

(215) 702-8550

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

David I. Johnson
Chief Executive Officer
Alliqua BioMedical, Inc.
2150 Cabot Boulevard West
Langhorne, Pennsylvania 19047

(215) 702-8550

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

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

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

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

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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 filed pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box. "

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

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

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

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Amount to be registered(1)(2)	Proposed maximum offering price per security(2)	Proposed maximum aggregate offering price (2)	Amount of registration fee
Primary Offering				
Common Stock, \$0.001 par value per share(2)	—	—	—	—
Preferred stock, \$0.001 par value per share(2)	—	—	—	—
Debt securities(2)	—	—	—	—
Warrants(2)	—	—	—	—
Subscription Rights(2)	—	—	—	—
Units	—	—	—	—
Total for Primary Offering	—	—	\$ 100,000,000	\$ 12,880 (3)

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Secondary Offering

Common Stock, \$0.001 par value per share	6,602,702	\$ 5.07	\$ 33,475,699	\$ 4,312	
Common Stock underlying Warrants	1,264,095	\$ 5.07	\$ 6,408,962	\$ 825	
Total for Secondary Offering	7,866,797	\$ 5.07	\$ 39,884,661	\$ 5,137	(2)
Total Registration Fee	—	—	—	\$ 18,017	

(1) With regard to the securities included in the primary offering made hereby, there are being registered hereunder such indeterminate number of shares of common stock and preferred stock, such indeterminate number of debt securities, such indeterminate number of warrants to purchase common stock or preferred stock, and such indeterminate number of units as shall have an aggregate initial offering price not to exceed \$100,000,000, less the aggregate dollar amount of all securities previously sold hereunder. Any securities registered hereunder may be sold separately or as units with the other securities registered hereunder. The proposed maximum offering price per unit will be determined, from time to time, by the registrant in connection with the issuance by the registrant of the securities registered hereunder. The securities registered hereunder also include such indeterminate number of shares of common stock and preferred stock as may be issued upon conversion of or exchange for preferred stock that provide for conversion or exchange, upon exercise of warrants or pursuant to the antidilution provisions of any of such securities. In addition, pursuant to Rule 416 under the Securities Act, 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. In addition, with respect to the secondary offering, there are being registered hereunder 6,602,702 shares of common stock and 1,264,095 shares of common stock issuable upon exercise of warrants that, in each case, the selling shareholders may sell from time to time.

(2) With regard to the securities included in the primary offering made hereby, the proposed maximum offering price per security will be determined from time to time by the registrant in connection with, and at the time of, the issuance of the securities and is not specified as to each class of security pursuant to General Instruction II.D. of Form S-3, as amended. With regard to the securities included in the secondary offering made hereby, the offering price and registration fee are estimated pursuant to Rule 457(c) under the Securities Act of 1933 based upon the average high and low sale prices for the common stock of Alliqua BioMedical, Inc., on July 30, 2014, as reported by the Nasdaq Capital Market.

- (3) With regard to the securities included in the primary offering made hereby, calculated pursuant to Rule 457(o) under the Securities Act based on the proposed maximum aggregate offering price of all securities listed.

THE REGISTRANT HEREBY AMENDS THIS REGISTRATION STATEMENT ON SUCH DATE OR DATES AS MAY BE NECESSARY TO DELAY ITS EFFECTIVE DATE UNTIL THE REGISTRANT SHALL FILE A FURTHER AMENDMENT WHICH SPECIFICALLY STATES THAT THIS REGISTRATION STATEMENT SHALL THEREAFTER BECOME EFFECTIVE IN ACCORDANCE WITH SECTION 8(a) OF THE SECURITIES ACT OF 1933, AS AMENDED, OR UNTIL THE REGISTRATION STATEMENT SHALL BECOME EFFECTIVE ON SUCH DATE AS THE SECURITIES AND EXCHANGE COMMISSION, ACTING PURSUANT TO SAID SECTION 8(a), MAY DETERMINE.

TABLE OF CO-REGISTRANTS

Each of the following subsidiaries of Alliqua BioMedical, Inc. may become a guarantor of certain of the securities registered hereby and each such subsidiary is a co-registrant:

Exact Name as Specified	Jurisdiction of IRS Employer	
in Charter	Organization	Identification Number
AquaMed Technologies, Inc.	Delaware	26-4042544
Choice Therapeutics, Inc.	Delaware	20-5304676

The address, including zip code, of each co-registrant is 2150 Cabot Boulevard West, Langhorne, Pennsylvania 19047, and the telephone number, including area code, is (215) 702-8550. The name and address, including zip code, of the agent for service of process for each of the co-registrants is the same as for Alliqua BioMedical, Inc.

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

SUBJECT TO COMPLETION, DATED SEPTEMBER 8, 2014

PROSPECTUS

Alliqua BioMedical, Inc.

\$100,000,000

Common Stock

Preferred Stock

Debt Securities

Warrants

Subscription Rights

Units

6,602,702 Shares of Common Stock

1,264,095 Shares of Common Stock underlying Warrants

Offered by the Selling Shareholders

We may offer and sell from time to time, in one or more series or issuances and on terms that we will determine at the time of the offering, any combination of the securities described in this prospectus, up to an aggregate amount of \$100,000,000. In addition, the selling shareholders identified in this prospectus, or any of its transferees, donees, pledgees or other successors, may offer and sell from time to time up to 6,602,702 shares of our common stock and up

to 1,264,095 shares of our common stock underlying warrants. Unless otherwise provided in a prospectus supplement, we will not receive any proceeds from the sale of the shares by the selling shareholders. However, we will generate proceeds in the event of a cash exercise of the warrants by the selling shareholders. We intend to use those proceeds, if any, for general corporate purposes. We will pay the expenses of registering these shares. We and the selling shareholder may offer securities at the same time or in separate transactions.

Each time we sell securities hereunder, we will attach a supplement to this prospectus that contain the specific information about the terms of the offering, including the price at which we are offering the securities to the public. Any prospectus supplement may also add, update, or change information contained in this prospectus. You should carefully read this prospectus and the applicable prospectus supplement as well as the documents incorporated or deemed to be incorporated by reference in this prospectus before you purchase any of the securities offered hereby.

These securities may be offered and sold in the same offering or in separate offerings; to or through underwriters, dealers, and agents; or directly to purchasers. The names of any underwriters, dealers, or agents involved in the sale of our securities, their compensation and any over-allotment options held by them will be described in the applicable prospectus supplement. See "Plan of Distribution."

The shares of common stock to be offered and sold by the selling shareholders, or any of their respective transferees, donees, pledgees or other successors, are being registered to permit the sale of these shares from time to time, in amounts, at prices and on terms determined at the time of offering. The shares of common stock being sold by the selling shareholders may be sold through ordinary brokerage transactions, directly to market makers of our shares or through any other means described in the section of this prospectus entitled "Plan of Distribution."

Except in the case of offers and sales by the selling shareholders or any of their respective transferees, donees, pledges or other successors in circumstances described under "Plan of Distribution," this prospectus may not be used to offer or sell securities unless accompanied by a prospectus supplement.

Our common stock is listed on the Nasdaq Capital Market under the symbol "ALQA." On September 5, 2014, the last reported sale price of our common stock was \$5.19 per share. We recommend that you obtain current market quotations for our common stock prior to making an investment decision. We will provide information in any applicable prospectus supplement regarding any listing of securities other than shares of our common stock on any securities exchange.

As of September 4, 2014, the aggregate market value of our outstanding common stock held by non-affiliates, or the public float, was \$68,221,259 which was calculated based on 12,920,693 shares of our outstanding common stock held by non-affiliates and a price of \$5.28 per share, the last reported sale price for our common stock on September 4, 2014. We have not offered any securities pursuant to General Instruction I.B.6 of Form S-3 during the 12 calendar months prior to and including the date of this prospectus.

You should carefully read this prospectus, any prospectus supplement relating to any specific offering of securities, and all information incorporated by reference herein and therein.

Investing in our securities involves a high degree of risk. These risks are discussed in this prospectus under “Risk Factors” beginning on page 5 and in the documents incorporated by reference into this prospectus.

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 , 2014

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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 using a “shelf” registration process. Under this shelf process, we may, from time to time, sell any combination of the securities described in this prospectus in one or more offerings up to a total amount of \$100,000,000.

