the Securities of that Series to be due and payable immediately, by a notice in writing to the Company (and to the Trustee if given by Holders), and upon any such declaration such principal amount (or specified amount) and accrued and unpaid interest, if any, shall become immediately due and payable. If an Event of Default specified in Section 6.01(d) or (e) shall occur, the principal amount (or specified amount) of and accrued and unpaid interest, if any, on all outstanding Securities shall be immediately due and payable without any declaration or other act on the part of the Trustee or any Holder. At any time after such a declaration of acceleration with respect to any Series has been made and before a judgment or decree for payment of the money due has been obtained by the Trustee as hereinafter in this Article; provided that the Holders of a majority in principal amount of the outstanding Securities of that 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 Securities of that Series, other than the non-payment of the principal and interest, if any, of Securities of that Series which have become due solely by such declaration of acceleration, have been cured or waived as provided in Section 6.13. No such rescission shall affect any subsequent Default or impair any right consequent thereon.

Section 6.03 Collection of Indebtedness and Suits for Enforcement by Trustee.

The Company covenants that if:

(a) default is made in the payment of any interest on any Security when such interest becomes due and payable and such default continues for a period of 30 days,
or

(b) default is made in the payment of principal of any Security at the Maturity thereof,
then the Company will, upon demand of the Trustee, pay to it, for the benefit of the Holders of such Securities, the whole amount then due and payable on such Securities for principal and interest and, to the extent that payment of such interest shall be legally enforceable, interest on any overdue principal and any overdue interest at the rate or rates prescribed therefor in such Securities 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.

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, may prosecute such proceeding to judgment or final decree and may enforce the same against the Company or any other obligor upon such Securities and collect the moneys adjudged or deemed 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 Securities of any Series 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 6.04 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 proceeding or otherwise, (a) to file and prove a claim for the whole amount of principal and interest owing and unpaid in respect of the Securities and to file such other papers or documents as may be necessary or advisable in order to have the claims of the Trustee (including any claim for the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel) and of the Holders allowed in such judicial proceeding, 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 custodian, receiver, assignee, trustee, liquidator, sequestrator or other similar official in any such judicial proceeding is hereby authorized by each Holder to make such payments to the Trustee and, in the event that the Trustee shall consent to the making of such payments directly to the Holders, to pay to the Trustee any amount due it for the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel, and any other amounts due the Trustee under Section 7.07. Nothing herein contained shall be deemed to authorize the Trustee to authorize or consent to or accept or adopt on behalf of any Holder any plan of reorganization, arrangement, adjustment or composition affecting the Securities or the rights of any Holder thereof or to authorize the Trustee to vote in respect of the claim of any Holder in any such proceeding.

Section 6.05 Trustee May Enforce Claims Without Possession of Securities. All rights of action and claims under this Indenture or the Securities may be prosecuted and enforced by the Trustee without the possession of any of the Securities or the production thereof in any proceeding relating thereto, and any such proceeding instituted by the Trustee shall be brought in its own name as trustee of an express trust, and any recovery of judgment shall, after provision for the payment of the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel, be for the ratable benefit of the Holders of the Securities in respect of which such judgment has been recovered.

Section 6.06 Application of Money Collected.

Any money collected by the Trustee 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 or interest, upon presentation of the Securities and the notation thereon of the payment if only partially paid and upon surrender thereof if fully paid:

First: To the payment of all amounts due the Trustee under Section 7.07; and

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

Third: To the Company.

Section 6.07 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 the Securities of that Series;

(b) the Holders of at least a majority in principal amount of the outstanding Securities of that 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 shall have offered to the Trustee security or indemnity satisfactory to it 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 that Series; it being understood and intended that no one or more of such Holders shall have any right in any manner whatever by virtue of, or by availing of, any provision of this Indenture to affect, disturb or prejudice the rights of any other of such Holders, or to obtain or to seek to obtain priority or preference over any other of such Holders or to enforce any right under this Indenture, except in the manner herein provided and for the equal and ratable benefit of all such Holders.

Section 6.08 Unconditional Right of Holders to Receive Principal 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 of and interest, if any, on such Security on the Stated Maturity or Stated Maturities expressed in such Security (or, in the case of redemption, on the redemption date) and to institute suit for the enforcement of any such payment, and such rights shall not be impaired without the consent of such Holder.

Section 6.09 Restoration of Rights and Remedies. If the Trustee or any Holder has instituted any proceeding to enforce any right or remedy under this Indenture and such proceeding has been discontinued or abandoned for any reason, or has been determined adversely to the Trustee or to such Holder, then and in every such case, subject to any determination in such proceeding, the Company, the Trustee and the Holders shall be restored severally and respectively to their former positions hereunder and thereafter all rights and remedies of the Trustee and the Holders shall continue as though no such proceeding had been instituted.

Section 6.10 Rights and Remedies Cumulative. Except as otherwise provided with respect to the replacement or payment of mutilated, destroyed, lost or stolen Securities in Section 2.08, no right or remedy herein conferred upon or reserved to the Trustee or to the Holders is intended to be exclusive of any other right or remedy, and every right and 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, to the extent permitted by law, prevent the concurrent assertion or employment of any other appropriate right or remedy.

Section 6.11 Delay or Omission Not Waiver. No delay or omission of the Trustee or of any Holder of any Securities 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 Holders may be exercised from time to time, and as often as may be deemed expedient, by the Trustee or by the Holders, as the case may be.

Section 6.12 Control by Holders. Subject to Section 7.02(f), 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) such direction shall not be in conflict with any rule of law or with this Indenture,
- (b) the Trustee may take any other action deemed proper by the Trustee which is not inconsistent with such direction, and
- (c) subject to the provisions of Section 7.01, the Trustee shall have the right to decline to follow any such direction if the Trustee in good faith shall, by a Responsible Officer of the Trustee, determine that the proceeding so directed would involve the Trustee in personal liability.

Section 6.13 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 (i) in the payment of the principal of or interest on any Security of such Series (provided, however, that the Holders of a majority in principal amount of the outstanding Securities of any Series may rescind an acceleration and its consequences, including any related payment default that resulted from such acceleration) or (ii) in respect of a covenant or provision hereof which cannot be modified or amended without the consent of the Holder of each outstanding Security of such Series affected. Upon any such waiver, such Default 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 6.14 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, suffered 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 Company, to any suit instituted by the Trustee, to any suit instituted by any Holder, or group of Holders, holding in the aggregate more than 10% in principal amount of the outstanding Securities of any Series, or to any suit instituted by any Holder for the enforcement of the payment of the principal of or interest on any Security on or after the Stated Maturity or Stated Maturities expressed in such Security (or, in the case of redemption, on the redemption date).

ARTICLE VII TRUSTEE

Section 7.01 Duties of Trustee.

(a) If an Event of Default has occurred and is continuing, the Trustee shall exercise the rights and powers vested in it by this Indenture and use the same degree of care and skill in their exercise as a prudent person would exercise or use under the circumstances in the conduct of such person's own affairs.

(b) Except during the continuance of an Event of Default:

(i) The Trustee need perform only those duties that are specifically set forth in this Indenture and no others and no implied covenants or obligations shall be read into this Indenture against the Trustee.

(ii) In the absence of bad faith on its part, the Trustee may conclusively rely and is fully protected, as to the truth of the statements and the correctness of the opinions expressed therein, upon Officers' Certificates or Opinions of Counsel furnished to the Trustee and conforming to the requirements of this Indenture; however, in the case of any such Officers' Certificates or Opinions of Counsel which by any provisions hereof are specifically required to be furnished to the Trustee, the Trustee shall examine such Officers' Certificates and Opinions of Counsel to determine whether or not they conform to the requirements of this Indenture (but need not confirm or investigate the accuracy of mathematical calculations or other facts stated therein) .

(c) The Trustee may not be relieved from liability for its own negligent action, its own negligent failure to act or its own willful misconduct, except that:

(i) This paragraph does not limit the effect of paragraph (b) 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 is proved that the Trustee was negligent in ascertaining the pertinent facts.

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

(d) Every provision of this Indenture that in any way relates to the Trustee is subject to paragraph (a), (b) and (c) of this Section.

(e) The Trustee may refuse to perform any duty or exercise any right or power at the request or direction of any Holder unless it receives indemnity reasonably satisfactory to it against any loss, liability or expense.

(f) The Trustee shall not be liable for interest on any money received by it except as the Trustee may agree in writing with the Company. Money held in trust by the Trustee need not be segregated from other funds except to the extent required by law.

(g) No provision of this Indenture shall require the Trustee to risk its own funds or otherwise incur any financial liability in the performance of any of its duties, 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 is not reasonably assured to it.

(h) The rights, privileges, protections, immunities and benefits given to the Trustee, including the right to be indemnified, are extended to, and shall be enforceable by the Trustee in each of its capacities hereunder and to its agents. The provisions set forth in paragraphs (a), (b) and (c) of this Section shall apply to the Trustee in each of its capacities hereunder and its agents.

Section 7.02 Rights of Trustee.

(a) The Trustee may conclusively rely on and shall be protected in acting or refraining from acting upon any document believed by it to be genuine and to have been signed or presented by the proper person. The Trustee need not investigate any fact or matter stated in the document.

(b) Before the Trustee acts or refrains from acting at the direction of the Company, it may require an Officers' Certificate. The Trustee shall not be liable for any action it takes or omits to take in good faith in reliance on such Officers' Certificate.

(c) The Trustee may act through agents and shall not be responsible for the misconduct or negligence of any agent appointed with due care. No Depositary shall be deemed an agent of the Trustee, and the Trustee shall not be responsible for any act or omission by any Depositary.

(d) The Trustee shall not be liable for any action it takes or omits to take in good faith which it believes to be authorized or within its rights or powers, provided that the Trustee's conduct does not constitute negligence or willful misconduct.

(e) The Trustee may consult with counsel, and the advice of such counsel or any Opinion of Counsel shall be full and complete authorization and protection in respect of any action taken, suffered or omitted by it hereunder without negligence and in good faith and in reliance thereon.

(f) 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 Holders of Securities unless such Holders shall have offered to the Trustee security or indemnity satisfactory to it against the costs, expenses and liabilities which might be incurred by it in compliance with such request or direction.

(g) 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, note, other evidence of indebtedness or other paper or document believed by the Trustee to be genuine and to have been signed or delivered by the proper person.

(h) The Trustee shall not be deemed to have notice of any Default or Event of Default, other than a failure by the Company to make any payment hereunder when due if the Trustee is the Paying Agent, unless a Responsible Officer of the Trustee has actual knowledge thereof or unless written notice of any event which is in fact such a default is received by the Trustee at the Corporate Trust Office of the Trustee, and such notice references the Securities generally or the Securities of a particular Series and this Indenture and states that it is a "notice of default."

(i) The permissive rights of the Trustee enumerated herein shall not be construed as duties.

(j) In no event shall the Trustee be responsible or liable for any special, indirect, punitive, incidental or consequential loss or damage of any kind whatsoever (including, but not limited to, lost profits) irrespective of whether the Trustee has been advised of the likelihood of such loss or damage and regardless of the form of action.

(k) Neither the Trustee nor any Agent shall be responsible or liable for any failure or delay in the performance of its obligation under this Indenture arising out of or caused, directly or indirectly, by circumstances beyond its reasonable control, including, without limitation, acts of God; earthquakes; fire; flood; wars; acts of terrorism; civil or military disturbances; sabotage; epidemic; riots; interruptions, loss or malfunctions of utilities, computer (hardware or software) or communications services; accidents; labor disputes; acts of civil or military authority or governmental action; it being understood that each of the Trustee and Agents shall use commercially reasonable efforts which are consistent with accepted practices in the banking industry to resume performance as soon as reasonably practicable under the circumstances.

(l) The Trustee shall not be required to give any bond or surety in respect of the performance of its powers and duties hereunder.

Section 7.03 Individual Rights of Trustee. The Trustee in its individual or any other capacity may become the owner or pledgee of Securities and may otherwise deal with the Company or an Affiliate of the Company with the same rights it would have if it were not Trustee. Any Agent may do the same with like rights. The Trustee is also subject to Sections 7.10 and 7.11.

Section 7.04 Trustee's Disclaimer. The Trustee makes no representation as to the validity or adequacy of this Indenture or the Securities, it shall not be accountable for the Company's use of the proceeds from the Securities, and it shall not be responsible for any statement in the Securities other than its authentication.

Section 7.05 Notice of Defaults. If a Default or Event of Default occurs and is continuing with respect to the Securities of any Series and if it is known to a Responsible Officer of the Trustee, the Trustee shall deliver to each Holder of the Securities of that Series notice of a Default or Event of Default within 90 days after it occurs or, if later, after a Responsible Officer of the Trustee has knowledge of such Default or Event of Default. Except in the case of a Default or Event of Default in payment of principal of or interest on any Security of any Series, the Trustee may withhold the notice if and so long as it in good faith determines that withholding the notice is in the interests of Holders of that Series.

Section 7.06 Reports by Trustee to Holders. Within 60 days after March 15 in each year, the Trustee shall transmit by deliver to all Holders, as their names and addresses appear on the register kept by the Registrar a brief report dated as of such March 15, in accordance with, and to the extent required under, TIA Section 313. A copy of each report at the time of its delivery to Holders of any Series shall be filed with the SEC and each stock exchange on which the Securities of that Series are listed. The Company shall promptly notify the Trustee when Securities of any Series are listed on any stock exchange.