This prospectus provides you with a general description of the securities. Each time we offer securities, we will provide a prospectus supplement that will contain specific information about the terms of that offering. The prospectus supplement may also add to, update or change information contained in the prospectus and, accordingly, to the extent inconsistent, information in this prospectus is superseded by the information in the prospectus supplement.

The prospectus supplement to be attached to the front of this prospectus may describe, as applicable: the terms of the securities offered; the public offering price; the price paid for the securities; net proceeds; and the other specific terms related to the offering of the securities.

The selling shareholder also may use the shelf registration statement to sell up to an aggregate of 6,602,702 shares of our common stock and 1,264,095 shares of our common stock underlying warrants from time to time in the public market. Unless otherwise provided in a prospectus supplement, we will not receive any proceeds from the sale of the shares by the selling shareholders. However, we will generate proceeds in the event of a cash exercise of the warrants by the selling shareholders. The selling shareholder may deliver a supplement with this prospectus, if required, to update the information contained in this prospectus. The selling shareholder may sell its shares of common stock through any means described in the section entitled “Plan of Distribution” or in an accompanying prospectus supplement. As used herein, the term “selling shareholder” includes the selling shareholder and any of its transferees, donees, pledgees or other successors.

You should only rely on the information contained or incorporated by reference in this prospectus and any prospectus supplement or issuer free writing prospectus relating to a particular offering. No person has been authorized to give any information or make any representations in connection with this offering other than those contained or incorporated by reference in this prospectus, any accompanying prospectus supplement and any related issuer free writing prospectus in connection with the offering described herein and therein, and, if given or made, such information or representations must not be relied upon as having been authorized by us. Neither this prospectus nor any prospectus supplement nor any related issuer free writing prospectus shall constitute an offer to sell or a solicitation of an offer to buy offered securities in any jurisdiction in which it is unlawful for such person to make such an offering or solicitation. This prospectus does not contain all of the information included in the registration statement. For a more complete understanding of the offering of the securities, you should refer to the registration statement, including its exhibits.

You should read the entire prospectus and any prospectus supplement and any related issuer free writing prospectus, as well as the documents incorporated by reference into this prospectus or any prospectus supplement or any related issuer free writing prospectus, before making an investment decision. Neither the delivery of this prospectus or any prospectus supplement or any issuer free writing prospectus nor any sale made hereunder shall under any circumstances imply that the information contained or incorporated by reference herein or in any prospectus supplement or issuer free writing prospectus is correct as of any date subsequent to the date hereof or of such prospectus supplement or issuer free writing prospectus, as applicable. You should assume that the information appearing in this prospectus, any prospectus supplement or any document incorporated by reference is accurate only as of the date of the applicable documents, regardless of the time of delivery of this prospectus or any sale of securities. Our business, financial condition, results of operations and prospects may have changed since that date.

PROSPECTUS SUMMARY

The following summary highlights information contained elsewhere in this prospectus and the information included or incorporated by reference in this prospectus. It may not contain all the information that may be important to you. You should read this entire prospectus carefully, including the sections entitled “Risk Factors” before making an investment decision. In this prospectus, unless the context requires otherwise, all references to “we,” “our” and “us” refer to Alliqua BioMedical, Inc., a publicly traded Delaware corporation, and its direct and indirect subsidiaries.

Unless otherwise indicated, all information in this prospectus reflects a 1-for-43.75 reverse stock split of our common stock that occurred on November 18, 2013.

The Company

We develop, manufacture and market high water content, electron beam cross-linked, aqueous polymer hydrogels, or gels, used for wound care, medical diagnostics, transdermal drug delivery and cosmetics. We supply these gels primarily to the wound care and pain management segments of the healthcare industry. We believe that we are one of only two known manufacturers of these gels in the world. We specialize in custom gels by capitalizing on proprietary manufacturing technologies.

Our gels can be utilized as delivery mechanisms for medication to be delivered through the skin into the blood stream, known as transdermal delivery, or to be delivered between the layers of the skin, known as intradermal delivery. Active ingredients can be added to our gels for use in wound/burn dressings and to provide for the topical application of non-prescription drugs. Additionally, our gels can also be used as components in certain medical devices, skin care treatments, cosmetics and other commercial products.

Our products are manufactured using proprietary and non-proprietary mixing, coating and cross-linking technologies. Together, these technologies enable us to produce gels that can satisfy rigid tolerance specifications with respect to a wide range of physical characteristics (e.g., thickness, water content, adherence, absorption, vapor transmission, release rates) while maintaining product integrity. Additionally, we have the manufacturing ability to offer broad choices in selection of liners onto which the gels are coated. Consequently, our customers are able to determine tolerances in vapor transmission and active ingredient release rates while personalizing color and texture.

We operate through the following wholly-owned subsidiaries: AquaMed Technologies, Inc., HepaLife Biosystems, Inc., and Choice Therapeutics, Inc.

Recent Developments

On May 5, 2014, we acquired Choice Therapeutics, Inc. for an aggregate cash payment of approximately \$2,000,000 and 274,771 total shares of our common stock at a per share purchase price equal to \$7.29. In addition to the cash and common stock consideration, the acquisition agreement allows for contingent consideration, in aggregate up to \$5,000,000 in shares of common stock or cash, to be earned based upon revenues earned by the sale of existing Choice Therapeutics, Inc. products over the next three twelve month periods ended April 30, 2017. Choice Therapeutics, Inc. develops, manufactures and commercializes its TheraBond 3D® Antimicrobial Barrier Systems wound dressings, which keeps the wound moist and transfers excess fluid and exudate (cellular debris) away from the wound into an inexpensive, easily replaced outer dressing. TheraBond 3D® is used for faster and less painful healing on patients with venous leg ulcers, diabetic foot ulcers, burns and other wounds.

Corporate and Other Information

We are a Delaware corporation that was originally formed in 1997 under the name Zeta Corporation in Florida. On April 17, 2003, we changed our name to Hepalife Technologies, Inc., and on December 20, 2010, we changed our name to Alliqua, Inc. On June 6, 2014, pursuant to an Agreement and Plan of Merger, we merged with and into our wholly-owned Delaware subsidiary, Alliqua BioMedical, Inc. Our principal executive offices are located at 2150 Cabot Boulevard West, Langhorne, Pennsylvania 19047, our telephone number is (215) 702-8550, and our website is located at www.alliqua.com. Information on or accessed through our website is not incorporated into this prospectus and is not a part of this prospectus.

The Securities We May Offer

We may offer up to \$100,000,000 of common stock, preferred stock, debt securities, warrants, subscription rights or units in one or more offerings and in any combination. The selling shareholders may sell up to 6,602,702 shares of common stock and 1,264,095 shares of common stock underlying warrants. This prospectus provides you with a general description of the securities we may offer. Except in the case of offers and sales by the selling stockholders or any of their respective transferees, donees, pledges or other successors in circumstances described under “Plan of Distribution,” this prospectus may not be used to offer or sell securities unless accompanied by a prospectus supplement.

- our ability to obtain reimbursement from third party payers for our products;
- loss or retirement of key executives;
- adverse economic conditions or intense competition;
- loss of a key customer or supplier;
- entry of new competitors and products;
- adverse federal, state and local government regulation;
- technological obsolescence of our products;
- technical problems with our research and products;

- our ability to expand our business through strategic acquisitions;
- our ability to integrate acquisitions and related businesses;
- price increases for supplies and components; and
- inability to carry out research, development and commercialization plans.

These and other factors are more fully discussed elsewhere herein and in the documents incorporated by reference herein. These and other risks could cause actual results to differ materially from those implied by forward-looking statements herein and therein.

You should keep in mind that any forward-looking statement made by us herein and in the documents incorporated by reference herein, or elsewhere, speaks only as of the date on which we make it. New risks and uncertainties come up from time to time, and it is impossible for us to predict these events or how they may affect us. We have no obligation to update any forward-looking statements herein or therein after the date hereof or thereof, except as required by federal securities laws.

USE OF PROCEEDS

Unless we specify another use in the applicable prospectus supplement, we will use the net proceeds from the sale of the securities offered by us for general corporate purposes, which may include, among other things, debt repayment, working capital or capital expenditures.

We may also use such proceeds to fund acquisitions of businesses, technologies or product lines that complement our current business. We may set forth additional information on the use of net proceeds from the sale of the securities we offer under this prospectus in a prospectus supplement related to a specific offering.