Section 7.07 Compensation and Indemnity. The Company shall pay to the Trustee from time to time compensation for its services as the Company and the Trustee shall from time to time agree upon in writing. The Trustee's compensation shall not be limited by any law on compensation of a trustee of an express trust. The Company shall reimburse the Trustee upon request for all reasonable out-of-pocket expenses incurred by it. Such expenses shall include the reasonable compensation and expenses of the Trustee's agents and counsel. The Company shall indemnify each of the Trustee and any predecessor Trustee (including the cost of defending itself) against any loss, liability or expense, including taxes (other than taxes based upon, measured by or determined by the income of the Trustee) incurred by it except as set forth in this Section 7.07 in the performance of its duties under this Indenture as Trustee or Agent. The Trustee shall notify the Company promptly of any claim for which it may seek indemnity. Failure or delay by the Trustee to so notify the Company of any claim for which it may seek indemnity shall not relieve the Company of its obligations hereunder except to the extent such failure or delay shall have materially prejudiced the Company. The Company shall defend the claim and the Trustee shall cooperate in the defense. The Trustee may have one separate counsel and the Company shall pay the reasonable fees and expenses of such counsel. The Company need not pay for any settlement made without its consent, which consent shall not be unreasonably withheld. This indemnification shall apply to officers, directors, employees, shareholders and agents of the Trustee. The Company need not reimburse any expense or indemnify against any loss or liability incurred by the Trustee or by any officer, director, employee, shareholder or agent of the Trustee through the gross negligence or willful misconduct of any such persons as determined by a final order of a court of competent jurisdiction. When the Trustee incurs expenses or renders services after an Event of Default specified in Section 6.01(d) or (e) occurs, the expenses and the compensation for the services are intended to constitute expenses of administration under any insolvency, bankruptcy or similar law. The provisions of this Section shall survive the resignation or removal of the Trustee and the termination or discharge of this Indenture.

Section 7.08 Replacement of Trustee. A resignation or removal of the Trustee and appointment of a successor Trustee shall become effective only upon the successor Trustee's acceptance of appointment as provided in this Section. The Trustee may resign with respect to the Securities of one or more Series by so notifying the Company at least 30 days prior to the date of the proposed resignation. The Holders of a majority in principal amount of the Securities of any Series may remove the Trustee with respect to that Series by so notifying the Trustee and the Company. The Company may remove the Trustee with respect to Securities of one or more Series if:

- (a) the Trustee fails to comply with Section 7.10;
- (b) the Trustee is adjudged bankrupt or insolvent or an order for relief is entered with respect to the Trustee under any insolvency, bankruptcy or similar law;

- (c) a custodian or public officer takes charge of the Trustee or its property; or
- (d) the Trustee becomes incapable of acting.

If the Trustee resigns or is removed or if a vacancy exists in the office of Trustee for any reason, the Company shall promptly appoint a successor Trustee.

If a successor Trustee with respect to the Securities of any one or more Series does not take office within 60 days after the retiring Trustee resigns or is removed, the retiring Trustee, the Company or the Holders of at least a majority in principal amount of the Securities of the applicable Series may petition any court of competent jurisdiction for the appointment of a successor Trustee.

A successor Trustee shall deliver a written acceptance of its appointment to the retiring Trustee and to the Company. Immediately after that, the retiring Trustee shall transfer all property held by it as Trustee to the successor Trustee subject to the lien provided for in Section 7.07, the resignation or removal of the retiring Trustee shall become effective, and the successor Trustee shall have all the rights, powers and duties of the Trustee with respect to each Series of Securities for which it is acting as Trustee under this Indenture. A successor Trustee shall deliver a notice of its succession to each Holder of each such Series. Notwithstanding replacement of the Trustee pursuant to this Section 7.08, the Company's obligations under Section 7.07 hereof shall continue for the benefit of the retiring Trustee with respect to expenses and liabilities incurred by it prior to the date of such replacement.

Section 7.09 Successor Trustee by Merger, etc. If the Trustee consolidates with, merges or converts into, or transfers all or substantially all of its corporate trust business (including administration of this Indenture) to, another corporation, the successor corporation without any further act shall be the successor Trustee.

Section 7.10 Eligibility; Disqualification. This Indenture shall always have a Trustee who satisfies the requirements of TIA Section 310(a)(1), (2) and (5) and has a combined capital and surplus of at least \$50,000,000. The Trustee shall comply with TIA Section 310(b).

Section 7.11 Preferential Collection of Claims Against Company. The Trustee is subject to TIA Section 311(a), excluding any creditor relationship listed in TIA Section 311(b). A Trustee who has resigned or been removed shall be subject to TIA Section 311(a) to the extent indicated.

ARTICLE VIII SATISFACTION AND DISCHARGE; DEFEASANCE

Section 8.01 Satisfaction and Discharge of Indenture.

This Indenture shall upon Company Order cease to be of further effect (except as hereinafter provided in this Section 8.01), and the Trustee, at the expense of the Company, shall execute proper instruments acknowledging satisfaction and discharge of this Indenture, when

(a) any of the following shall have occurred:

(i) no Securities have been issued hereunder;

(ii) all Securities theretofore authenticated and delivered (other than Securities that have been destroyed, lost or stolen and that have been replaced or paid) have been delivered to the Trustee for cancellation; or

(iii) all such Securities not theretofore delivered to the Trustee for cancellation (1) have become due and payable, or (2) will become due and payable at their Stated Maturity within one year, or (3) are to be called for redemption within one year under arrangements satisfactory to the Trustee for the giving of notice of redemption by the Trustee in the name, and at the expense, of the Company; and the Company has irrevocably deposited or caused to be deposited with the Trustee as trust funds in trust an amount sufficient for the purpose of paying and discharging the entire indebtedness on such Securities not theretofore delivered to the Trustee for cancellation, for principal and interest to the date of such deposit (in the case of Securities which have become due and payable on or prior to the date of such deposit) or to the Stated Maturity or redemption date, as the case may be;

(b) the Company has paid or caused to be paid all other sums payable hereunder by the Company; 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 have been complied with.

Notwithstanding the satisfaction and discharge of this Indenture, the obligations of the Company to the Trustee under Section 7.07 and, if money shall have been deposited with the Trustee pursuant to clause (a) of this Section, the provisions of Sections 2.04, 2.05, 2.07, 2.08, 8.01, 8.02 and 8.05 shall survive.

Section 8.02 Application of Trust Funds; Indemnification.

(a) Subject to the provisions of Section 8.05, all money deposited with the Trustee pursuant to Section 8.01, all money and U.S. Government Obligations or Foreign Government Obligations deposited with the Trustee pursuant to Section 8.03 or 8.04 and all money received by the Trustee in respect of U.S. Government Obligations or Foreign Government Obligations deposited with the Trustee pursuant to Section 8.03 or 8.04, shall be held in trust and applied by it, in accordance with the provisions of the Securities and this Indenture, to the payment, either directly or through any Paying Agent (other than the Company acting as its own Paying Agent) as the Trustee may determine, to the persons entitled thereto, of the principal and interest for whose payment such money has been deposited with or received by the Trustee or analogous payments as contemplated by Sections 8.03 or 8.04.

(b) The Company shall pay and shall indemnify the Trustee against any tax, fee or other charge imposed on or assessed against U.S. Government Obligations or Foreign Government Obligations deposited pursuant to Sections 8.03 or 8.04 or the interest and principal received in respect of such obligations other than any payable by or on behalf of Holders.

(c) The Trustee shall deliver or pay to the Company from time to time upon Company Request any U.S. Government Obligations or Foreign Government Obligations or money held by it as provided in Sections 8.03 or 8.04 which, in the opinion of a nationally recognized firm of independent certified public accountants expressed in a written certification thereof delivered to the Trustee, are then in excess of the amount thereof which then would have been required to be deposited for the purpose for which such U.S. Government Obligations or Foreign Government Obligations or money were deposited or received. This provision shall not authorize the sale by the Trustee of any U.S. Government Obligations or Foreign Government Obligations held under this Indenture.

Section 8.03 Legal Defeasance of Securities of any Series. Unless this Section 8.03 is otherwise specified, pursuant to Section 2.02(s), to be inapplicable to Securities of any Series, the Company shall be deemed to have paid and discharged the entire indebtedness on all the outstanding Securities of any Series on the 91st day after the date of the deposit referred to in subparagraph (d) hereof, and the provisions of this Indenture, as it relates to such outstanding Securities of such Series, shall no longer be in effect (and the Trustee, at the expense of the Company, shall, at Company Request, execute such instruments reasonably requested by the Company acknowledging the same), except as to:

(a) the rights of Holders of Securities of such Series to receive, from the trust funds described in subparagraph (d) hereof, (i) payment of the principal of and each installment of principal of and interest on the outstanding Securities of such Series on the Stated Maturity of such principal or installment of principal or interest, and (ii) the benefit of any mandatory sinking fund payments applicable to the Securities of such Series on the day on which such payments are due and payable in accordance with the terms of this Indenture and the Securities of such Series; and

(b) the provisions of Sections 2.04, 2.05, 2.07, 2.08, 8.02, 8.03 and 8.05; and

(c) the rights, powers, trust and immunities of the Trustee hereunder; provided that, the following conditions shall have been satisfied:

(d) with reference to this Section 8.03, the Company shall have deposited or caused to be irrevocably deposited (except as provided in Section 8.02(c)) with the Trustee as trust funds in trust for the purpose of making the following payments, specifically pledged as security for and dedicated solely to the benefit of the Holders of such Securities (i) in the case of Securities of such Series denominated in Dollars, cash in Dollars and/or U.S. Government Obligations, or (ii) in the case of Securities of such Series denominated in a Foreign Currency (other than a composite currency), money and/or Foreign Government Obligations, which through the payment of interest and principal in respect thereof in accordance with their terms, will provide (and without reinvestment and assuming no tax liability will be imposed on such Trustee), not later than one day before the due date of any payment of money, an amount in cash, sufficient, in the opinion 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 of and interest, if any, on and any mandatory sinking fund payments in respect of all the Securities of such Series on the dates such installments of interest or principal and such sinking fund payments are due;

(e) such deposit will not result in a breach or violation of, or constitute a default under, this Indenture or any other agreement or instrument to which the Company is a party or by which it is bound;

(f) no Default or Event of Default with respect to the Securities of such Series shall have occurred and be continuing on the date of such deposit or during the period ending on the 91st day after such date;

(g) the Company shall have delivered to the Trustee an Officers' Certificate and an Opinion of Counsel to the effect that (i) the Company has received from, or there has been published by, the Internal Revenue Service a ruling, or (ii) since the date of execution of this Indenture, there has been a change in the applicable Federal income tax law, in either case to the effect that, and based thereon such Opinion of Counsel 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 amounts 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;

(h) the Company shall have delivered to the Trustee an Officers' Certificate stating that the deposit was not made by the Company with the intent of preferring the Holders of the Securities of such Series over any other creditors of the Company or with the intent of defeating, hindering, delaying or defrauding any other creditors of the Company;

(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 relating to the defeasance contemplated by this Section have been complied with; and

(j) such defeasance shall 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 such trust shall be registered under such Act or exempt from registration thereunder.

Section 8.04 Covenant Defeasance. Unless this Section 8.04 is otherwise specified, pursuant to Section 2.02(s), to be inapplicable to Securities of any Series, on and after the 91st day after the date of the deposit referred to in subparagraph (a) hereof, the Company may omit to comply with respect to the Securities of any Series with any term, provision or condition set forth under Sections 4.02, 4.03, and 5.01 as well as any additional covenants specified in a supplemental indenture for such Series of Securities or a Board Resolution or an Officers' Certificate delivered pursuant to Section 2.02 (and the failure to comply with any such covenants shall not constitute a Default or Event of Default with respect to such Series under Section 6.01) and the occurrence of any event specified in a supplemental indenture for such Series of Securities or a Board Resolution or an Officers' Certificate delivered pursuant to Section 2.02 and designated as an Event of Default shall not constitute a Default or Event of Default hereunder, with respect to the Securities of such Series, provided that the following conditions shall have been satisfied:

(a) with reference to this Section 8.04, the Company has deposited or caused to be irrevocably deposited (except as provided in Section 8.02(c)) with the Trustee as trust funds in trust for the purpose of making the following payments specifically pledged as security for, and dedicated solely to, the benefit of the Holders of such Securities (i) in the case of Securities of such Series denominated in Dollars, cash in Dollars and/or U.S. Government Obligations, or (ii) in the case of Securities of such Series denominated in a Foreign Currency (other than a composite currency), money and/or Foreign Government Obligations, which through the payment of interest and principal in respect thereof in accordance with their terms, will provide (and without reinvestment and assuming no tax liability will be imposed on such Trustee), not later than one day before the due date of any payment of money, an amount in cash, sufficient, in the opinion of a nationally recognized firm of independent certified public accountants expressed in a written certification thereof delivered to the Trustee, to pay and discharge each installment of principal of and interest, if any, on and any mandatory sinking fund payments in respect of the Securities of such Series on the dates such installments of interest or principal and such sinking fund payments are due;

(b) such deposit will not result in a breach or violation of, or constitute a default under, this Indenture or any other agreement or instrument to which the Company is a party or by which it is bound;

(c) no Default or Event of Default with respect to the Securities of such Series shall have occurred and be continuing on the date of such deposit or during the period ending on the 91st day after such date;

(d) the Company shall have delivered to the Trustee an Opinion of Counsel to the effect that 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 amounts, in the same manner and at the same times as would have been the case if such deposit and covenant defeasance had not occurred;

(e) the Company shall have delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that all conditions precedent herein provided for relating to the covenant defeasance contemplated by this Section have been complied with; and

(f) Such defeasance shall 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 such trust shall be registered under such Act or exempt from registration thereunder.

Section 8.05 Repayment to Company. The Trustee and the Paying Agent shall pay to the Company upon written request any money held by them for the payment of principal and interest that remains unclaimed for two years, and after such time, Holders entitled to the money must look to the Company for payment as general creditors unless an applicable abandoned property law designates another person.

Section 8.06 Reinstatement. If the Trustee or the Paying Agent is unable to apply any money deposited with respect to Securities of any series in accordance with Section 8.01 by reason of any legal proceeding or by reason of any order or judgment of any court or governmental authority enjoining, restraining or otherwise prohibiting such application, the obligations of the Company under this Indenture with respect to the Securities of such series and under the Securities of such series shall be revived and reinstated as though no deposit had occurred pursuant to Section 8.01 until such time as the Trustee or the Paying Agent is permitted to apply all such money in accordance with Section 8.01; provided, however, that if the Company has made any payment of principal of, premium (if any) or interest on any Additional Amounts with respect to any Securities because of the reinstatement of its obligations, the Company shall be subrogated to the rights of the Holders of such Securities to receive such payment from the money held by the Trustee or the Paying Agent.

ARTICLE IX AMENDMENTS AND WAIVERS

Section 9.01 Without Consent of Holders. Unless otherwise specified for a particular Series by a Board Resolution, a supplemental indenture or an Officers' Certificate, the Company and the Trustee may amend or supplement this Indenture or the Securities of one or more Series without the consent of any Holder:

(a) to evidence the succession of another person to the Company under this Indenture and the Securities and the assumption by any such Successor Person of the obligations of the Company hereunder and under the Securities;

(b) to add covenants of the Company for the benefit of the Holders of all or any series of Securities (and if such covenants are to be for the benefit of less than all series of Securities, stating that such covenants are expressly being included for the benefit of such series) or to surrender any right or power herein conferred upon the Company provided such action does not adversely affect the interests of the Holders;

(c) to add any additional Events of Default;

(d) to add to or change any of the provisions of this Indenture to such extent as shall be necessary to permit or facilitate the issuance of Securities in bearer form, registrable or not registrable as to principal, and with or without interest coupons, or to permit or facilitate the issuance of Securities in uncertificated form;

(e) to add to, change or eliminate any of the provisions of this Indenture in respect of one or more series of Securities, provided that any such addition, change or elimination (A) shall neither (i) apply to any Security of any series created prior to the execution of such supplemental indenture and entitled to the benefit of such provision nor (ii) modify the rights of the Holder of any such Security with respect to such provision or (B) shall become effective only when there is no such Security Outstanding;

(f) to establish the forms or terms of the Securities of any series issued pursuant to the terms hereof;

(g) to cure any ambiguity or correct any inconsistency in this Indenture;

(h) to evidence and provide for the acceptance of appointment hereunder by a successor Trustee with respect to the Securities of one or more series and to add to or change any of the provisions of this Indenture as shall be necessary to provide for or facilitate the administration of the trusts hereunder by more than one Trustee;

(i) to qualify this Indenture under the Trust Indenture Act;

(ii)

(j) to provide for uncertificated securities in addition to certificated securities;

(k) to supplement any provisions of this Indenture necessary to permit or facilitate the defeasance and discharge of any series of Securities, provided that such action does not adversely affect the interests of the Holders of Securities of such series or any other series;

(l) to conform the Indenture to any Description of Securities for a particular Series of Securities; and

(m) to comply with the rules or regulations of any securities exchange or automated quotation system on which any of the Securities may be listed or traded.

Section 9.02 With Consent of Holders. The Company and the Trustee may enter into a supplemental indenture with the written consent of the Holders of at least a majority in principal amount of the outstanding Securities of each Series affected by such supplemental indenture (including consents obtained in connection with a tender offer or exchange offer for the Securities of such Series), 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 each such Series. Except as provided in Section 6.13, the Holders of at least a majority in principal amount of the outstanding Securities of any Series by notice to the Trustee (including consents obtained in connection with a tender offer or exchange offer for the Securities of such Series) may waive compliance by the Company with any provision of this Indenture or the Securities with respect to such Series. It shall not be necessary for the consent of the Holders of Securities under this Section 9.02 to approve the particular form of any proposed supplemental indenture or waiver, but it shall be sufficient if such consent approves the substance thereof. After a supplemental indenture or waiver under this section becomes effective, the Company shall deliver to the Holders of Securities affected thereby a notice briefly describing the supplemental indenture or waiver. Any failure by the Company to deliver such notice, or any defect therein, shall not, however, in any way impair or affect the validity of any such supplemental indenture or waiver.

Section 9.03 Limitations. Unless otherwise specified for a particular Series by a Board Resolution, a supplemental indenture or an Officers' Certificate, without the consent of each Holder affected, an amendment or waiver may not:

(a) reduce the amount of Securities whose Holders must consent to an amendment, supplement or waiver;

(b) reduce the rate of or extend the time for payment of interest (including default interest) on any Security;

(c) reduce the principal or change the Stated Maturity of any Security or reduce the amount of, or postpone the date fixed for, the payment of any sinking fund or analogous obligation;

(d) reduce the principal amount of Discount Securities payable upon acceleration of the maturity thereof;

(e) waive a Default or Event of Default in the payment of the principal of or interest, if any, on any Security (except a rescission of acceleration of the Securities of any Series by the Holders of at least a majority in principal amount of the outstanding Securities of such Series and a waiver of the payment default that resulted from such acceleration);

(f) make the principal of or interest, if any, on any Security payable in any currency other than that stated in the Security;

(g) make any change in Sections 6.08, 6.13, or 9.03; or

(h) waive a redemption payment with respect to any Security.

Section 9.04 Compliance with Trust Indenture Act. Every amendment to this Indenture or the Securities of one or more Series shall be set forth in a supplemental indenture hereto that complies with the TIA as then in effect.

Section 9.05 Revocation and Effect of Consents. Until an amendment is set forth in a supplemental indenture or a waiver becomes effective, a consent to it by a Holder of a Security is a continuing consent by the Holder and every subsequent Holder of a Security or portion of a Security that evidences the same debt as the consenting Holder's Security, even if notation of the consent is not made on any Security. However, any such Holder or subsequent Holder may revoke the consent as to his Security or portion of a Security if the Trustee receives the notice of revocation before the date of the supplemental indenture or the date the waiver becomes effective. Any amendment or waiver once effective shall bind every Holder of each Series affected by such amendment or waiver unless it is of the type described in any of clauses (a) through (h) of Section 9.03. In that case, the amendment or waiver shall bind each Holder of a Security who has consented to it and every subsequent Holder of a Security or portion of a Security that evidences the same debt as the consenting Holder's Security.

Section 9.06 Notation on or Exchange of Securities. The Trustee may place an appropriate notation about an amendment or waiver on any Security of any Series thereafter authenticated. The Company in exchange for Securities of that Series may issue and the Trustee shall authenticate upon request new Securities of that Series that reflect the amendment or waiver.

Section 9.07 Trustee Protected. 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 receive, in addition to the documents required by Section 10.04, and (subject to Section 7.01) shall be fully protected in relying upon, an Opinion of Counsel stating that all conditions precedent in this Indenture to the execution of such supplemental indenture, if any, have been complied with, such supplemental indenture is authorized hereunder, and, that such supplemental indenture is the valid and legally binding obligation of the Company. The Trustee shall sign all supplemental indentures, except that the Trustee need not sign any supplemental indenture that adversely affects its rights.

**ARTICLE X
MISCELLANEOUS**

Section 10.01 Trust Indenture Act Controls. If any provision of this Indenture limits, qualifies or conflicts with another provision which is required or deemed to be included in this Indenture by the TIA, such required or deemed provision shall control.

Section 10.02 Notices.

(a) Any notice or communication by the Company or the Trustee to the other, or by a Holder to the Company or the Trustee, is duly given if in writing and delivered in person or mailed by first-class mail or sent by telecopier transmission or electronic transmission in PDF addressed as follows:

if to the Company:

Anixa Biosciences, Inc.
3150 Almaden Expressway, Suite 250
San Jose, CA 95118
Attention: Dr. Amit Kumar
Telephone: (408) 708-9808

if to the Trustee:

[]

(b) The Company or the Trustee by notice to the other may designate additional or different addresses for subsequent notices or communications. Any notice or communication to a Holder shall be delivered to his address shown on the register kept by the Registrar. Failure to deliver a notice or communication to a Holder of any Series or any defect in it shall not affect its sufficiency with respect to other Holders of that or any other Series. If a notice or communication is delivered in the manner provided above, within the time prescribed, it is duly given, whether or not the Holder receives it. If the Company delivers a notice or communication to Holders, it shall deliver a copy to the Trustee and each Agent at the same time.

(c) Any notice or demand that by any provision of this Indenture is required or permitted to be given or served by the Company may, at the Company's written request received by the Trustee not fewer than five (5) Business Days prior (or such shorter period of time as may be acceptable to the Trustee) to the date on which such notice must be given or served, be given or served by the Trustee in the name of and at the expense of the Company.

Section 10.03 Communication by Holders with Other Holders. Holders of any Series may communicate pursuant to TIA Section 312(b) with other Holders of that Series or any other Series with respect to their rights under this Indenture or the Securities of that Series or all Series. The Company, the Trustee, the Registrar and anyone else shall have the protection of TIA Section 312(c).

Section 10.04 Certificate and Opinion as to Conditions Precedent. Upon any request or application by the Company to the Trustee to take any action under this Indenture, the Company shall furnish to the Trustee:

(a) an Officers' Certificate stating that, in the opinion of the signers, all conditions precedent, if any, provided for in this Indenture relating to the proposed action have been complied with; and

(b) an Opinion of Counsel stating that, in the opinion of such counsel, all such conditions precedent have been complied with.

Section 10.05 Statements Required in Certificate or Opinion. Each certificate or opinion with respect to compliance with a condition or covenant provided for in this Indenture (other than a certificate provided pursuant to TIA Section 314(a)(4)) shall comply with the provisions of TIA Section 314(e) and shall include:

(a) a statement that the person making such certificate or opinion has read such covenant or condition;

(b) 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;

(c) a statement that, in the opinion of such person, he has made such examination or investigation as is necessary to enable him to express an informed opinion as to whether or not such covenant or condition has been complied with; and

(d) a statement as to whether or not, in the opinion of such person, such condition or covenant has been complied with.

Section 10.06 Rules by Trustee and Agents. The Trustee may make reasonable rules for action by or a meeting of Holders of one or more Series. Any Agent may make reasonable rules and set reasonable requirements for its functions.

Section 10.07 Legal Holidays. Unless otherwise provided by Board Resolution, Officers' Certificate or supplemental indenture hereto for a particular Series, a "*Legal Holiday*" is any day that is not a Business Day. If a payment date is a Legal Holiday at a place of payment, payment may be made at that place on the next succeeding day that is not a Legal Holiday, and no interest shall accrue for the intervening period.

Section 10.08 No Recourse Against Others. A director, officer, employee or stockholder, as such, of the Company shall not have any liability for any obligations of the Company under the Securities or the Indenture or for any claim based on, in respect of or by reason of such obligations or their creation. Each Holder by accepting a Security waives and releases all such liability. The waiver and release are part of the consideration for the issue of the Securities.

Section 10.09 Counterparts. This Indenture may be executed in any number of counterparts and by the parties hereto in separate counterparts, each of which when so executed shall be deemed to be an original and all of which taken together shall constitute one and the same agreement. The exchange of copies of this Indenture and of signature pages by facsimile or PDF transmission shall constitute effective execution and delivery of this Indenture as to the parties hereto and may be used in lieu of the original Indenture for all purposes. Signatures of the parties hereto transmitted by facsimile or PDF shall be deemed to be their original signatures for all purposes.

Section 10.10 Governing Laws. This Indenture and the Securities will be governed by, and construed in accordance with, the internal laws of the State of New York.

Section 10.11 No Adverse Interpretation of Other Agreements. This Indenture may not be used to interpret another indenture, loan or debt agreement of the Company or a Subsidiary of the Company. Any such indenture, loan or debt agreement may not be used to interpret this Indenture.

Section 10.12 Successors. All agreements of the Company in this Indenture and the Securities shall bind its successor. All agreements of the Trustee in this Indenture shall bind its successor.

Section 10.13 Severability. 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 10.14 Table of Contents, Headings, Etc. The Table of Contents, Cross-Reference Table, and headings of the Articles and Sections of this Indenture have been inserted for convenience of reference only, are not to be considered a part hereof, and shall in no way modify or restrict any of the terms or provisions hereof.

Section 10.15 Securities in a Foreign Currency. Unless otherwise specified in a Board Resolution, a supplemental indenture hereto or an Officers' Certificate delivered pursuant to Section 2.02 of this Indenture with respect to a particular Series of Securities, whenever for purposes of this Indenture any action may be taken by the Holders of a specified percentage in aggregate principal amount of Securities of all Series or all Series affected by a particular action at the time outstanding and, at such time, there are outstanding Securities of any Series which are denominated in a coin or currency other than Dollars, then the principal amount of Securities of such Series which shall be deemed to be outstanding for the purpose of taking such action shall be that amount of Dollars that could be obtained for such amount at the Market Exchange Rate at such time. For purposes of this Section 10.15, "*Market Exchange Rate*" shall mean the noon Dollar buying rate in New York City for cable transfers of that currency as published by the Federal Reserve Bank of New York. If such Market Exchange Rate is not available for any reason with respect to such currency, the Company shall use, in its sole discretion and without liability on its part, such quotation of the Federal Reserve Bank of New York as of the most recent available date, or quotations from one or more major banks in The City of New York or in the country of issue of the currency in question or such other quotations as the Company, shall deem appropriate. The provisions of this paragraph shall apply in determining the equivalent principal amount in respect of Securities of a Series denominated in currency other than Dollars in connection with any action taken by Holders of Securities pursuant to the terms of this Indenture. All decisions and determinations of the Company regarding the Market Exchange Rate or any alternative determination provided for in the preceding paragraph shall be in its sole discretion and shall, in the absence of manifest error, to the extent permitted by law, be conclusive for all purposes and irrevocably binding upon the Company, the Trustee and all Holders. The Trustee shall have no duty to calculate or verify the calculations made pursuant to this Section 10.15.

Section 10.16 U.S.A. Patriot Act. The Company acknowledges that in accordance with Section 326 of the U.S.A. Patriot Act, the Trustee, like all financial institutions, and in order to help fight the funding of terrorism and money laundering, is required to obtain, verify, and record information that identifies each person or legal entity that establishes a relationship or opens an account with the Trustee. The Company agrees that it will provide the Trustee with such information as it may reasonably request as required in order for the Trustee to satisfy the requirements of the U.S.A. Patriot Act.

Section 10.17 Waiver of Jury Trial. EACH OF THE COMPANY AND THE TRUSTEE HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING AS BETWEEN THE COMPANY AND THE TRUSTEE ONLY ARISING OUT OF OR RELATING TO THIS INDENTURE OR THE SECURITIES.