Investors are cautioned, however, that expenditures may vary substantially from these uses. Investors will be relying on the judgment of our management, who will have broad discretion regarding the application of the proceeds of this offering. The amounts and timing of our actual expenditures will depend upon numerous factors, including the amount of cash generated by our operations, the amount of competition and other operational factors. We may find it necessary or advisable to use portions of the proceeds from this offering for other purposes.

From time to time, we evaluate these and other factors and we anticipate continuing to make such evaluations to determine if the existing allocation of resources, including the proceeds of sale of securities offered by us, is being optimized. Circumstances that may give rise to a change in the use of proceeds include:

- our ability to negotiate definitive agreement with acquisition candidates;
- the availability and terms of debt financing to fund a portion of the purchase price(s) for potential acquisitions;
- the need or desire on our part to accelerate, increase or eliminate existing initiatives due to, among other things, changing market;
- conditions and competitive developments; and
- the availability of other sources of cash including cash flow from operations and alternative financing arrangements, if any.

Pending other uses, we intend to invest the proceeds to us in investment-grade, interest-bearing securities such as money market funds, certificates of deposit, or direct or guaranteed obligations of the U.S. government, or hold as cash. We cannot predict whether the proceeds invested will yield a favorable, or any, return.

We will not receive any proceeds from the resale of shares of our common stock by the selling shareholders. However, certain shares of common stock offered by this prospectus by the selling shareholders are issuable upon the exercise of warrants. As such, if a selling shareholder exercises all or any portion of its warrants, we will receive the aggregate exercise price paid by such selling shareholder in connection with any such warrant exercise. We expect to use the proceeds received from the exercise of the warrants, if any, for general working capital purposes.

DESCRIPTION OF CAPITAL STOCK

The following description of common stock and preferred stock summarizes the material terms and provisions of the common stock and preferred stock that we may offer under this prospectus, but is not complete. For the complete terms of our common stock and preferred stock, please refer to our certificate of incorporation, as amended, any certificates of designation for our preferred stock, and our bylaws, as may be amended from time to time. While the terms we have summarized below will apply generally to any future common stock or preferred stock that we may offer, we will describe the specific terms of any series of preferred stock in more detail in the applicable prospectus supplement. If we so indicate in a prospectus supplement, the terms of any preferred stock we offer under that prospectus supplement may differ from the terms we describe below.

We have authorized 46,714,286 shares of capital stock, par value \$0.001 per share, of which 45,714,286 are shares of common stock and 1,000,000 are shares of “blank check” preferred stock. On September 4, 2014, there were 16,209,844 shares of common stock issued and outstanding and no shares of preferred stock issued and outstanding. The authorized and unissued shares of common stock and the authorized and undesignated shares of preferred stock are available for issuance without further action by our shareholders, unless such action is required by applicable law or the rules of any stock exchange on which our securities may be listed. Unless approval of our shareholders is so required, our board of directors does not intend to seek shareholder approval for the issuance and sale of our common stock or preferred stock.

The discussion below gives effect to the 1-for-43.75 reverse stock split of our common stock that occurred on November 18, 2013.

Common Stock

The holders of our common stock are entitled to one vote per share. Our certificate of incorporation does not provide for cumulative voting. The holders of our common stock are entitled to receive ratably such dividends, if any, as may be declared by our board of directors out of legally available funds; however, the current policy of our board of directors is to retain earnings, if any, for operations and growth. Upon liquidation, dissolution or winding-up, the holders of our common stock are entitled to share ratably in all assets that are legally available for distribution. The holders of our common stock have no preemptive, subscription, redemption or conversion rights. The rights, preferences and privileges of holders of our common stock are subject to, and may be adversely affected by, the rights of the holders of any series of preferred stock, which may be designated solely by action of our board of directors and issued in the future.

The transfer agent and registrar for our common stock is Action Stock Transfer Corp. The transfer agent's address is 2469 E. Fort Union Blvd., Suite 214, Salt Lake City, Utah 84121. Our common stock is listed on the Nasdaq Capital Market under the symbol "ALQA."

Preferred Stock

The board of directors is authorized, subject to any limitations prescribed by law, without further vote or action by the shareholders, to issue from time to time shares of preferred stock in one or more series. Preferred stock may be convertible into shares of our common stock or other series of preferred stock. Each such series of preferred stock shall have such number of shares, designations, preferences, voting powers, qualifications, and special or relative rights or privileges as shall be determined by the board of directors, which may include, among others, dividend rights, voting rights, liquidation preferences, conversion rights and preemptive rights. Issuance of preferred stock by our board of directors may result in such shares having dividend or liquidation preferences senior to the rights of the holders of our common stock and could dilute the voting rights of the holders of our common stock.

Prior to the issuance of shares of each series of preferred stock, the board of directors is required by the Delaware General Corporation Law and our certificate of incorporation to adopt resolutions and file a certificate of designation with the Secretary of State of the State of Delaware. The certificate of designation fixes for each class or series the designations, powers, preferences, rights, qualifications, limitations and restrictions, including, but not limited to, some or all of the following:

the number of shares constituting that series and the distinctive designation of that series, which number may be increased or decreased (but not below the number of shares then outstanding) from time to time by action of the board of directors;

the dividend rate and the manner and frequency of payment of dividends on the shares of that series, whether dividends will be cumulative, and, if so, from which date;

whether that series will have voting rights, in addition to any voting rights provided by law, and, if so, the terms of such voting rights;

the terms and conditions of any conversion privilege of the series, including provision for adjustment of the conversion rate in such events as the board of directors may determine;

whether or not the shares of that series will be redeemable, and, if so, the terms and conditions of such redemption;

whether that series will have a sinking fund for the redemption or purchase of shares of that series, and, if so, the terms and amount of such sinking fund;

whether or not the shares of the series will have priority over or be on a parity with or be junior to the shares of any other series or class in any respect;

the rights of the shares of that series in the event of voluntary or involuntary liquidation, dissolution or winding up of the corporation, and the relative rights or priority, if any, of payment of shares of that series; and

any other relative rights, preferences and limitations of that series.

Once designated by our board of directors, each series of preferred stock may have specific financial and other terms that will be described in a prospectus supplement. The description of the preferred stock that is set forth in any prospectus supplement is not complete without reference to the documents that govern the preferred stock. These include our certificate of incorporation and any certificates of designation that our board of directors may adopt.

All shares of preferred stock offered hereby will, when issued, be fully paid and nonassessable, including shares of preferred stock issued upon the exercise of preferred stock warrants or subscription rights, if any.

Although our board of directors has no intention at the present time of doing so, it could authorize the issuance of a series of preferred stock that could, depending on the terms of such series, impede the completion of a merger, tender offer or other takeover attempt.

Registration Rights

Pursuant to our stock purchase agreement with Celgene Corporation, dated November 14, 2013, we granted to Celgene Corporation, in the event that we register any securities for public sale, subject to certain customary exceptions, the right to include in the registration statement the shares of common stock and the shares of common stock issuable upon the exercise of the warrants acquired by Celgene Corporation under the stock purchase agreement. If the registration statement is in connection with an underwritten public offering, the managing underwriter may limit the number shares being registered on behalf of Celgene Corporation. We are registering the shares of common stock and the shares of common stock issuable upon the exercise of the warrants acquired by Celgene Corporation under the stock purchase agreement pursuant to the registration statement of which this prospectus forms a part.

Delaware Anti-Takeover Law and Provisions of our Certificate of Incorporation and Bylaws

Delaware Anti-Takeover Law

We are subject to Section 203 of the Delaware General Corporation Law. Section 203 generally prohibits a public Delaware corporation from engaging in a “business combination” with an “interested stockholder” for a period of three years after the date of the transaction in which the person became an interested stockholder, unless:

prior to the date of the transaction, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;

the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of shares outstanding (i) shares owned by persons who are directors and also officers and (ii) shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or

on or subsequent to the date of the transaction, the business combination is approved by the board and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock which is not owned by the interested stockholder.

Section 203 defines a business combination to include:

any merger or consolidation involving the corporation and the interested stockholder;

any sale, transfer, pledge or other disposition involving the interested stockholder of 10% or more of the assets of the corporation;

subject to exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder; or

the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 defines an interested stockholder as any entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with, or controlling, or controlled by, the entity or person. The term “owner” is broadly defined to include any person that, individually, with or through that person’s affiliates or associates, among other things, beneficially owns the stock, or has the right to acquire the stock, whether or not the right is immediately exercisable, under any agreement or understanding or upon the exercise of warrants or options or otherwise or has the right to vote the stock under any agreement or understanding, or has an agreement or understanding with the beneficial owner of the stock for the purpose of acquiring, holding, voting or

disposing of the stock.

The restrictions in Section 203 do not apply to corporations that have elected, in the manner provided in Section 203, not to be subject to Section 203 of the Delaware General Corporation Law or, with certain exceptions, which do not have a class of voting stock that is listed on a national securities exchange or authorized for quotation on the Nasdaq Stock Market or held of record by more than 2,000 stockholders. Our certificate of incorporation and bylaws do not opt out of Section 203.

Section 203 could delay or prohibit mergers or other takeover or change in control attempts with respect to us and, accordingly, may discourage attempts to acquire us even though such a transaction may offer our stockholders the opportunity to sell their stock at a price above the prevailing market price.

Certificate of Incorporation and Bylaws

Provisions of our certificate of incorporation and bylaws may delay or discourage transactions involving an actual or potential change in our control or change in our management, including transactions in which shareholders might otherwise receive a premium for their shares, or transactions that our shareholders might otherwise deem to be in their best interests. Therefore, these provisions could adversely affect the price of our common stock. Among other things, our certificate of incorporation and bylaws:

· permit our board of directors to issue up to 1,000,000 shares of preferred stock, without further action by the shareholders, with any rights, preferences and privileges as they may designate, including the right to approve an acquisition or other change in control;

· provide that the authorized number of directors may be changed only by resolution of the board of directors;

· provide that all vacancies, including newly created directorships, may, except as otherwise required by law, be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum;

· do not provide for cumulative voting rights (therefore allowing the holders of a majority of the shares of common stock entitled to vote in any election of directors to elect all of the directors standing for election, if they should so choose);

· provide that special meetings of our shareholders may be called only by our board of directors; and

· set forth an advance notice procedure with regard to the nomination, other than by or at the direction of our board of directors, of candidates for election as directors and with regard to business to be brought before a meeting of shareholders.

DESCRIPTION OF DEBT SECURITIES

The following summary of the terms of the debt securities describes general terms that apply to the debt securities. The debt securities offered pursuant to this prospectus will be unsecured obligations and will be either senior debt or subordinated debt. The debt securities may be convertible into shares of our common stock or shares of our preferred stock. In addition, one or more of our subsidiaries may be guarantors of our debt securities. The particular terms of any debt securities will be described more specifically in each prospectus supplement relating to those debt securities. Where any provision in an accompanying prospectus supplement is inconsistent with any provision in this summary, the prospectus supplement will control.

Senior debt securities and subordinated debt securities will be issued under a debt indenture summarized below. Where we make no distinction in our summary between senior debt securities and subordinated debt securities, the applicable information refers to any debt securities. Since this is only a summary, it does not contain all of the information that may be important to you. A form of indenture relating to the debt securities is an exhibit to the registration statement of which this prospectus is a part. We encourage you to read those documents.

General

The indenture does not limit the aggregate principal amount of debt securities we may issue and provides that we may issue debt securities thereunder from time to time in one or more series. The indenture does not limit the amount of other indebtedness or debt securities which we or our subsidiaries may issue. Under the indenture, the terms of the debt securities of any series may differ and we, without the consent of the holders of the debt securities of any series, may reopen a previous series of debt securities and issue additional debt securities of the series or establish additional terms of the series.

Unless otherwise provided in a prospectus supplement, the senior debt securities will be our unsecured obligations and will rank equally with all of our other unsecured and senior indebtedness, and the subordinated debt securities will be unsecured obligations of ours and, as set forth below under “—Subordinated Debt Securities,” will be subordinated in right of payment to all of our senior indebtedness.

If any of our assets are held in subsidiaries established in connection with financing transactions, our rights and the rights of our creditors (including the holders of debt securities) and shareholders to participate in any distribution of assets of any subsidiary upon the subsidiary’s liquidation or reorganization or otherwise would be subject to the prior claims of the subsidiary’s creditors, except to the extent that we may be a creditor with recognized claims against the subsidiary.

You should refer to the prospectus supplement that accompanies this prospectus for a description of the specific series of debt securities we are offering by that prospectus supplement. The terms may include:

- the title and specific designation of the debt securities, including whether they are senior debt securities or subordinated debt securities;
- any limit on the aggregate principal amount of the debt securities or the series of which they are a part;
- whether the debt securities are to be issuable as registered securities, as bearer securities or alternatively as bearer securities and registered securities, and if as bearer securities, whether interest on any portion of a bearer security in global form will be paid to any clearing organizations;
- the date or dates on which we must pay principal;
- the rate or rates at which the debt securities will bear interest or the manner in which interest will be determined, if any interest is payable;
- the date or dates from which any interest will accrue, the date or dates on which we must pay interest and the record date for determining who is entitled to any interest payment;

- the place or places where we must pay the debt securities and where any debt securities issued in registered form may be sent for transfer, conversion or exchange;
- the terms and conditions on which we may, or may be required to, redeem the debt securities;
- the terms and conditions of any sinking fund;
- if other than denominations of \$1,000, the denominations in which we may issue the debt securities;
- the terms and conditions upon which debt securities may be convertible into shares of our common stock or shares of our preferred stock, including the conversion price, the conversion period and other conversion provisions;
- the amount we will pay if the maturity of the debt securities is accelerated;
- whether we will issue the debt securities in the form of one or more global securities and, if so, the identity of the depositary for the global security or securities;
- any addition to or changes in the events of default or covenants that apply to the debt securities;
- whether the debt securities will be defeasible;
- whether one or more of our subsidiaries will provide guarantees of the debt securities, and the terms of any subordination of such guarantee; and
- any other terms of the debt securities and any other deletions from or modifications or additions to the debt indenture in respect of the debt securities, including those relating to the subordination of any debt securities.

Unless the applicable prospectus supplement specifies otherwise, the debt securities will not be listed on any securities exchange.

Unless the applicable prospectus supplement specifies otherwise, we will issue the debt securities in fully registered form without coupons. If we issue debt securities of any series in bearer form, the applicable prospectus supplement will describe the special restrictions and considerations, including special offering restrictions and special federal income tax considerations, applicable to those debt securities and to payment on and transfer and exchange of those debt securities. Debt securities issued in bearer form will be transferable by delivery.

Unless otherwise stated in the prospectus supplement, we will, subject to certain conditions, pay principal, premium, interest and additional amounts, if any, on the debt securities at the office or agency we maintain for that purpose (initially the corporate trust office of the trustee). We may, subject to certain conditions, pay interest on debt securities issued in registered form by check mailed to the address of the persons entitled to the payments or we may pay by transfer to their U.S. bank accounts. Interest on debt securities issued in registered form will be payable on any interest payment date to the registered owners of the debt securities at the close of business on the regular record date

for the interest payment. We will name in the prospectus supplement all paying agents we initially designate for the debt securities. We may designate additional paying agents, rescind the designation of any paying agent or approve a change in the office through which any paying agent acts, but we must maintain a paying agent in each place where payments on the debt securities are payable.

Unless otherwise stated in the prospectus supplement, the debt securities may be presented for transfer (duly endorsed or accompanied by a written instrument of transfer, if we or the security registrar so requires) or exchanged for other debt securities of the same series (containing identical terms and provisions, in any authorized denominations, and in the same aggregate principal amount) at the office or agency we maintain for that purpose (initially the corporate trust office of the trustee). There will be no service charge for any transfer or exchange, but we may require payment sufficient to cover any tax or other governmental charge or expenses payable in connection with the transfer or exchange. We will not be required to:

issue, register the transfer of, or exchange, debt securities during a period beginning at the opening of business 15 days before the day of mailing of a notice of redemption of any such debt securities and ending at the close of business on the day of such mailing; or

register the transfer of or exchange any debt security selected for redemption in whole or in part, except the unredeemed portion of any debt security being redeemed in part.