**ARTICLE XI
SINKING FUNDS**

Section 11.01 Applicability of Article. The provisions of this Article shall be applicable to any sinking fund for the retirement of the Securities of a Series, except as otherwise permitted or required by any form of Security of such Series issued pursuant to this Indenture. The minimum amount of any sinking fund payment provided for by the terms of the Securities of any Series is herein referred to as a “*mandatory sinking fund payment*” and any other amount provided for by the terms of Securities of such Series is herein referred to as an “*optional sinking fund payment*.” If provided for by the terms of Securities of any Series, the cash amount of any sinking fund payment may be subject to reduction as provided in Section 11.02. Each sinking fund payment shall be applied to the redemption of Securities of any Series as provided for by the terms of the Securities of such Series.

Section 11.02 Satisfaction of Sinking Fund Payments with Securities. The Company may, in satisfaction of all or any part of any sinking fund payment with respect to the Securities of any Series to be made pursuant to the terms of such Securities (1) deliver outstanding Securities of such Series to which such sinking fund payment is applicable (other than any of such Securities previously called for mandatory sinking fund redemption) and (2) apply as credit Securities of such Series to which such sinking fund payment is applicable and which have been repurchased by the Company or redeemed either at the election of the Company pursuant to the terms of such Series of Securities (except pursuant to any mandatory sinking fund) or through the application of permitted optional sinking fund payments or other optional redemptions pursuant to the terms of such Securities, provided that such Securities have not been previously so credited. Such Securities shall be received by the Trustee, together with an Officers’ Certificate with respect thereto, not later than 15 days prior to the date on which the Trustee begins the process of selecting Securities for redemption, and shall be credited for such purpose by the Trustee at the price specified in such Securities for redemption through operation of the sinking fund and the amount of such sinking fund payment shall be reduced accordingly. If as a result of the delivery or credit of Securities in lieu of cash payments pursuant to this Section 11.02, the principal amount of Securities of such Series to be redeemed in order to exhaust the aforesaid cash payment shall be less than \$100,000, the Trustee need not call Securities of such Series for redemption, except upon receipt of a Company Order that such action be taken, and such cash payment shall be held by the Trustee or a Paying Agent and applied to the next succeeding sinking fund payment, provided, however, that the Trustee or such Paying Agent shall from time to time upon receipt of a Company Order pay over and deliver to the Company any cash payment so being held by the Trustee or such Paying Agent upon delivery by the Company to the Trustee of Securities of that Series purchased by the Company having an unpaid principal amount equal to the cash payment required to be released to the Company.

Section 11.03 Redemption of Securities for Sinking Fund. Not less than 45 days (unless otherwise indicated in the Board Resolution, supplemental indenture or Officers' Certificate in respect of a particular Series of Securities) prior to each sinking fund payment date for any Series of Securities, the Company will deliver to the Trustee an Officers' Certificate specifying the amount of the next ensuing mandatory sinking fund payment for that Series pursuant to the terms of that Series, the portion thereof, if any, which is to be satisfied by payment of cash and the portion thereof, if any, which is to be satisfied by delivering and crediting of Securities of that Series pursuant to Section 11.02, and the optional amount, if any, to be added in cash to the next ensuing mandatory sinking fund payment, and the Company shall thereupon be obligated to pay the amount therein specified. Not less than 30 days (unless otherwise indicated in the Board Resolution, Officers' Certificate or supplemental indenture in respect of a particular Series of Securities) before each such sinking fund payment date the Trustee shall select the Securities to be redeemed upon such sinking fund payment date in the manner specified in Section 3.02 and cause notice of the redemption thereof to be given in the name of and at the expense of the Company in the manner provided in Section 3.03. Such notice having been duly given, the redemption of such Securities shall be made upon the terms and in the manner stated in Sections 3.04, 3.05 and 3.06.

[Remainder of page intentionally left blank]

IN WITNESS WHEREOF, the parties hereto have caused this Indenture to be duly executed and attested, all as of the day and year first above written.

ANIXA BIOSCIENCES, INC.

By: _____
Name: Dr. Amit Kumar
Title: President and Chief Executive Officer

[_____]
as Trustee

By: _____
Name:
Title:

[Signature Page to Indenture]

ELLENOFF GROSSMAN & SCHOLE LLP
1345 AVENUE OF THE AMERICAS
NEW YORK, NEW YORK 10105
TELEPHONE: (212) 370-1300
FACSIMILE: (212) 370-7889
www.egsllp.com

June 11, 2019

Anixa Biosciences, Inc.
3150 Almaden Expressway, Suite 250
San Jose, CA 95118

Re: Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as counsel to Anixa Biosciences, Inc., a Delaware corporation (the "Company"), in connection with the preparation of a registration statement on Form S-3 (the "Registration Statement"), filed by the Company with the Securities and Exchange Commission (the "Commission") pursuant to the Securities Act of 1933, as amended (the "Securities Act"), relating to the offer and sale from time to time by the Company of up to a maximum of \$100,000,000 aggregate initial offering price of a presently indeterminate amount of the following securities (each a "Company Security" and collectively, or in any combination, the "Company Securities"):

- (i) shares of the Company's common stock, \$0.01 par value per share (the "Common Stock");
- (ii) one or more classes or series of shares of the Company's preferred stock, \$100.00 par value per share (the "Preferred Stock");
- (iii) purchase contracts entitling or obligating holders to purchase from or sell to the Company, and for the Company to sell to or purchase from such holders, a specific or varying number of debt or equity securities issued by the Company or by an entity other than the Company at a future date or dates;
- (iv) warrants to purchase common stock, preferred stock, debt securities, other securities or any combination of those securities;
- (v) subscription rights to purchase Common Stock or Preferred Stock;
- (vi) depositary receipts;
- (vii) debt securities (which may be senior or subordinated, convertible or non-convertible, secured or unsecured); and
- (viii) units consisting of any combination of the foregoing securities.

The Company Securities may be issued and sold by the Company pursuant to applicable provisions of Rule 415 under the Securities Act, in amounts, at prices and on terms to be determined in light of market conditions at the time of sale, and as set forth in the Registration Statement, any amendment thereto, the prospectus contained therein (the "Prospectus") and any supplements to the Prospectus (each, a "Prospectus Supplement"). The Company Securities may be issued from time to time on a delayed or continuous basis, and this opinion is limited to the laws, including the rules and regulations, as in effect on the date hereof, which laws are subject to change with possible retroactive effect.

Additionally, we have acted as counsel to the Company in connection with the sale through B. Riley FBR, Inc. as the sales agent (the "Sales Agent") from time to time by the Company of shares of Common Stock (the "Sales Agreement Shares") having an aggregate offering price of up to \$50,000,000 pursuant to the Registration Statement, including the Prospectus and the related prospectus for the sale of Sales Agreement Shares (collectively, the "Sales Agreement Prospectus").

You have requested our opinion as to the matters set forth below in connection with the Registration Statement. For purposes of rendering the opinions set forth below, we have examined such documents and reviewed such questions of law as we have considered necessary and appropriate for the purposes of our opinion including (i) the Registration Statement, including the exhibits filed therewith, (ii) the Prospectus, (iii) the Sales Agreement Prospectus, (iv) the Company's certificate of incorporation, as amended (the "Certificate of Incorporation"), (v) the Company's amended and restated bylaws, as amended (the "Bylaws"), (vi) the corporate resolutions and other actions of the Company that authorize and provide for the filing of the Registration Statement, and we have made such other investigation as we have deemed appropriate. We have not independently established any of the facts so relied on.

For purposes of this opinion letter, we have assumed the accuracy and completeness of each document submitted to us, the genuineness of all signatures on original documents, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as facsimile, electronic, certified, conformed or photostatic copies thereof, and the due execution and delivery of all documents where due execution and delivery are prerequisites to the effectiveness thereof. We have further assumed the legal capacity of natural persons, that persons identified to us as officers of the Company are actually serving in such capacity, that the representations of officers and employees of the Company are correct as to questions of fact, that the board of directors will have taken all action necessary to set the issuance price of the Company Securities to be offered and sold and that each party to the documents we have examined or relied on (other than the Company) has the power, corporate or other, to enter into and perform all obligations thereunder and also have assumed the due authorization by all requisite action, corporate or other, the execution and delivery by such parties of such documents, and the validity and binding effect thereof on such parties. We have not independently verified any of these assumptions.

The opinions expressed in this opinion letter are limited to (i) the General Corporation Law of the State of Delaware (the "DGCL") and the applicable statutory provisions of the Delaware Constitution and the reported judicial decisions interpreting such statute and provisions and, solely in connection with the opinions given in numbered paragraphs 1 and 2 below and (ii) the laws of the State of New York solely in connection with the opinions given in numbered paragraph 9 below. We are not opining on, and we assume no responsibility for, the applicability to or effect on any of the matters covered herein of (a) any other laws; (b) the laws of any other jurisdiction; or (c) the laws of any county, municipality or other political subdivision or local governmental agency or authority.

Based on the foregoing and in reliance thereon, and subject to the assumptions, qualifications, limitations and exceptions set forth below, we are of the opinion that:

1. With respect to shares of Common Stock, when (a) the board of directors of the Company has taken all necessary corporate action to approve the issuance and terms of the offering thereof and related matters, including without limitation the due reservation of any Common Stock for issuance, and (b) certificates representing the shares of Common Stock have been duly executed, countersigned, registered and delivered, in each case in accordance with the Certificate of Incorporation and Bylaws, either (i) in accordance with the applicable definitive purchase, underwriting or similar agreement approved by the board of directors of the Company upon payment of the consideration therefor (which consideration shall not be less than the par value of the Common Stock) provided for in such definitive purchase, underwriting or similar agreement, as applicable, or (ii) upon conversion, exchange or exercise of any other Company Security in accordance with the terms of such Company Security or the instrument governing such Company Security providing for the conversion, exchange or exercise as approved by the board of directors of the Company, for the consideration therefor set forth in the applicable agreement and approved by the board of directors of the Company, which consideration shall not be less than the par value of the Common Stock, such shares of Common Stock will be validly issued, fully paid, and non-assessable.

2. With respect to shares of any series of Preferred Stock, when (a) the board of directors of the Company has taken all necessary corporate action to approve the issuance and terms of the shares of such series, the terms of the offering thereof and related matters, including the adoption of a certificate of designation or amendment to the Certificate of Incorporation fixing and determining the terms of such Preferred Stock conforming to the DGCL, the filing of a certificate or amendment, as applicable, with the Secretary of State of Delaware, the payment in full of any filing fees attendant thereto, and the due reservation of any Common Stock and Preferred Stock for issuance, and (b) certificates representing the shares of such series of Preferred Stock have been duly executed, countersigned, registered and delivered, in each case in accordance with the Certificate of Incorporation and Bylaws, either (i) in accordance with the applicable definitive purchase, underwriting or similar agreement approved by the board of directors of the Company upon payment of the consideration therefor (which consideration shall not be less than the par value of the Preferred Stock) provided for in such definitive purchase, underwriting or similar agreement, as applicable, or (ii) upon conversion, exchange or exercise of any other Company Security in accordance with the terms of such Company Security or the instrument governing such Company Security providing for the conversion, exchange or exercise as approved by the board of directors of the Company, for the consideration therefor set forth in the applicable agreement and approved by the board of directors of the Company, which consideration shall not be less than the par value of the Preferred Stock, the shares of such series of Preferred Stock will be validly issued, fully paid, and non-assessable.

3. With respect to the issuance of any purchase contracts, when (a) the board of directors of the Company has taken all necessary corporate action to approve the purchase contract agreement to be entered into in connection with the issuance of any purchase contracts and such purchase contract agreement has been validly executed and delivered by the purchase contract agent and Company, (b) the board of directors of the Company has taken all necessary corporate action to approve the specific issuance and terms of any purchase contracts duly established in accordance with the applicable purchase contract agreement and (c) such purchase contracts have been duly executed, countersigned, registered, issued and delivered in accordance with the purchase contract agreement and the applicable definitive purchase, underwriting or similar agreement, as applicable, for the consideration therefor set forth in the applicable agreement and approved by the board of directors of the Company, such purchase contracts will constitute valid and binding obligations of the Company, enforceable against the Company in accordance with their terms, subject to applicable bankruptcy, insolvency and similar laws affecting creditors' rights generally, concepts of reasonableness and equitable principles of general applicability.

4. With respect to the issuance of any warrants, when (a) the board of directors of the Company has taken all necessary corporate action to approve the warrant agreement to be entered into in connection with the issuance of any warrants and such warrant agreement has been validly executed and delivered by the warrant agent and Company, (b) the board of directors of the Company has taken all necessary corporate action to approve the specific issuance and terms of any warrants duly established in accordance with the applicable warrant agreement and (c) such warrants have been duly executed, countersigned, registered, issued and delivered in accordance with the warrant agreement and the applicable definitive purchase, underwriting or similar agreement, as applicable, for the consideration therefor set forth in the applicable agreement and approved by the board of directors of the Company (assuming the securities issuable upon exercise of the warrants have been duly authorized and reserved for issuance by all necessary corporate action and in accordance with applicable law), such warrants will constitute valid and binding obligations of the Company, enforceable against the Company in accordance with their terms, subject to applicable bankruptcy, insolvency and similar laws affecting creditors' rights generally, concepts of reasonableness and equitable principles of general applicability.

5. With respect to the subscription rights, when (a) the board of directors of the Company has taken all necessary corporate action to authorize the issuance and the specific terms of such subscription rights, the terms of the offering thereof, and related matters and (b) such subscription rights and agreements relating to the subscription rights have been duly executed and delivered in accordance with the terms thereof, then such subscription rights will be valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

6. With respect to the depositary shares, when (i) the board of directors of the Company has taken all necessary corporate action to approve the issuance and terms of the depositary shares, the terms of the offering thereof and related matters, including the adoption of a certificate of designation relating to the preferred stock underlying the depositary shares as required by applicable law and the filing of the certificate of designation with the Secretary of State of the State of Delaware as required by applicable law; (ii) the depositary agreement or agreements relating to the depositary shares and the related depositary receipts have been duly authorized and validly executed and delivered by the board of directors of the Company and the depositary appointed by the Company; (iii) the shares of preferred stock underlying the depositary shares have been duly authorized, validly issued and deposited with the depositary under the applicable depositary agreement; and (iv) the depositary receipts representing the depositary shares have been duly executed, countersigned, registered and delivered in accordance with the appropriate depositary agreement approved by the Company, upon payment of the consideration therefor provided for in the applicable definitive purchase, underwriting or similar agreement, the depositary shares will be legally issued and will entitle their holders to the rights specified in the deposit agreement and the depositary receipt.