We shall appoint the trustee as security registrar. Any transfer agent (in addition to the security registrar) we initially designate for any debt securities will be named in the related prospectus supplement. We may designate additional transfer agents, rescind the designation of any transfer agent or approve a change in the office through which any transfer agent acts, but we must maintain a transfer agent in each place where any payments on the debt securities are payable.

Unless otherwise stated in the prospectus supplement, we will issue the debt securities only in fully registered form, without coupons, in minimum denominations of \$1,000 and integral multiples of \$1,000. The debt securities may be represented in whole or in part by one or more global debt securities. Each global security will be registered in the name of a depository or its nominee and the global security will bear a legend regarding the restrictions on exchanges and registration of transfer. Interests in a global security will be shown on records maintained by the depository and its participants, and transfers of those interests will be made as described below. Provisions relating to the use of global securities are more fully described below in the section entitled "Use of Global Securities."

We may issue the debt securities as original issue discount securities (bearing no interest or bearing interest at a rate which at the time of issuance is below market rates) to be sold at a substantial discount below their principal amount. We will describe certain special U.S. federal income tax and other considerations applicable to any debt securities that are issued as original issue discount securities in the applicable prospectus supplement.

We will comply with Section 14(e) under the Exchange Act, and any other tender offer rules under the Exchange Act that may then be applicable, in connection with any obligation to purchase debt securities at the option of the holders. Any such obligation applicable to a series of debt securities will be described in the related prospectus supplement.

Unless otherwise described in a prospectus supplement relating to any debt securities, the indenture does not limit our ability to incur debt or give holders of debt securities protection in the event of a sudden and significant decline in our credit quality or a takeover, recapitalization or highly leveraged or similar transaction involving us. Accordingly, we could in the future enter into transactions that could increase the amount of indebtedness outstanding at that time or otherwise affect our capital structure or credit quality. You should refer to the prospectus supplement relating to a particular series of debt securities for information regarding any changes in the events of default described below or covenants contained in the debt indenture, including any addition of a covenant or other provisions providing event risk or similar protection.

Conversion Rights

An applicable prospectus supplement may set forth the terms on which the debt securities of any series are convertible into shares of our common stock or preferred stock. Those terms will address whether conversion is mandatory, at the option of the holder or at our option. The terms may also provide that the number of shares of our common stock to be received by the holders of the debt securities will be calculated according to the market price of our common stock as of a time stated in the prospectus supplement or otherwise.

Subordinated Debt Securities

Unless otherwise provided in the applicable prospectus supplement, the following provisions will apply for subordinated debt securities.

Before we pay the principal of, premium, if any and interest on, the subordinated debt securities, we must be current and not in default on payment in full of all of our senior indebtedness. Senior indebtedness includes all of our indebtedness as described below, except for:

• obligations issued or assumed as the deferred purchase price of property;

• conditional sale obligations;

• obligations arising under any title retention agreements;

• indebtedness relating to the applicable subordinated debt securities;

• indebtedness owed to any of our subsidiaries; and

• indebtedness that, by its terms, is subordinate in right of payment to or equal with the applicable subordinated debt securities.

Generally, indebtedness means:

• the principal of, premium, if any, and interest on indebtedness for money borrowed;

• the principal of, premium, if any, and interest on indebtedness evidenced by notes, debentures, bonds or other similar instruments;

• capitalized lease obligations;

• obligations issued or assumed as the deferred purchase price of property, all conditional sale obligations and all obligations arising under any title retention agreements;

obligations for the reimbursement of any obligor on any letter of credit, banker's acceptance or similar credit transaction (other than obligations with respect to certain letters of credit securing obligations entered into in the ordinary course of business);

obligations of the type referred to in the bullet points above assumed for another party and dividends of another party for the payment of which, in either case, one is responsible or liable as obligor, guarantor or otherwise; and

obligations assumed of the types referred to in the bullet points above for another party secured by any lien on any of one's property or assets.

Indebtedness does not include amounts owed pursuant to trade accounts arising in the ordinary course of business.

Generally, we may not pay the principal of, premium, if any, or interest on the subordinated debt securities if, at the time of payment (or immediately after giving effect to such payment):

• there exists under any senior indebtedness, or any agreement under which any senior indebtedness is issued, any default, which default results in the full amount of the senior indebtedness being declared due and payable; or

the trustee has received written notice from a holder of senior indebtedness stating that there exists under the senior indebtedness, or any agreement under which the senior indebtedness is issued, a default, which default permits the holders of the senior indebtedness to declare the full amount of the senior indebtedness due and payable, unless, among other things, in either case:

• the default has been cured or waived; or

• full payment of amounts then due for principal and interest and of all other obligations then due on all senior indebtedness has been made or duly provided for under the terms of any instrument governing senior indebtedness. Limited subordination periods apply in the event of non-payment defaults relating to senior indebtedness in situations where there has not been an acceleration of senior indebtedness.

A failure to make any payment on the subordinated debt securities as a result of the foregoing provisions will not affect our obligations to the holders of the subordinated debt securities to pay the principal of, premium, if any, and interest on the subordinated debt securities as and when such payment obligations become due.

The holders of senior indebtedness will be entitled to receive payment in full of all amounts due or to become due on senior indebtedness, or provisions will be made for such payment, before the holders of the subordinated debt securities are entitled to receive any payment or distribution of any kind relating to the subordinated debt securities or on account of any purchase or other acquisition of the subordinated debt securities by us or any of our subsidiaries, in the event of:

- insolvency or bankruptcy case or proceeding, or any receivership, liquidation, reorganization or other similar case, relating to us or our assets;
- any liquidation, dissolution or other winding up of Alliqua BioMedical, Inc., whether voluntary or involuntary and whether or not involving insolvency or bankruptcy; or
- any assignment for the benefit of our creditors or any other marshaling of our assets and liabilities.

In addition, the rights of the holders of the subordinated debt securities will be subrogated to the rights of the holders of senior indebtedness to receive payments and distributions of cash, property and securities applicable to the senior indebtedness until the principal of, premium, if any, and interest on the subordinated debt securities are paid in full.

Because of these subordination provisions, our creditors who hold senior indebtedness or other unsubordinated indebtedness may recover a greater percentage of the debt owed to them than the holders of the subordinated debt securities.

The debt indenture will not limit the aggregate amount of senior indebtedness that we may issue. If this prospectus is being delivered in connection with the offering of a series of subordinated debt securities, the accompanying prospectus supplement or the information incorporated in this prospectus by reference will set forth the approximate amount of senior debt outstanding as of a recent date.

Consolidation, Merger and Sale of Assets

We may not consolidate with or merge into any other person or convey or transfer or lease our properties and assets substantially as an entirety to any person unless:

- if we consolidate with or merge into another corporation or convey or transfer our properties and assets substantially as an entirety to any person, the successor is organized under the laws of the United States, or any state, and assumes our obligations under the debt securities;

- immediately after the transaction, no event of default occurs and continues; and

- we meet certain other conditions specified in the indenture.

Modification and Waiver

We and the trustee may modify and amend the debt indenture without the consent of the holders of the outstanding debt securities of each affected series, in order to, among other things:

- evidence the succession of another corporation to us and the assumption of all of our obligations under the debt securities, any related coupons and our covenants by a successor;

- add to our covenants for the benefit of holders of debt securities or surrender any of our rights or powers;

- add additional events of default for any series;

- add, change or eliminate any provision affecting debt securities that are not yet issued;

- secure certain debt securities;

- establish the form or terms of debt securities not yet issued;

- make provisions with respect to conversion or exchange rights of holders of debt securities;

evidence and provide for successor trustees;

permit payment in respect of debt securities in bearer form in the United States, if allowed without penalty under applicable laws and regulations; or

correct or supplement any inconsistent provisions, cure any ambiguity or mistake, or add any other provisions, on the condition that this action does not adversely affect the interests of any holder of debt securities of any series issued under the indenture in any material respect.

In addition, we and the trustee may modify and amend the debt indenture with the consent of the holders of at least a majority in aggregate principal amount of the outstanding debt securities of each affected series. However, without the consent of each holder, we cannot modify or amend the debt indenture in a way that would:

change the stated maturity of the principal of, or any premium or installment of interest on, any debt security;

reduce the principal or interest on any debt security;

change the place of payment of principal or interest on any debt security;

impair the right to sue to enforce any payment on any debt security after it is due; or

reduce the percentage in principal amount of outstanding debt securities necessary to modify or amend the debt indenture, to waive compliance with certain provisions of the debt indenture or to waive certain defaults.