7. With respect to any debt securities, when (a) the board of directors of the Company has taken all necessary corporate action to approve an applicable indenture, if any, or any amendment or supplement thereto or other agreement in respect thereof, if any, and such indenture, if any, or any amendment or supplement thereto or other agreement in respect thereof, if any, has been validly executed and delivered by the Company, (b) any applicable indenture, if required, has been duly qualified under the Trust Indenture Act of 1939, as amended, if qualification is required thereunder, (c) the board of directors of the Company has taken all necessary corporate action to approve the specific issuance and terms of any series of debt security duly established in accordance with the applicable indenture, if any, and (d) such debt security have been duly executed, countersigned, registered, issued and delivered either (i) in accordance with the indenture, if any, or any amendment or supplement thereto or other agreement in respect thereof, if any, the applicable definitive purchase, underwriting or similar agreement, as applicable, or (ii) upon conversion, exchange or exercise of any other Company Security in accordance with the terms of such Company Security or the instrument governing such Company Security providing for the conversion, exchange or exercise as approved by the board of directors of the Company, for the consideration therefor set forth in the applicable agreement and approved by the board of directors of the Company, such debt securities will constitute valid and binding obligations of the Company, enforceable against the Company in accordance with their terms, subject to applicable bankruptcy, insolvency and similar laws affecting creditors' rights generally, concepts of reasonableness and equitable principles of general applicability, provided that we express no opinion as to (x) the enforceability of any waiver of rights under any usury or state law, (y) the validity, legally binding effect or enforceability of any provision of the indenture that requires or relates to adjustments to the conversion rate at a rate or in an amount that a court would determine in the circumstances under applicable law to be commercially unreasonable or a penalty or forfeiture or (z) the validity, legally binding effect or enforceability of any provision that permits holders to collect any portion of stated principle amount upon acceleration of the debt securities to the extent determined to constitute unearned interest.

8. With respect to the issuance of any units, when (a) the board of directors of the Company has taken all necessary corporate action to approve the unit agreement, if any, to be entered into in connection with the issuance of any units and such unit agreement, if any, has been validly executed and delivered by the unit agent, if any, and Company, (b) the board of directors of the Company has taken all necessary corporate action to approve the specific issuance and terms of any units duly established in accordance with the applicable unit agreement, if any, and (c) such units have been duly executed, countersigned, registered, issued and delivered in accordance with the unit agreement, if any, and the applicable definitive purchase, underwriting or similar agreement, as applicable, for the consideration therefor set forth in the applicable agreement and approved by the board of directors of the Company, such units will constitute valid and binding obligations of the Company, enforceable against the Company in accordance with their terms, subject to applicable bankruptcy, insolvency and similar laws affecting creditors' rights generally, concepts of reasonableness and equitable principles of general applicability.

9. With respect to the Sales Agreement Shares which are a portion of the Common Stock being registered, when the Sales Agreement Shares have been duly registered on the books of the transfer agent and registrar therefor in the name or on behalf of the purchasers thereof, and have been issued by the Company against payment therefor (not less than par value) in the circumstances contemplated by the Sales Agreement Prospectus, the issuance and sale of the Sales Agreement Shares will be duly authorized, validly issued, fully paid and nonassessable.

The opinions set forth above are subject to the following additional assumptions:

(i) the Registration Statement, any amendments thereto (including post-effective amendments), will have been declared effective under the Securities Act and such effectiveness shall not have been terminated, suspended or rescinded;

(ii) all Company Securities will be issued and sold in compliance with applicable federal and state securities laws, rules and regulations and solely in the manner provided in the Registration Statement and the appropriate Prospectus Supplement and there will not have occurred any change in law or fact affecting the validity of any of the opinions rendered herein;

(iii) a definitive purchase, underwriting or similar agreement and any other necessary agreements with respect to any Company Securities offered or issued will have been duly authorized and duly executed and delivered by the Company and the other parties thereto;

(iv) the final terms of any of the Company Securities (including any Company Securities comprising the same or subject thereto), and when issued, the issuance, sale and delivery thereof by the Company, and the incurrence and performance of the Company's obligations thereunder or respect thereof in accordance with the terms thereof, and any consideration received by the Company for any such issuance, sale and delivery, will comply with, and will not violate, the Certificate of Incorporation or Bylaws or any applicable law, rule or regulation, or result in a default under or breach of any agreement or instrument binding upon the Company and will comply with any requirement or restriction imposed by any court or governmental body having jurisdiction over the Company or to which the issuance, sale and delivery of such Company Securities or the incurrence and performance of such obligations may be subject or violate any applicable public policy, or be subject to any defense in law or equity;

(v) the Company shall have taken any action required to be taken by the Company, based on the type of Company Security being offered, to authorize the offer and issuance thereof, and such authorization shall remain in effect and unchanged at all times during which the Company Securities are offered and issued and shall not have been modified or rescinded (subject to the further assumption that the sale of any Company Security takes place in accordance with such authorization), the board of directors of the Company shall have duly established the terms of such Company Security and duly authorized and taken any other necessary corporate action to approve the issuance and sale of such Company Security in conformity with the Certificate of Incorporation and Bylaws (subject to the further assumption that neither the Certificate of Incorporation nor Bylaws have been amended from the date hereof in a manner that would affect the validity of any of the opinions rendered herein), and such authorization shall remain in effect and unchanged at all times during which the Company Securities are offered and issued and shall not have been modified or rescinded (subject to the further assumption that the sale of any Company Security takes place in accordance with such authorization);

(vi) there will exist, under the Certificate of Incorporation, the requisite number of authorized but unissued shares of Common Stock or Preferred Stock (and securities of any class into which any of the Preferred Stock may be convertible), as the case may be; and

(vii) to the extent they purport to relate to liabilities resulting from or based upon gross negligence, recklessness or other conduct committed or omitted willfully or in bad faith or any violation of federal or state securities or blue sky laws, we express no opinions concerning the enforceability of indemnification provisions.

The opinions above are subject to the effects of (i) bankruptcy, insolvency, fraudulent conveyance, fraudulent transfer, reorganization, receivership, moratorium and other similar laws relating to or affecting enforcement of creditors' rights or remedies generally, (ii) general principles of equity, whether such principles are considered in a proceeding of law or at equity, and (iii) an implied covenant of good faith, reasonableness and fair dealing and standards of materiality.

This opinion is limited to the Delaware General Corporation Law, including the statutory provisions of the Delaware General Corporation Law and all applicable provisions of the Delaware Constitution and reported judicial decisions interpreting these laws. We hereby consent to the filing of this opinion as an exhibit to the Registration Statement and to the use of our name under the caption "Legal Matters" in the Prospectus. In giving our consent, we do not thereby admit that we are experts with respect to any part of the Registration Statement, the Prospectus, the Sales Agreement Prospectus or any Prospectus Supplement within the meaning of the term "expert," as used in Section 11 of the Securities Act or the rules and regulations promulgated thereunder by the Commission, nor do we 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.

Yours truly,

/s/ Ellenoff Grossman & Schole LLP

Ellenoff Grossman & Schole LLP

ANIXA BIOSCIENCES, INC.

Common Stock
(par value \$0.01 per share)

At Market Issuance Sales Agreement

June [•], 2019

B. Riley FBR, Inc.
299 Park Avenue, 21st Floor
New York, NY, 10171

Ladies and Gentlemen:

Anixa Biosciences, Inc., a Delaware corporation (the “Company”), confirms its agreement (this “Agreement”) with B. Riley FBR, Inc. (the “Agent”) as follows:

1. Issuance and Sale of Shares. The Company agrees that, from time to time during the term of this Agreement, on the terms and subject to the conditions set forth herein, it may issue and sell through the Agent, shares (the “Placement Shares”) of the Company’s common stock, par value \$0.01 per share (the “Common Stock”); *provided however*, that in no event shall the Company issue or sell through the Agent such number of Placement Shares that (a) would cause the Company to not satisfy the eligibility requirements for use of Form S-3, (b) exceeds the number of shares or dollar amount of Common Stock registered on the effective Registration Statement (as defined below) pursuant to which the offering is being made, (c) exceeds the number of authorized but unissued shares of the Common Stock, or (d) exceeds the number of shares or dollar amount for which the Company has filed a Prospectus Supplement (as defined below) (the lesser of (a) through (d) the “Maximum Amount”). Notwithstanding anything to the contrary contained herein, the parties hereto agree that compliance with the limitations set forth in this Section 1 on the amount of Placement Shares issued and sold under this Agreement shall be the sole responsibility of the Company and that the Agent shall have no obligation in connection with such compliance. The issuance and sale of Placement Shares through the Agent will be effected pursuant to the Registration Statement (as defined below), although nothing in this Agreement shall be construed as requiring the Company to use the Registration Statement to issue any Common Stock, including the Placement Shares.

The Company has filed, or shall file, in accordance with the provisions of the Securities Act of 1933, as amended and the rules and regulations thereunder (the “Securities Act”), with the Securities and Exchange Commission (the “Commission”), a registration statement on Form S-3, including a base prospectus, relating to certain securities including the Placement Shares to be issued from time to time by the Company, and which incorporates by reference documents that the Company has filed or will file in accordance with the provisions of the Securities Exchange Act of 1934, as amended and the rules and regulations thereunder (the “Exchange Act”). The Company has prepared a prospectus supplement to the base prospectus included as part of such registration statement specifically relating to the Placement Shares (the “Prospectus Supplement”). The Company will furnish to the Agent, for use by the Agent, copies of the base prospectus included as part of such registration statement, as supplemented by the Prospectus Supplement, relating to the Placement Shares. Except where the context otherwise requires, such registration statement, and any post-effective amendment thereto, including all documents filed as part thereof or incorporated by reference therein, and including any information contained in a Prospectus (as defined below) subsequently filed with the Commission pursuant to Rule 424(b) under the Securities Act or deemed to be a part of such registration statement pursuant to Rule 430B of the Securities Act, is herein called the “Registration Statement.” The base prospectus, including all documents incorporated or deemed incorporated therein by reference to the extent such information has not been superseded or modified in accordance with Rule 412 under the Securities Act (as qualified by Rule 430B(g) of the Securities Act), included in the Registration Statement, as it may be supplemented by the Prospectus Supplement, in the form in which such base prospectus and/or Prospectus Supplement have most recently been filed by the Company with the Commission pursuant to Rule 424(b) under the Securities Act is herein called the “Prospectus.” Any reference herein to the Registration Statement, the Prospectus or any amendment or supplement thereto shall be deemed to refer to and include the documents incorporated by reference therein, and any reference herein to the terms “amend,” “amendment” or “supplement” with respect to the Registration Statement or the Prospectus shall be deemed to refer to and include the filing after the execution hereof of any document with the Commission incorporated by reference therein (the “Incorporated Documents”).

For purposes of this Agreement, all references to the Registration Statement, the Prospectus or to any amendment or supplement thereto shall be deemed to include the most recent copy filed with the Commission pursuant to its Electronic Data Gathering Analysis and Retrieval System, or if applicable, the Interactive Data Electronic Application system when used by the Commission (collectively, “EDGAR”).

2. Placements. Each time that the Company, in its sole discretion, wishes to issue and sell Placement Shares hereunder (each, a “Placement”), it will notify the Agent by electronic mail (or other method mutually agreed to in writing by the parties) of the number of Placement Shares, the time period during which sales are requested to be made, any limitation on the number of Placement Shares that may be sold in any one day and any minimum price below which sales may not be made (a “Placement Notice”), the form of which is attached hereto as Schedule 1. The Placement Notice shall originate from any of the individuals from the Company set forth on Schedule 3 (with a copy to each of the other individuals from the Company listed on such schedule), and shall be addressed to each of the individuals from the Agent set forth on Schedule 3, as such Schedule 3 may be amended from time to time. The Placement Notice shall be effective immediately upon receipt by the Agent unless and until (i) the Agent declines to accept the terms contained therein for any reason, in its sole discretion, (ii) the entire amount of the Placement Shares thereunder has been sold, (iii) the Company suspends or terminates the Placement Notice, which suspension and termination rights may be exercised by the Company in its sole discretion, or (iv) this Agreement has been terminated under the provisions of Section 13. The amount of any discount, commission or other compensation to be paid by the Company to the Agent in connection with the sale of the Placement Shares shall be calculated in accordance with the terms set forth in Schedule 2. It is expressly acknowledged and agreed that neither the Company nor the Agent will have any obligation whatsoever with respect to a Placement or any Placement Shares unless and until the Company delivers a Placement Notice to the Agent and the Agent does not decline such Placement Notice pursuant to the terms set forth above, and then only upon the terms specified therein and herein. In the event of a conflict between the terms of Sections 2 or 3 of this Agreement and the terms of a Placement Notice, the terms of the Placement Notice will control.

3. Sale of Placement Shares by the Agent. Subject to the terms and conditions of this Agreement, for the period specified in a Placement Notice, the Agent will use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of the NASDAQ Capital Market (the “Exchange”), to sell the Placement Shares up to the amount specified in, and otherwise in accordance with the terms of, such Placement Notice. The Agent will provide written confirmation to the Company no later than the opening of the Trading Day (as defined below) immediately following the Trading Day on which it has made sales of Placement Shares hereunder setting forth the number of Placement Shares sold on such day, the compensation payable by the Company to the Agent pursuant to Section 2 with respect to such sales, and the Net Proceeds (as defined below) payable to the Company, with an itemization of the deductions made by the Agent (as set forth in Section 5(b)) from the gross proceeds that it receives from such sales. Subject to the terms of a Placement Notice, the Agent may sell Placement Shares by any method permitted by law deemed to be an “at the market offering” as defined in Rule 415 of the Securities Act. “Trading Day” means any day on which shares of Common Stock are purchased and sold on the Exchange. Neither the Agent nor any of its affiliates or subsidiaries shall engage in (i) any short sale of any security of the Company, (ii) any sale of any security of the Company that the Agent does not own or any sale which is consummated by the delivery of a security of the Company borrowed by, or for the account of, the Agent, or (iii) any proprietary trading or trading for the Agent’s (or its affiliates’ or subsidiaries’) own account. Notwithstanding the foregoing, these restrictions shall not apply to bona fide transactions executed by the Agent on behalf and at the direction of any of its third party customer accounts.