The holders of at least a majority in aggregate principal amount of outstanding debt securities may waive our compliance with certain restrictive covenants of the debt indenture. The holders of at least a majority in principal amount of the outstanding debt securities of any series may waive any past default under the debt indenture with respect to outstanding debt securities of that series, which will be binding on all holders of debt securities of that series, except a default in the payment of principal or interest on any debt security of that series or in respect of a provision of the debt indenture that cannot be modified or amended without each holder's consent.

Events of Default

Each of the following will be an event of default:

default for 30 days in the payment of any interest;

default in the payment of principal;

default in the deposit of any sinking fund payment;

default in the performance of any other covenant in the debt indenture for 60 days after written notice; and

certain events in bankruptcy, insolvency or reorganization.

We are required to furnish the trustee annually a statement as to our fulfillment of our obligations under the debt indenture. The trustee may withhold notice of any default to the holders of debt securities of any series (except for a default on principal or interest payments on debt securities of that series) if it considers it in the interest of the holders to do so.

If an event of default occurs and continues, either the trustee or the holders of not less than 25% in principal amount of the outstanding debt securities of the series in default may declare the principal amount immediately due and payable by written notice to us (and to the trustee if given by the holders). Upon any such declaration, the principal amount will become immediately due and payable. However, the holders of a majority in principal amount of the outstanding debt securities of that series may, under certain circumstances, rescind and annul the acceleration.

Except for certain duties in case of an event of default, the trustee is not required to exercise any of its rights or powers at the request or direction of any of the holders, unless the holders offer the trustee reasonable security or indemnity. If the holders provide this security or indemnity, the holders of a majority in principal amount of the outstanding debt securities of a series may direct the time, method and place of conducting any proceeding for any remedy available to the trustee, or exercising any trust or powers conferred on the trustee with respect to the debt securities of that series.

No holder of a debt security may bring any lawsuit or other proceeding with respect to the indenture or for any remedy under the indenture, unless:

- the holder first gives the trustee written notice of a continuing event of default;

the holders of at least 25% in principal amount of the outstanding debt securities of the series in default give the trustee a written request to bring the proceeding and offer the trustee reasonable security or indemnity; and

the trustee fails to institute the proceeding within 60 days of the written request and has not received from holders of a majority in principal amount of the outstanding debt securities of the series in default a direction inconsistent with that request.

However, the holder of any debt security has the absolute right to receive payment of the principal of and any interest on the debt security on or after the stated due dates and to take any action to enforce any such payment.

Discharge, Defeasance and Covenant Defeasance

We may discharge certain obligations to holders of any series of debt securities that have not already been delivered to the trustee for cancellation and that either have become due and payable or will become due and payable within one year (or scheduled for redemption within one year) by depositing with the trustee, in trust, funds in U.S. dollars an amount sufficient to pay the principal and any premium, interest and additional amounts on such debt securities to the date of deposit (if the debt securities have become due and payable) or to the maturity date, as the case may be.

Unless a prospectus supplement states that the following provisions do not apply to the debt securities of that series, we may elect either:

to defease and be discharged from any and all obligations with respect to such debt securities (except for, among other things, the obligation to pay additional amounts, if any, upon the occurrence of certain events of taxation, assessment or governmental charge with respect to payments on the debt securities and other obligations to provide for the conversion rights of the holders of such debt securities, to register the transfer or exchange of such debt securities, to replace temporary or mutilated, destroyed, lost or stolen debt securities, to maintain an office or agency with respect to such debt securities and to hold moneys for payment in trust), such an action a “defeasance,” or

to be released from our obligations under the indenture with respect to the debt securities as may be further described in any prospectus supplement, and our failure to comply with these obligations will not constitute an event of default with respect to such debt securities, such an action a “covenant defeasance”.

Defeasance or covenant defeasance is conditioned on our irrevocable deposit with the trustee, in trust, of an amount in cash or government securities, or both, sufficient to pay the principal of, any premium and interest on, and any additional amounts with respect to, the debt securities on the scheduled due dates. Additional conditions to defeasance or covenant defeasance require that:

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the applicable defeasance or covenant defeasance does not result in a breach or violation of, or constitute a default under, the debt indenture or any other material agreement or instrument to which we are a party or by which we are bound,

no event of default has occurred and continues on the date the trust is established and, with respect to defeasance only, at any time during the period ending on the 123rd day after that date, and

we have delivered to the trustee an opinion of counsel to the effect that the holders of such debt securities will not recognize income, gain or loss for U.S. federal income tax purposes as a result of the defeasance or covenant defeasance and will be subject to U.S. federal income tax for the same amounts, in the same manner and at the same times as would have been the case if the defeasance or covenant defeasance had not occurred. This opinion, in the case of defeasance, must refer to and be based upon a letter ruling we have received from the Internal Revenue Service, a Revenue Ruling published by the Internal Revenue Service, or a change in applicable U.S. federal income tax law occurring after the date of the debt indenture.

If we accomplish covenant defeasance on debt securities of certain holders, those holders can still look to us for repayment of their debt securities in the event of any shortfall in the trust deposit. If one of the remaining events of default occurred, such as our bankruptcy, and the debt securities became immediately due and payable, there may be a shortfall. Depending on the event causing the default, such holders may not be able to obtain payment of the shortfall.

In the case of subordinated debt securities, the subordination provisions described under “—Subordinated Debt Securities” above are made subject to the provisions for defeasance and covenant defeasance. In other words, if we accomplish defeasance or covenant defeasance on any subordinated debt securities, such securities would cease to be so subordinated.

Guarantee

One or more subsidiary guarantors may fully and unconditionally guarantee on an unsecured basis the full and prompt payment of the principal of and any premium and interest on the debt securities when and as the payment becomes due and payable, whether at maturity or otherwise. The guarantee provides that in the event of a default in the payment of principal of or any premium or interest on a debt security, the holder of that debt security may institute legal proceedings directly against the applicable subsidiary guarantor to enforce the guarantee without first proceeding against Alliqua BioMedical, Inc. If senior debt securities are so guaranteed, the guarantee will rank equally with all of the subsidiary guarantor’s other unsecured and unsubordinated debt from time to time outstanding and senior to any subordinated debt of the subsidiary guarantor. If subordinated debt securities are so guaranteed, the guarantee will be subordinated to all of the subsidiary guarantor’s other unsecured and unsubordinated debt from time to time outstanding.

The obligations of any subsidiary guarantor under the guarantee will be limited to the maximum amount that will not result in the obligations of the subsidiary guarantor under the guarantee constituting a fraudulent conveyance or fraudulent transfer under federal or state law, after giving effect to any other contingent and fixed liabilities of the subsidiary guarantor.

No guarantor shall consolidate with or merge into any other person or sell, convey or transfer all or substantially all its properties and assets to any person, unless:

(1) in case such guarantor shall consolidate with or merge into another person or sell, convey, transfer or lease all or substantially all its properties and assets to any person, the person formed by such transaction shall be a corporation, partnership or trust, shall be organized and validly existing under the laws of the United States, any state thereof or the District of Columbia and shall expressly assume the performance or observance of every covenant of the indenture and any guarantees on the part of such guarantor to be performed or observed;

(2) immediately after giving effect to such transaction no event of default, and no event which, after notice or lapse of time or both, would become an event of default, shall have happened and be continuing; and

(3) the transaction meets certain other criteria described in the indenture.

The guarantee may be released under certain circumstances. If Alliqua BioMedical, Inc. exercises its legal or covenant defeasance option with respect to debt securities of a particular series as described above in “—Discharge, Defeasance and Covenant Defeasance,” then any subsidiary guarantor will be released with respect to that series. Further, if no default has occurred and is continuing under the indentures, and to the extent not otherwise prohibited by the indentures, any subsidiary guarantor will be unconditionally released and discharged from the guarantee:

· automatically upon any sale, exchange or transfer, whether by way of merger or otherwise, to any person that is not an affiliate of Alliqua BioMedical, Inc., of all of Alliqua BioMedical, Inc.’s equity interests in the subsidiary guarantor;

automatically upon the merger of the subsidiary guarantor into Alliqua BioMedical, Inc. or the liquidation and dissolution of the subsidiary guarantor; or

following delivery of a written notice by Alliqua BioMedical, Inc. to the trustee, upon the release of all guarantees by the subsidiary guarantor of any debt of Alliqua BioMedical, Inc.'s for borrowed money, except for any series of debt securities.