4. Suspension of Sales. The Company or the Agent may, upon notice to the other party in writing (including by email correspondence to each of the individuals of the other party set forth on Schedule 3, if receipt of such correspondence is actually acknowledged by any of the individuals to whom the notice is sent, other than via auto-reply) or by telephone (confirmed immediately by verifiable facsimile transmission or email correspondence to each of the individuals of the other party set forth on Schedule 3), suspend any sale of Placement Shares (a “Suspension”); *provided, however*, that such suspension shall not affect or impair any party’s obligations with respect to any Placement Shares sold hereunder prior to the receipt of such notice. While a Suspension is in effect, any obligation under Sections 7(l), 7(m), and 7(n) with respect to the delivery of certificates, opinions, or comfort letters to the Agent, shall be waived. Each of the parties agrees that no such notice under this Section 4 shall be effective against any other party unless it is made to one of the individuals named on Schedule 3 hereto, as such Schedule may be amended from time to time.

5. Sale and Delivery to the Agent; Settlement.

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

b. Settlement of Placement Shares. Unless otherwise specified in the applicable Placement Notice, settlement for sales of Placement Shares will occur on the second (2nd) Trading Day (or such earlier day as is industry practice for regular-way trading) following the date on which such sales are made (each, a “Settlement Date”). The Agent shall notify the Company of each sale of Placement Shares no later than opening day following the Trading Day that the Agent sold Placement Shares. The amount of proceeds to be delivered to the Company on a Settlement Date against receipt of the Placement Shares sold (the “Net Proceeds”) will be equal to the aggregate sales price received by the Agent, after deduction for (i) the Agent’s commission, discount or other compensation for such sales payable by the Company pursuant to Section 2 hereof, and (ii) any transaction fees imposed by any governmental or self-regulatory organization in respect of such sales.

c. Delivery of Placement Shares. On or before each Settlement Date, the Company will, or will cause its transfer agent to, electronically transfer the Placement Shares being sold by crediting the Agent's or its designee's account (provided the Agent shall have given the Company written notice of such designee and such designee's account information at least one Trading Day prior to the Settlement Date) at The Depository Trust Company through its Deposit and Withdrawal at Custodian System or by such other means of delivery as may be mutually agreed upon by the parties hereto which in all cases shall be freely tradable, transferable, registered shares in good deliverable form. On each Settlement Date, the Agent will deliver the related Net Proceeds in same day funds to an account designated by the Company on, or prior to, the Settlement Date. The Company agrees that if the Company, or its transfer agent (if applicable), defaults in its obligation to deliver Placement Shares on a Settlement Date through no fault of the Agent, then in addition to and in no way limiting the rights and obligations set forth in Section 11(a) hereto, it will (i) hold the Agent harmless against any loss, claim, damage, or reasonable, documented expense (including reasonable and documented legal fees and expenses), as incurred, arising out of or in connection with such default by the Company or its transfer agent (if applicable) and (ii) pay to the Agent (without duplication) any commission, discount, or other compensation to which it would otherwise have been entitled absent such default.

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

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

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

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

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

d. Financial Information. The consolidated financial statements of the Company included or incorporated by reference in the Registration Statement and the Prospectus, together with the related notes and schedules, present fairly, in all material respects, the consolidated financial position of the Company and the Subsidiaries (as defined below) as of the dates indicated and the consolidated results of operations, cash flows and changes in stockholders' equity of the Company and the Subsidiaries for the periods specified (subject, in the case of unaudited statements, to normal year-end audit adjustments which will not be material, either individually or in the aggregate) and have been prepared in compliance with the published requirements of the Securities Act and Exchange Act, as applicable, and in conformity with generally accepted accounting principles in the United States ("GAAP") applied on a consistent basis (except (i) for such adjustments to accounting standards and practices as are noted therein and (ii) in the case of unaudited interim financial statements, to the extent that they may not include footnotes or may be condensed or summary statements) during the periods involved; the other financial and statistical data with respect to the Company and the Subsidiaries contained or incorporated by reference in the Registration Statement and the Prospectus, are accurately and fairly presented and prepared on a basis consistent with the financial statements and books and records of the Company; there are no financial statements (historical or pro forma) that are required to be included or incorporated by reference in the Registration Statement, or the Prospectus that are not included or incorporated by reference as required; the Company and the Subsidiaries do not have any material liabilities or obligations, direct or contingent (including any off balance sheet obligations), not described in the Registration Statement, and the Prospectus which are required to be described in the Registration Statement or Prospectus; and all disclosures contained or incorporated by reference in the Registration Statement and the Prospectus regarding "non-GAAP financial measures" (as such term is defined by the rules and regulations of the Commission), if any, comply in all material respects with Regulation G of the Exchange Act and Item 10 of Regulation S-K under the Securities Act, to the extent applicable.

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

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

g. Subsidiaries. The Company owns directly or indirectly, all of the equity interests of the Subsidiaries free and clear of any lien, charge, security interest, encumbrance, right of first refusal or other restriction, and all the equity interests of the Subsidiaries are validly issued and are fully paid, nonassessable and free of preemptive and similar rights. The Company does not own or control, directly or indirectly, any corporation, association or other entity other than the subsidiaries listed in Exhibit 21.1 to the Company's Annual Report on Form 10-K for the most recently ended fiscal year and other than (i) those subsidiaries not required to be listed on Exhibit 21.1 by Item 601 of Regulation S-K under the Exchange Act and (ii) those subsidiaries formed since the last day of the most recently ended fiscal year.

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

i. No Material Adverse Effect. Since the date of the most recent financial statements of the Company included or incorporated by reference in the Registration Statement and Prospectus, there has not been (i) any Material Adverse Effect, or any development that would result in a Material Adverse Effect, (ii) any transaction which is material to the Company and the Subsidiaries taken as a whole, (iii) any obligation or liability, direct or contingent (including any off-balance sheet obligations), incurred by the Company or the Subsidiaries, which is material to the Company and the Subsidiaries taken as a whole, (iv) any material change in the capital stock (other than (A) the grant of additional options under the Company's existing stock option plans, (B) changes in the number of outstanding Common Stock of the Company due to the issuance of shares upon the exercise or conversion of securities exercisable for, or convertible into, Common Stock outstanding on the date hereof, (C) as a result of the issuance of Placement Shares, (D) any repurchases of capital stock of the Company, (E) as described in a Form 8-K, a proxy statement filed on Schedule 14A or a Registration Statement on Form S-4, or (F) otherwise publicly announced) or outstanding long-term indebtedness of the Company or any of its Subsidiaries or (v) any dividend or distribution of any kind declared, paid or made on the capital stock of the Company or any Subsidiary, other than in each case above in the ordinary course of business or as otherwise disclosed in the Registration Statement or Prospectus (including any document incorporated by reference therein).

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

k. S-3 Eligibility. At the time the Registration Statement was or will be declared effective, and at the time the Company's most recent Annual Report on Form 10-K was filed with the Commission, the Company met or will meet the then applicable requirements for the use of Form S-3 under the Securities Act, including, but not limited to, General Instruction I.B.1 of Form S-3, if applicable. As of the close of trading on the Exchange on June 11, 2019, the aggregate market value of the outstanding voting and non-voting common equity (as defined in Rule 405) of the Company held by persons other than affiliates of the Company (pursuant to Rule 144 of the Securities Act, those that directly, or indirectly through one or more intermediaries, control, or are controlled by, or are under common control with, the Company) (the "Non-Affiliate Shares"), was approximately \$83 million (calculated by multiplying (x) the price at which the common equity of the Company was last sold on the Exchange on May 7, 2019 times (y) the number of Non-Affiliate Shares).

l. Authorization; Enforceability. The Company has full legal right, power and authority to enter into this Agreement and perform the transactions contemplated hereby. This Agreement has been duly authorized, executed and delivered by the Company and is a legal, valid and binding agreement of the Company enforceable against the Company in accordance with its terms, except to the extent that (i) enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' rights generally and by general equitable principles and (ii) the indemnification and contribution provisions of Section 11 hereof may be limited by federal or state securities laws and public policy considerations in respect thereof.

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

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

o. No Preferential Rights. (i) No person, as such term is defined in Rule 1-02 of Regulation S-X promulgated under the Securities Act (each, a “Person”), has the right, contractual or otherwise, to cause the Company to issue or sell to such Person any Common Stock or shares of any other capital stock or other securities of the Company (other than upon the exercise of options or warrants to purchase Common Stock or upon the exercise of options that may be granted from time to time under the Company’s stock option plan), (ii) no Person has any preemptive rights, rights of first refusal, or any other rights (whether pursuant to a “poison pill” provision or otherwise) to purchase any Common Stock or shares of any other capital stock or other securities of the Company from the Company which have not been duly waived with respect to the offering contemplated hereby, (iii) no Person has the right to act as an underwriter or as a financial advisor to the Company in connection with the offer and sale of the Common Stock, and (iv) no Person has the right, contractual or otherwise, to require the Company to register under the Securities Act any Common Stock or shares of any other capital stock or other securities of the Company, or to include any such shares or other securities in the Registration Statement or the offering contemplated thereby, whether as a result of the filing or effectiveness of the Registration Statement or the sale of the Placement Shares as contemplated thereby or otherwise, except in each case for such rights as have been waived on or prior to the date hereof.

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

q. Enforceability of Agreements. All agreements between the Company and third parties expressly referenced in the Prospectus, other than such agreements that have expired by their terms or whose termination is disclosed in documents filed by the Company on EDGAR, are legal, valid and binding obligations of the Company and, to the Company’s knowledge, enforceable in accordance with their respective terms, except to the extent that (i) enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors’ rights generally and by general equitable principles and (ii) the indemnification provisions of certain agreements may be limited by federal or state securities laws or public policy considerations in respect thereof, and except for any unenforceability that, individually or in the aggregate, would not have a Material Adverse Effect.

r. No Litigation. There are no legal, governmental or regulatory actions, suits or proceedings pending, nor, to the Company's knowledge, any legal, governmental or regulatory investigations, including any proceeding before the United States Food and Drug Administration of the U.S. Department of Health and Human Services (the "FDA") or comparable federal, state, local or foreign governmental authorities (it being understood that the interaction between the Company and the FDA and such comparable governmental authorities relating to the clinical development and product approval process shall not be deemed proceedings for purposes of this representation), to which the Company or a Subsidiary is a party or to which any property of the Company or any Subsidiary is the subject that, individually or in the aggregate, if determined adversely to the Company or any Subsidiary, would have a Material Adverse Effect or materially and adversely affect the ability of the Company to perform its obligations under this Agreement; to the Company's knowledge, no such actions, suits or proceedings are threatened or contemplated by any governmental or regulatory authority or threatened by others that, individually or in the aggregate, if determined adversely to the Company or any Subsidiary, would have a Material Adverse Effect; and there are no current or pending legal, governmental or regulatory actions, suits, proceedings or, to the Company's knowledge, investigations that are required under the Securities Act to be described in the Prospectus that are not described in the Prospectus (including any Incorporated Document). The Company is in compliance with all applicable federal, state, local and foreign laws, regulations, orders and decrees governing its business as enforced by the FDA, or any other federal, state or foreign agencies or bodies engaged in the regulation of medical devices, except where noncompliance would not, singularly or in the aggregate, reasonably be expected to have a Material Adverse Effect. All preclinical and clinical studies conducted by or on behalf of the Company to support clearance for commercialization of the Company's products have been conducted by the Company, or to the Company's knowledge by third parties, in compliance with all applicable federal, state or foreign laws, rules, orders and regulations, except for such failure or failures to be in compliance as would not reasonably be expected to have, singularly or in the aggregate, a Material Adverse Effect.

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

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

u. Certain Market Activities. Neither the Company, nor any Subsidiary, nor, to the knowledge of the Company, any of their respective directors, officers or controlling persons has taken, directly or indirectly, any action designed, or that has constituted or would cause or result in, under the Exchange Act or otherwise, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Placement Shares.

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

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

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

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

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

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

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

cc. Clinical Studies. The animal and other preclinical studies and clinical trials conducted by the Company or on behalf of the Company were, and, if still pending are, to the Company's knowledge, being conducted in all material respects in compliance with all Applicable Laws and in accordance with experimental protocols, procedures and controls generally used by qualified experts in the preclinical study and clinical trials of new drugs and biologics as applied to comparable products to those being developed by the Company; the descriptions of the results of such preclinical studies and clinical trials contained in the Registration Statement and the Prospectus are accurate and complete in all material respects, and, except as set forth in the Registration Statement and the Prospectus, the Company has no knowledge of any other clinical trials or preclinical studies, the results of which reasonably call into question the clinical trial or preclinical study results described or referred to in the Registration Statement and the Prospectus when viewed in the context in which such results are described; and the Company has not received any written notices or correspondence from the FDA, the EMA, or any other domestic or foreign governmental agency requiring the termination, suspension or modification of any preclinical studies or clinical trials conducted by or on behalf of the Company that are described in the Registration Statement and the Prospectus or the results of which are referred to in the Registration Statement and the Prospectus. For the avoidance of doubt, the Company makes no representation or warranty that the results of any studies, tests or preclinical or clinical trials conducted by or on behalf of the Company will be sufficient to obtain governmental approval from the FDA or any foreign, state or local governmental body exercising comparable authority.