Governing Law

The debt indentures and the debt securities will be governed by and interpreted under the laws of the State of New York.

USE OF GLOBAL SECURITIES

The debt securities of any series may be issued in whole or in part in the form of one or more global debt securities that will be deposited with a depository or its nominee identified in the series prospectus supplement.

The specific terms of the depository arrangement covering debt securities will be described in the prospectus supplement relating to that series. We anticipate that the following provisions or similar provisions will apply to depository arrangements relating to debt securities, although to the extent the terms of any arrangement differs from those described in this section, the terms of the arrangement shall supersede those in this section as ultimately described in the applicable indenture and related documents.

Upon the issuance of a global security, the depository for the global security or its nominee will credit, to accounts in its book-entry registration and transfer system, the principal amounts of the debt securities represented by the global security. These accounts will be designated by the underwriters or agents with respect to such debt securities or by us if such debt securities are offered and sold directly by us. Only institutions that have accounts with the depository or its nominee, and persons who hold beneficial interests through those participants, may own beneficial interests in a global security. Ownership of beneficial interests in a global security will be shown only on, and the transfer of those ownership interests will be effected only through, records maintained by the depository, its nominee or any such participants. The laws of some states require that certain purchasers of securities take physical delivery of such securities in definitive form. These laws may prevent you from transferring your beneficial interest in a global security.

As long as the depository or its nominee is the registered owner of a global security, the depository or nominee will be considered the sole owner or holder of the debt securities represented by the global security. Except as described below, owners of beneficial interests in a global security will not be entitled to have debt securities registered in their names and will not be entitled to receive physical delivery of the debt securities in definitive form.

We will make all payments of principal of, any premium and interest on, and any additional amounts with respect to, debt securities issued as global securities to the depository or its nominee. Neither we nor the trustee, any paying agent or the security registrar assumes any responsibility or liability for any aspect of the depository's or any participant's records relating to, or for payments made on account of, beneficial interests in a global security.

We expect that the depository for a series of debt securities or its nominee, upon receipt of any payment with respect to such debt securities, will credit immediately participants' accounts with payments in amounts proportionate to their respective beneficial interest in the principal amount of the global security for such debt securities as shown on the records of such depository or its nominee. We also expect that payments by participants to owners of beneficial

interests in such global security held through such participants will be governed by standing instructions and customary practices, as is now the case with securities held for the accounts of customers registered in “street name,” and will be the responsibility of such participants.

The applicable indenture provides that if:

- the depositary notifies us that it is unwilling or unable to continue as depositary for a series of debt securities, or if
- the depositary is no longer legally qualified to serve in that capacity, and we have not appointed a successor depositary within 90 days of written notice;
- we determine that a series of debt securities will no longer be represented by global securities and we execute and deliver an order to that effect to the trustee; or
- an event of default with respect to a series of debt securities occurs and continues;

the global securities for that series will be exchanged for registered debt securities in definitive form. The definitive debt securities will be registered in the name or names the depositary instructs the trustee. We expect that these instructions may be based upon directions the depositary receives from participants with respect to ownership of beneficial interests in global securities.

DESCRIPTION OF WARRANTS

As of September 4, 2014, there were 2,675,121 shares of common stock that may be issued upon exercise of outstanding warrants, of which 2,218,976 shares of common stock underlying warrants that are presently exercisable and 456,145 shares of common stock underlying warrants that become exercisable between October 15, 2014 and November 12, 2014.

We may issue warrants for the purchase of common stock or preferred stock in one or more series. We may issue warrants independently or together with common stock or preferred stock, and the warrants may be attached to or separate from these securities.

We will evidence each series of warrants by warrant certificates that we may issue under a separate agreement. We may enter into a warrant agreement with a warrant agent. Each warrant agent may be a bank that we select which has its principal office in the U.S. We may also choose to act as our own warrant agent. We will indicate the name and address of any such warrant agent in the applicable prospectus supplement relating to a particular series of warrants.

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

- the offering price and aggregate number of warrants offered;
- if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each such security or each principal amount of such security;
- if applicable, the date on and after which the warrants and the related securities will be separately transferable;
- in the case of warrants to purchase common stock or preferred stock, the number or amount of shares of common stock or preferred stock, as the case may be, purchasable upon the exercise of one warrant and the price at which and currency in which these shares may be purchased upon such exercise;
- the manner of exercise of the warrants, including any cashless exercise rights;
- the warrant agreement under which the warrants will be issued;
- the effect of any merger, consolidation, sale or other disposition of our business on the warrant agreement and the warrants;
- anti-dilution provisions of the warrants, if any;

- the terms of any rights to redeem or call the warrants;
- any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the warrants;
- the dates on which the right to exercise the warrants will commence and expire or, if the warrants are not continuously exercisable during that period, the specific date or dates on which the warrants will be exercisable;
- the manner in which the warrant agreement and warrants may be modified;
- the identities of the warrant agent and any calculation or other agent for the warrants;
- federal income tax consequences of holding or exercising the warrants;

- the terms of the securities issuable upon exercise of the warrants;
- any securities exchange or quotation system on which the warrants or any securities deliverable upon exercise of the warrants may be listed or quoted; and
- any other specific terms, preferences, rights or limitations of or restrictions on the warrants.

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

Exercise of Warrants

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

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

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

Enforceability of Rights By Holders of Warrants

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

Warrant Agreement Will Not Be Qualified Under Trust Indenture Act

No warrant agreement will be qualified as an indenture, and no warrant agent will be required to qualify as a trustee, under the Trust Indenture Act. Therefore, holders of warrants issued under a warrant agreement will not have the protection of the Trust Indenture Act with respect to their warrants.

Governing Law

Each warrant agreement and any warrants issued under the warrant agreements will be governed by New York law.

DESCRIPTION OF SUBSCRIPTION RIGHTS

The following is a general description of the terms of the subscription rights we may issue from time to time. Particular terms of any subscription rights we offer will be described in the prospectus supplement relating to such subscription rights, and may differ from the terms described herein.

We may issue subscription rights to purchase common stock, preferred stock, debt securities or other securities offered hereby. These subscription rights may be issued independently or together with any other security offered hereby and may or may not be transferable by the stockholder receiving the subscription rights in such offering. In connection with any offering of subscription rights, we may enter into a standby arrangement with one or more underwriters or other purchasers pursuant to which the underwriters or other purchasers may be required to purchase any securities remaining unsubscribed for after such offering.

The applicable prospectus supplement will describe the specific terms of any offering of subscription rights for which this prospectus is being delivered, including the following:

- whether common stock, preferred stock, debt securities or other securities will be offered under the stockholder subscription rights;
- the price, if any, for the subscription rights;
- the exercise price payable for each security upon the exercise of the subscription rights;
- the number of subscription rights issued to each stockholder;
- the number and terms of the securities which may be purchased per each subscription right;
- the extent to which the subscription rights are transferable;
- any other terms of the subscription rights, including the terms, procedures and limitations relating to the exchange and exercise of the subscription rights;
-

the date on which the right to exercise the subscription rights shall commence, and the date on which the subscription rights shall expire;

the extent to which the subscription rights may include an over-subscription privilege with respect to unsubscribed securities;

if appropriate, a discussion of material U.S. federal income tax considerations; and

if applicable, the material terms of any standby underwriting or purchase arrangement entered into by us in connection with the offering of subscription rights.

The description in the applicable prospectus supplement of any subscription rights we offer will not necessarily be complete and will be qualified in its entirety by reference to the applicable subscription rights certificate or subscription rights agreement, which will be filed with the Securities and Exchange Commission if we offer subscription rights.

DESCRIPTION OF UNITS

We may issue units comprised of one or more of the other securities described in this prospectus or any prospectus supplement in any combination. Each unit will be issued so that the holder of the unit is also the holder, with the rights and obligations of a holder, of each security included in the unit. The unit agreement under which a unit is issued may provide that the securities included in the unit may not be held or transferred separately, at any time or at any times before a specified date or upon the occurrence of a specified event or occurrence.

The applicable prospectus supplement will describe:

- the designation and the terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- any unit agreement under which the units will be issued;
- any provisions for the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units; and
- whether the units will be issued in fully registered or global form.