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

ee. Disclosure Controls. The Company maintains a system of internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in accordance with management's general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain asset accountability; (iii) access to assets is permitted only in accordance with management's general or specific authorization; and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. The Company is not aware of any material weaknesses in its internal control over financial reporting (other than as set forth in the Registration Statement or the Prospectus). Since the date of the latest audited financial statements of the Company included in the Prospectus, there has been no change in the Company's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting (other than as set forth in the Registration Statement or the Prospectus). The Company has established disclosure controls and procedures (as defined in Exchange Act Rules 13a-15 and 15d-15) that comply with the requirements of the Exchange Act. The Company's certifying officers have evaluated the effectiveness of the Company's controls and procedures as of a date within 90 days prior to the filing date of the Form 10-K for the fiscal year most recently ended (such date, the "Evaluation Date"). The Company presented in its Form 10-K for the fiscal year most recently ended the conclusions of the certifying officers about the effectiveness of the disclosure controls and procedures based on their evaluations as of the most recent Evaluation Date, and the "disclosure controls and procedures" are effective.

ff. Sarbanes-Oxley Act. There is and has been no failure on the part of the Company or, to the knowledge of the Company, any of the Company's directors or officers, in their capacities as such, to comply in all material respects with any applicable provisions of the Sarbanes-Oxley Act and the rules and regulations promulgated thereunder. Each of the principal executive officer and the principal financial officer of the Company (or each former principal executive officer of the Company and each former principal financial officer of the Company as applicable) has made all certifications required by Sections 302 and 906 of the Sarbanes-Oxley Act with respect to all reports, schedules, forms, statements and other documents required to be filed by it or furnished by it to the Commission during the past 12 months. For purposes of the preceding sentence, "principal executive officer" and "principal financial officer" shall have the meanings given to such terms in the Exchange Act Rules 13a-15 and 15d-15.

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

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

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

jj. Operations. The operations of the Company and the Subsidiaries are and have been conducted at all times in compliance with applicable financial record keeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all jurisdictions to which the Company or the Subsidiaries are subject, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency having jurisdiction over the Company (collectively, the “Money Laundering Laws”), except where the failure to be in such compliance would not result in a Material Adverse Effect; and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any Subsidiary with respect to the Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

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

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

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

nn. Forward-Looking Statements. No forward-looking statement (within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act) (a “Forward-Looking Statement”) contained in the Registration Statement and the Prospectus has been made or reaffirmed without a reasonable basis or has been disclosed other than in good faith.

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

pp. Insurance. The Company and the Subsidiaries carry, or are covered by, insurance in such amounts and covering such risks as the Company and the Subsidiaries reasonably believe are adequate for the conduct of their business.

qq. No Improper Practices. (i) Neither the Company nor, to the Company’s knowledge, the Subsidiaries, nor to the Company’s knowledge, any of their respective executive officers has, in the past five years, made any unlawful contributions to any candidate for any political office (or failed fully to disclose any contribution in violation of law) or made any contribution or other payment to any official of, or candidate for, any federal, state, municipal, or foreign office or other person charged with similar public or quasi-public duty in violation of any law or of the character required to be disclosed in the Prospectus; (ii) no relationship, direct or indirect, exists between or among the Company or, to the Company’s knowledge, the Subsidiaries or any affiliate of any of them, on the one hand, and the directors, officers and stockholders of the Company or, to the Company’s knowledge, the Subsidiaries, on the other hand, that is required by the Securities Act to be described in the Registration Statement and the Prospectus that is not so described; (iii) no relationship, direct or indirect, exists between or among the Company or the Subsidiaries or any affiliate of them, on the one hand, and the directors, officers, stockholders or directors of the Company or, to the Company’s knowledge, the Subsidiaries, on the other hand, that is required by the rules of FINRA to be described in the Registration Statement and the Prospectus that is not so described; (iv) there are no material outstanding loans or advances or material guarantees of indebtedness by the Company or, to the Company’s knowledge, the Subsidiaries to or for the benefit of any of their respective officers or directors or any of the members of the families of any of them; and (v) the Company has not offered, or caused any placement agent to offer, Common Stock to any person with the intent to influence unlawfully (A) a customer or supplier of the Company or the Subsidiaries to alter the customer’s or supplier’s level or type of business with the Company or the Subsidiaries or (B) a trade journalist or publication to write or publish favorable information about the Company or the Subsidiaries or any of their respective products or services, and, (vi) neither the Company nor the Subsidiaries nor, to the Company’s knowledge, any employee or agent of the Company or the Subsidiaries has made any payment of funds of the Company or the Subsidiaries or received or retained any funds in violation of any law, rule or regulation (including, without limitation, the Foreign Corrupt Practices Act of 1977), which payment, receipt or retention of funds is of a character required to be disclosed in the Registration Statement or the Prospectus.

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

ss. No Misstatement or Omission in an Issuer Free Writing Prospectus. Each Issuer Free Writing Prospectus, as of its issue date and as of each Applicable Time (as defined in Section 25 below), did not, does not and will not, through the completion of the Placement or Placements for which such Issuer Free Writing Prospectus is issued, include any information that conflicted, conflicts or will conflict with the information contained in the Registration Statement or the Prospectus, including any incorporated document deemed to be a part thereof that has not been superseded or modified. The foregoing sentence does not apply to statements in or omissions from any Issuer Free Writing Prospectus based upon and in conformity with written information furnished to the Company by the Agent specifically for use therein.

tt. No Conflicts. Neither the execution of this Agreement, nor the issuance, offering or sale of the Placement Shares, nor the consummation of any of the transactions contemplated herein and therein, nor the compliance by the Company with the terms and provisions hereof and thereof will conflict with, or will result in a breach of, any of the terms and provisions of, or has constituted or will constitute a default under, or has resulted in or will result in the creation or imposition of any lien, charge or encumbrance upon any property or assets of the Company pursuant to the terms of any contract or other agreement to which the Company may be bound or to which any of the property or assets of the Company is subject, except (i) such conflicts, breaches or defaults as may have been waived and (ii) such conflicts, breaches and defaults that would not have a Material Adverse Effect; nor will such action result (x) in any violation of the provisions of the organizational or governing documents of the Company, or (y) in any material violation of the provisions of any statute or any order, rule or regulation applicable to the Company or of any court or of any federal, state or other regulatory authority or other government body having jurisdiction over the Company, except where such violation would not have a Material Adverse Effect.

uu. OFAC.

(i) Neither the Company nor any Subsidiary (collectively, the “Entity”) nor, to the Company’s knowledge, any director, officer, employee, agent, affiliate or representative of the Entity, is a government, individual, or entity (in this paragraph (uu), “Person”) that is, or is owned or controlled by a Person that is:

(a) the subject of any sanctions administered or enforced by the U.S. Department of Treasury’s Office of Foreign Assets Control (“OFAC”), the United Nations Security Council (“UNSC”), the European Union (“EU”), Her Majesty’s Treasury (“HMT”), or other relevant sanctions authority (collectively, “Sanctions”), nor

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

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

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

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

(iii) The Entity represents and covenants that, except as detailed in the Registration Statement and the Prospectus, for the past 5 years, it has not knowingly engaged in and is not now knowingly engaged in any dealing or transactions with any Person, or in any country or territory, that at the time of the dealing or transaction is or was the subject of Sanctions.

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

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

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

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

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

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

d. Listing of Placement Shares. During the Prospectus Delivery Period, the Company will use its commercially reasonable efforts to cause the Placement Shares to be listed on the Exchange.

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

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

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

h. Notice of Other Sales. Without the prior written consent of the Agent, the Company will not, directly or indirectly, offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any Common Stock (other than the Placement Shares offered pursuant to this Agreement) or securities convertible into or exchangeable for Common Stock, warrants or any rights to purchase or acquire, Common Stock during the period beginning on the date on which any Placement Notice is delivered to the Agent hereunder and ending on the third (3rd) Trading Day immediately following the final Settlement Date with respect to Placement Shares sold pursuant to such Placement Notice (or, if the Placement Notice has been terminated or suspended prior to the sale of all Placement Shares covered by a Placement Notice, ending on the date of such suspension or termination); and will not directly or indirectly engage in any other "at the market" or continuous equity transaction offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any Common Stock (other than the Placement Shares offered pursuant to this Agreement) or securities convertible into or exchangeable for Common Stock, warrants or any rights to purchase or acquire, Common Stock prior to the termination of this Agreement; *provided, however*, that such restrictions will not apply in connection with the Company's issuance or sale of (i) Common Stock, options to purchase Common Stock or Common Stock issuable upon the exercise of options, pursuant to any stock option, or benefits plan, stock ownership plan or dividend reinvestment plan (but not Common Stock subject to a waiver to exceed plan limits in its dividend reinvestment plan) of the Company whether now in effect or hereafter implemented; (ii) Common Stock issuable upon conversion of securities or the exercise of warrants, options or other rights in effect or outstanding, and disclosed in filings by the Company available on EDGAR or otherwise in writing to the Agent, (iii) Common Stock, or securities convertible into or exercisable for Common Stock, offered and sold in a privately negotiated transaction to vendors, customers, strategic partners or potential strategic partners or other investors conducted in a manner so as not to be integrated with the offering of Common Stock hereby and (iv) Common Stock in connection with any acquisition, strategic investment or other similar transaction (including any joint venture, strategic alliance or partnership).

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

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

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

l. Representation Dates; Certificate. Each time during the term of this Agreement that the Company:

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

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

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

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

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

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

m. Legal Opinion. On or prior to the date of the first Placement Notice given hereunder the Company shall cause to be furnished to the Agent a written opinion and a negative assurance letter of Ellenoff Grossman & Schole LLP (“Company Counsel”), or other counsel reasonably satisfactory to the Agent, each in form and substance reasonably satisfactory to the Agent. Thereafter, within five (5) Trading Days of each Representation Date with respect to which the Company is obligated to deliver a certificate in the form attached hereto as Exhibit 7(l) for which no waiver is applicable, the Company shall cause to be furnished to the Agent a negative assurance letter of Company Counsel in form and substance reasonably satisfactory to the Agent; provided that, in lieu of such negative assurance for subsequent periodic filings under the Exchange Act, counsel may furnish the Agent with a letter (a “Reliance Letter”) to the effect that the Agent may rely on the negative assurance letter previously delivered under this Section 7(m) to the same extent as if it were dated the date of such letter (except that statements in such prior letter shall be deemed to relate to the Registration Statement and the Prospectus as amended or supplemented as of the date of the Reliance Letter).

n. Comfort Letter. On or prior to the date of the first Placement Notice given hereunder and within five (5) Trading Days after each subsequent Representation Date, other than pursuant to Section 7(l)(iii), the Company shall cause its independent accountants to furnish the Agent letters (the "Comfort Letters"), dated the date the Comfort Letter is delivered, which shall meet the requirements set forth in this Section 7(n). The Comfort Letter from the Company's independent accountants shall be in a form and substance reasonably satisfactory to the Agent, (i) confirming that they are an independent public accounting firm within the meaning of the Securities Act and the Public Company Accounting Oversight Board (the "PCAOB"), (ii) stating, as of such date, the conclusions and findings of such firm with respect to the financial information and other matters ordinarily covered by accountants' "comfort letters" to underwriters in connection with registered public offerings (the first such letter, the "Initial Comfort Letter") and (iii) updating the Initial Comfort Letter with any information that would have been included in the Initial Comfort Letter had it been given on such date and modified as necessary to relate to the Registration Statement and the Prospectus, as amended and supplemented to the date of such letter.

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

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

q. No Offer to Sell. Other than an Issuer Free Writing Prospectus approved in advance by the Company and the Agent in its capacity as agent hereunder pursuant to Section 23, neither of the Agent nor the Company (including its agents and representatives, other than the Agent in its capacity as such) will make, use, prepare, authorize, approve or refer to any written communication (as defined in Rule 405), required to be filed with the Commission, that constitutes an offer to sell or solicitation of an offer to buy Placement Shares hereunder.

r. Sarbanes-Oxley Act. The Company will maintain and keep accurate books and records reflecting its assets and maintain internal accounting controls in a manner designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP and including those policies and procedures that (i) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the Company, (ii) provide reasonable assurance that transactions are recorded as necessary to permit the preparation of the Company's consolidated financial statements in accordance with GAAP, (iii) that receipts and expenditures of the Company are being made only in accordance with management's and the Company's directors' authorization, and (iv) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on its financial statements. The Company will maintain disclosure controls and procedures that comply with the requirements of the Exchange Act.

8. Representations and Covenants of the Agent.

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

9. Payment of Expenses. The Company will pay all expenses incident to the performance of its obligations under this Agreement, including (i) the preparation, filing, including any fees required by the Commission, and printing of the Registration Statement (including financial statements and exhibits) as originally filed and of each amendment and supplement thereto and each Free Writing Prospectus, in such number as the Agent shall deem reasonably necessary, (ii) the printing and delivery to the Agent of this Agreement and such other documents as may be required in connection with the offering, purchase, sale, issuance or delivery of the Placement Shares, (iii) the preparation, issuance and delivery of the certificates, if any, for the Placement Shares to the Agent, including any stock or other transfer taxes and any capital duties, stamp duties or other duties or taxes payable upon the sale, issuance or delivery of the Placement Shares to the Agent, (iv) the fees and disbursements of the counsel, accountants and other advisors to the Company, (v) the reasonable and documented out-of-pocket fees and disbursements of counsel to the Agent up to \$25,000; (vi) the fees and expenses of the transfer agent and registrar for the Common Stock, (vii) the filing fees incident to any review by FINRA of the terms of the sale of the Placement Shares, and (viii) the fees and expenses incurred in connection with the listing of the Placement Shares on the Exchange.

10. Conditions to the Agent's Obligations. The obligations of the Agent hereunder with respect to a Placement will be subject to the continuing accuracy and completeness of the representations and warranties made by the Company herein (other than those representations and warranties made as of a specified date or time), to the due performance in all material respects by the Company of its obligations hereunder, to the completion by the Agent of a due diligence review satisfactory to it in its reasonable judgment, and to the continuing reasonable satisfaction (or waiver by the Agent in its sole discretion) of the following additional conditions:

a. Registration Statement Effective. The Registration Statement shall remain effective and shall be available for the sale of all Placement Shares contemplated to be issued by any Placement Notice.

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

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

d. Material Changes. Except as contemplated in the Prospectus, or disclosed in the Company's reports filed with the Commission, there shall not have been any Material Adverse Effect, or any development that would cause a Material Adverse Effect,.

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

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

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

h. Secretary's Certificate. On or prior to the first Representation Date, the Agent shall have received a certificate, signed on behalf of the Company by its corporate Secretary, in form and substance satisfactory to the Agent and its counsel.

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

j. Other Materials. On each date on which the Company is required to deliver a certificate pursuant to Section 7(l), the Company shall have furnished to the Agent such appropriate further information, certificates and documents as the Agent may reasonably request and which are usually and customarily furnished by an issuer of securities in connection with a securities offering of the type contemplated hereby. All such opinions, certificates, letters and other documents will be in compliance with the provisions hereof.

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

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

m. No Termination Event. There shall not have occurred any event that would permit the Agent to terminate this Agreement pursuant to Section 13(a).

11. Indemnification and Contribution.

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

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

(ii) against any and all loss, liability, claim, damage and expense whatsoever, as incurred, joint or several, to the extent of the aggregate amount paid in settlement of any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or of any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission; provided that (subject to Section 11(d) below) any such settlement is effected with the written consent of the Company, which consent shall not unreasonably be delayed or withheld; and

(iii) against any and all expense whatsoever, as incurred (including the reasonable and documented out-of-pocket fees and disbursements of counsel), reasonably incurred in investigating, preparing or defending against any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission, to the extent that any such expense is not paid under (i) or (ii) above, *provided, however*, that this indemnity agreement shall not apply to any loss, liability, claim, damage or expense to the extent arising out of any untrue statement or omission or alleged untrue statement or omission made solely in reliance upon and in conformity with written information furnished to the Company by the Agent expressly for use in the Registration Statement (or any amendment thereto), or in any related Issuer Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto).

(b) Indemnification by the Agent. The Agent agrees to indemnify and hold harmless the Company and its directors and officers, and each person, if any, who (i) controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act or (ii) is controlled by or is under common control with the Company against any and all loss, liability, claim, damage and expense described in the indemnity contained in Section 11(a), as incurred, but only with respect to untrue statements or omissions, or alleged untrue statements or omissions, made in the Registration Statement (or any amendments thereto) or in any related Issuer Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto) in reliance upon and in conformity with information relating to the Agent and furnished to the Company in writing by the Agent expressly for use therein.

(c) Procedure. Any party that proposes to assert the right to be indemnified under this Section 11 will, promptly after receipt of notice of commencement of any action against such party in respect of which a claim is to be made against an indemnifying party or parties under this Section 11, notify each such indemnifying party of the commencement of such action, enclosing a copy of all papers served, but the omission so to notify such indemnifying party will not relieve the indemnifying party from (i) any liability that it might have to any indemnified party otherwise than under this Section 11 and (ii) any liability that it may have to any indemnified party under the foregoing provisions of this Section 11 unless, and only to the extent that, such omission results in the forfeiture of substantive rights or defenses by the indemnifying party. If any such action is brought against any indemnified party and it notifies the indemnifying party of its commencement, the indemnifying party will be entitled to participate in and, to the extent that it elects by delivering written notice to the indemnified party promptly after receiving notice of the commencement of the action from the indemnified party, jointly with any other indemnifying party similarly notified, to assume the defense of the action, with counsel reasonably satisfactory to the indemnified party, and after notice from the indemnifying party to the indemnified party of its election to assume the defense, the indemnifying party will not be liable to the indemnified party for any legal or other expenses except as provided below and except for the reasonable costs of investigation subsequently incurred by the indemnified party in connection with the defense. The indemnified party will have the right to employ its own counsel in any such action, but the fees, expenses and other charges of such counsel will be at the expense of such indemnified party unless (1) the employment of counsel by the indemnified party has been authorized in writing by the indemnifying party, (2) the indemnified party has reasonably concluded (based on advice of counsel) that there may be legal defenses available to it or other indemnified parties that are different from or in addition to those available to the indemnifying party, (3) a conflict or potential conflict of interest exists (based on advice of counsel to the indemnified party) between the indemnified party and the indemnifying party (in which case the indemnifying party will not have the right to direct the defense of such action on behalf of the indemnified party) or (4) the indemnifying party has not in fact employed counsel to assume the defense of such action within a reasonable time after receiving notice of the commencement of the action, in each of which cases the reasonable and documented out-of-pocket fees, disbursements and other charges of counsel will be at the expense of the indemnifying party or parties. It is understood that the indemnifying party or parties shall not, in connection with any proceeding or related proceedings in the same jurisdiction, be liable for the reasonable and documented out-of-pocket fees, disbursements and other charges of more than one separate firm admitted to practice in such jurisdiction at any one time for all such indemnified party or parties. All such reasonable and documented out-of-pocket fees, disbursements and other charges will be reimbursed by the indemnifying party promptly after the indemnifying party receives a written invoice relating to fees, disbursements and other charges in reasonable detail. An indemnifying party will not, in any event, be liable for any settlement of any action or claim effected without its written consent. No indemnifying party shall, without the prior written consent of each indemnified party, settle or compromise or consent to the entry of any judgment in any pending or threatened claim, action or proceeding relating to the matters contemplated by this Section 11 (whether or not any indemnified party is a party thereto), unless such settlement, compromise or consent (1) includes an unconditional release of each indemnified party from all liability arising out of such litigation, investigation, proceeding or claim and (2) does not include a statement as to or an admission of fault, culpability or a failure to act by or on behalf of any indemnified party.

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

12. Representations and Agreements to Survive Delivery. The indemnity and contribution agreements contained in Section 11 of this Agreement and all representations and warranties of the Company herein or in certificates delivered pursuant hereto shall survive, as of their respective dates, regardless of (i) any investigation made by or on behalf of the Agent, any controlling persons, or the Company (or any of their respective officers, directors or controlling persons), (ii) delivery and acceptance of the Placement Shares and payment therefor or (iii) any termination of this Agreement.

13. Termination.

a. The Agent may terminate this Agreement, by notice to the Company, as hereinafter specified at any time (1) if there has been, since the time of execution of this Agreement or since the date as of which information is given in the Prospectus, any Material Adverse Effect, or any development that would have a Material Adverse Effect that, in the sole judgment of the Agent, is material and adverse and makes it impractical or inadvisable to market the Placement Shares or to enforce contracts for the sale of the Placement Shares, (2) if there has occurred any material adverse change in the financial markets in the United States or the international financial markets, any outbreak of hostilities or escalation thereof or other calamity or crisis or any change or development involving a prospective change in national or international political, financial or economic conditions, in each case the effect of which is such as to make it, in the judgment of the Agent, impracticable or inadvisable to market the Placement Shares or to enforce contracts for the sale of the Placement Shares, (3) if trading in the Common Stock has been suspended or limited by the Commission or the Exchange, or if trading generally on the Exchange has been suspended or limited, or minimum prices for trading have been fixed on the Exchange, (4) if any suspension of trading of any securities of the Company on any exchange or in the over-the-counter market shall have occurred and be continuing, (5) if a major disruption of securities settlements or clearance services in the United States shall have occurred and be continuing, or (6) if a banking moratorium has been declared by either U.S. Federal or New York authorities. Any such termination shall be without liability of any party to any other party except that the provisions of Section 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination. If the Agent elects to terminate this Agreement as provided in this Section 13(a), the Agent shall provide the required notice as specified in Section 14 (Notices).

b. The Company shall have the right, by giving five (5) days' notice as hereinafter specified to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination.

c. The Agent shall have the right, by giving five (5) days' notice as hereinafter specified to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination.

d. Unless earlier terminated pursuant to this Section 13, this Agreement shall automatically terminate upon the issuance and sale of all of the Placement Shares through the Agent on the terms and subject to the conditions set forth herein except that the provisions of Section 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination.

e. This Agreement shall remain in full force and effect unless terminated pursuant to Sections 13(a), (b), (c), or (d) above or otherwise by mutual agreement of the parties; *provided, however*, that any such termination by mutual agreement shall in all cases be deemed to provide that Section 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) shall remain in full force and effect. Upon termination of this Agreement, the Company shall not have any liability to the Agent for any discount, commission or other compensation with respect to any Placement Shares not otherwise sold by the Agent under this Agreement.

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

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

B. Riley FBR, Inc.
299 Park Avenue, 21st Floor
New York, NY, 10171
Attention: General Counsel
Telephone: (212) 457-9947
Email: atmdesk@brileyfbr.com

with a copy to:

Duane Morris LLP
1540 Broadway
New York, NY 10036
Attention: James T. Seery
Telephone: (973) 424-2088
Email: jtseery@duanemorris.com

and if to the Company, shall be delivered to:

Anixa Biosciences, Inc
3150 Almaden Expressway, Suite 250
San Jose, CA 95118
Attention: Dr. Amit Kumar
Telephone: (408) 708-9808
Email: ak@anixa.com

with a copy to:

Ellenoff Grossman & Schole LLP
1345 Avenue of the Americas
New York, New York 10105-0302
Attention: David Selengut
Telephone: (212) 370-1300
Email: selengut@egsllp.com

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

15. Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the Company and the Agent and their respective successors and the affiliates, controlling persons, officers and directors referred to in Section 11 hereof. References to any of the parties contained in this Agreement shall be deemed to include the successors and permitted assigns of such party. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and permitted assigns any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement. Neither the Company nor the Agent may assign its rights or obligations under this Agreement without the prior written consent of the other party.

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

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

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

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

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

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

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

23. Absence of Fiduciary Relationship. The Company acknowledges and agrees that:

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

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

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

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

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

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

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

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

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

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

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

[Remainder of the page intentionally left blank]

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

Very truly yours,

ANIXA BIOSCIENCES, INC.

By: _____
Name: Dr. Amit Kumar
Title: President and Chief Executive Officer

ACCEPTED as of the date first-above written:

B. RILEY FBR, INC.

By: _____
Name: Patrice McNicoll
Title: Co-Head of Investment Banking

SCHEDULE 1

FORM OF PLACEMENT NOTICE

From: Anixa Biosciences, Inc.
To: B. Riley FBR, Inc.
Attention: [•]
Subject: At Market Issuance--Placement Notice

Gentlemen:

Pursuant to the terms and subject to the conditions contained in the At Market Issuance Sales Agreement between Anixa Biosciences, Inc., a Delaware corporation (the "Company"), and B. Riley FBR, Inc. (the "Agent"), dated June [•], 2019, the Company hereby requests that the Agent sell up to [____] of the Company's Common Stock, par value \$0.01 per share, at a minimum market price of \$ _____ per share, during the time period beginning [month, day, time] and ending [month, day, time].

SCHEDULE 2

Compensation

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

SCHEDULE 3

Notice Parties

The Company

Dr. Amit Kumar ak@anixa.com

Michael J. Catelani mcatelani@anixa.com

The Agent

Matthew Feinberg mfeinberg@brileyfbr.com

Ryan Loforte rloforte@brileyfbr.com

Patrice McNicoll pmnicoll@brileyfbr.com

Keith Pompliano kpompliano@brileyfbr.com

with a copy to atmdesk@brileyfbr.com

EXHIBIT 7(I)

Form of Representation Date Certificate

_____, 20__

This Representation Date Certificate (this "Certificate") is executed and delivered in connection with Section 7(l) of the At Market Issuance Sales Agreement (the "Agreement"), dated June [•], 2019, and entered into between Anixa Biosciences, Inc. (the "Company") and B. Riley FBR, Inc. (the "Agent"). All capitalized terms used but not defined herein shall have the meanings given to such terms in the Agreement.

The undersigned, a duly appointed and authorized officer of the Company, having made reasonable inquiry to establish the accuracy of the statements below and having been authorized by the Company to execute this certificate on behalf of the Company hereby certifies as follows:

1. As of the date of this Certificate (i) the Registration Statement does not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein not misleading and (ii) neither the Registration Statement nor the Prospectus contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading and (iii) no event has occurred as a result of which it is necessary to amend or supplement the Prospectus in order to make the statements therein not untrue or misleading for this paragraph 1 to be true.

2. Each of the representations and warranties of the Company contained in the Agreement were, when originally made, and are, as of the date of this Certificate, true and correct in all material respects.

3. Except as waived by the Agent in writing, each of the covenants required to be performed by the Company in the Agreement on or prior to the date of the Agreement, this Representation Date, and each such other date prior to the date hereof as set forth in the Agreement, has been duly, timely and fully performed in all material respects and each condition required to be complied with by the Company on or prior to the date of the Agreement, this Representation Date, and each such other date prior to the date hereof as set forth in the Agreement has been duly, timely and fully complied with in all material respects.

4. Subsequent to the date of the most recent financial statements in the Prospectus, and except as described in the Prospectus, including Incorporated Documents, there has been no Material Adverse Effect.

5. No stop order suspending the effectiveness of the Registration Statement or of any part thereof has been issued, and, to our knowledge, no proceedings for that purpose have been instituted or are pending or threatened by any securities or other governmental authority (including, without limitation, the Commission).

6. No order suspending the effectiveness of the Registration Statement or the qualification or registration of the Placement Shares under the securities or Blue Sky laws of any

jurisdiction are in effect and no proceeding for such purpose is pending before, or threatened, to the Company's knowledge or in writing by, any securities or other governmental authority (including, without limitation, the Commission).

The undersigned has executed this Representation Date Certificate as of the date first written above.

Anixa Biosciences, Inc.

By: _____

Name: _____

Title: _____

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement on Form S-3 of Anixa Biosciences, Inc. (the “Company”) of our report dated January 11, 2019, relating to our audits of the Company’s consolidated financial statements as of October 31, 2018 and 2017, and for each of the years ended October 31, 2018 and 2017, included in the Company’s Annual Report on Form 10-K for the year ended October 31, 2018. We also consent to the reference to us under the heading “Experts” in this Registration Statement.

/s/ Haskell & White LLP
HASKELL & WHITE
LLP

Irvine, California
June 11, 2019