SELLING SHAREHOLDERS

The selling shareholders named in the table below may from time to time offer and sell pursuant to this prospectus and any applicable prospectus supplement up to 7,866,797 shares of our common stock. When we refer to “selling shareholders” in this prospectus, we mean those persons listed in the table below, as well as their transferees, pledgees or donees or their successors. The selling shareholders may sell all, a portion or none of their shares at any time. The information regarding shares beneficially owned after the offering assumes the sale of all shares offered by the selling shareholders. Except as otherwise indicated, each selling shareholder has sole voting and dispositive power with respect to such shares.

Name of Selling Shareholder	Shares Beneficially Owned Before the Offering	Maximum Number of Shares that May be Sold		Shares Beneficially Owned After the Offering	
		Hereunder		Shares	%
Celgene Corporation	3,222,997	3,365,854	(1)	0	--
Alere Financial LLC(2)	10,453	10,453		0	--
Alere Financial Partners LLC	6,000	4,285	(3)	2,429	*
Frank A Bonsal, Jr.	28,049	29,478	(4)	0	--
Boodell Value Capital Master Fund LP	426,491	294,774	(5)	146,003	*
Broadfin Healthcare Master Fund, LTD	1,545,296	1,645,296	(6)	0	--
LCI Capital LLC	154,007	34,285	(7)	125,436	*
David M. Knott	209,059	209,059		0	--
Neal Goldman	104,529	104,529		0	--
Perceptive Advisors LLC(8)	836,237	836,237		0	--
David B. Musket	161,670	173,098	(9)	0	--
ProMed Partners, L.P.	56,103	58,961	(10)	0	--
Sio Partners, LP	199,365	215,179	(11)	0	--
Sio Partners QP, LP	34,604	37,335	(12)	0	--
Sio Partners Offshore, LTD	117,947	127,973	(13)	0	--
ADA Partners, LP	214,285	257,142	(14)	0	--
Perceptive Life Sciences Master Fund LTD	231,071	277,285	(15)	0	--
Titan Perc, Ltd.	54,643	65,572	(16)	0	--
Steve Lau	7,143	8,572	(17)	0	--
Michael Emmerman	14,286	17,143	(18)	0	--
J. Goldman Master Fund	894,916	85,715	(19)	823,487	5.1%
Kenneth M. Kahn	7,143	8,572	(20)	0	--

*Less than 1%

- Comprised of 2,386,760 shares of common stock, warrants to purchase 836,237 shares of common stock and
- (1) warrants to purchase 142,857 shares of common stock that become exercisable on October 15, 2014. Celgene Corporation is a publicly traded corporation listed on the Nasdaq Stock Market.
 - (2) Adam Levy, as a member of Alere Financial LLC, has voting and investment control over the shares of common stock beneficially owned by Alere Financial LLC.
Comprised of 3,571 shares of common stock and warrants to purchase 714 shares of common stock that become exercisable on October 15, 2014. Adam Levy and William Odenthal, as members of Alere Financial Partners, LLC, have voting and investment control over the shares of common stock beneficially owned by Alere Financial Partners, LLC.
 - (3) Comprised of 28,049 shares of common stock and warrants to purchase 1,429 shares of common stock that become exercisable on October 15, 2014.
Comprised of 280,488 shares of common stock and warrants to purchase 14,286 shares of common stock that become exercisable on October 15, 2014. Boodell & Company GP LLC is the general partner of Boodell Value Capital Master Fund LP. Peter T. Boodell, as a managing member of Boodell & Company GP LLC, has voting and investment control over the shares of common stock beneficially owned by Boodell Value Capital Master Fund LP.
 - (5) Comprised of 1,545,296 shares of common stock and warrants to purchase 100,000 shares of common stock that become exercisable on October 15, 2014. Broadfin Capital, LLC is the investment adviser to Broadfin Healthcare Master Fund, LTD. Kevin Kotler is the managing member of Broadfin Capital, LLC and has investment and voting control over the shares of common stock beneficially owned by Broadfin Healthcare Master Fund LTD.
 - (6) Comprised of 28,571 shares of common stock, warrants to purchase 5,714 shares of common stock that become exercisable on October 15, 2014. Mark Chen, as managing member, has voting and investment control over the shares of common stock beneficially owned by LCI Capital LLC.
 - (7) Joseph Edelman, as managing member of Perceptive Advisors LLC, has voting and investment control over the shares of common stock beneficially owned by Perceptive Advisors LLC.
 - (8) Comprised of 161,670 shares of common stock and warrants to purchase 11,428 shares of common stock that become exercisable on October 15, 2014.
 - (9) Comprised of 56,103 shares of common stock and warrants to purchase 2,858 shares of common stock that become exercisable on October 15, 2014. David B. Musket, as general partner, had voting and investment control over the shares of common stock beneficially owned by ProMed Partners, LP.
 - (10)

- (11) Comprised of 199,365 shares of common stock and warrants to purchase 15,814 shares of common stock that become exercisable on October 15, 2014. Sio GP, LLC is the general partner of Sio Partners, LP. Michael Castor, as portfolio manager of Sio GP, LLC, has voting and investment control over the shares of common stock beneficially owned by Sio Partners, LP.
- (12) Comprised of 34,604 shares of common stock and warrants to purchase 2,731 shares of common stock that become exercisable on October 15, 2014. Sio GP, LLC is the general partner of Sio Partners QP, LP.. Michael Castor, as portfolio manager of Sio GP, LLC, has voting and investment control over the shares of common stock beneficially owned by Sio Partners QP, LP.
- (13) Comprised of 117,947 shares of common stock and warrants to purchase 10,026 shares of common stock that become exercisable on October 15, 2014. Michael Castor, as managing member, has voting and investment control over the shares of common stock beneficially owned by Sio Partners Offshore, LTD.
- (14) Comprised of 214,285 shares of common stock and warrants to purchase 42,857 shares of common stock that become exercisable on October 15, 2014. ADA Partners GP, LLC is the general partner of ADA Partners, LP. Andrew Africk, as managing member of ADA Partners GP, LLC, has voting and investment control over the shares of common stock beneficially owned by ADA Partners, LP.
- (15) Comprised of 231,071 shares of common stock and warrants to purchase 46,214 shares of common stock that become exercisable on October 15, 2014. Joseph Edelman, as Chief Executive Director, has voting and investment control over the shares of common stock beneficially owned by Perceptive Life Sciences Master Fund LTD .
- (16) Comprised of 54,643 shares of common stock and warrants to purchase 10,929 shares of common stock that become exercisable on October 15, 2014. Joseph Edelman has voting and investment control over the shares of common stock beneficially owned by Titan Perc, Ltd. under the Investment Management Agreement entered into on May 23, 2013.
- (17) Comprised of 7,143 shares of common stock and warrants to purchase 1,429 shares of common stock that become exercisable on October 15, 2014.
- (18) Comprised of 14,286 shares of common stock and warrants to purchase 2,857 shares of common stock that become exercisable on October 15, 2014.
- (19) Comprised of 71,429 shares of common stock and warrants to purchase 14,286 shares of common stock that become exercisable on October 15, 2014. J. Goldman & Co., L.P. is the investment manager of J. Goldman Master Fund L.P. Jay G. Goldman, as president of J. Goldman & Co. L.P., has voting and investment control over the shares of common stock beneficially owned by J. Goldman Master Fund L.P.
- (20) Comprised of 7,143 shares of common stock and warrants to purchase 1,429 shares of common stock that become exercisable on October 15, 2014.

PLAN OF DISTRIBUTION

We or the selling shareholders may offer and sell the securities in any one or more of the following ways:

- to or through underwriters, brokers or dealers (acting as agent or principal);
- directly to one or more other purchasers;
- upon the exercise of rights distributed or issued to our security holders;
- through a block trade in which the broker or dealer engaged to handle the block trade will attempt to sell the securities as agent, but may position and resell a portion of the block as principal to facilitate the transaction;
 - in “at the market” offerings within the meanings of Rule 415(a)(4) under the Securities Act of 1933 or through a market maker or into an existing market, on an exchange, or otherwise;
- directly to purchasers, through a specific bidding or auction process, on a negotiated basis or otherwise;
- through agents on a best-efforts basis;
- through any other method permitted pursuant to applicable law; or
- otherwise through a combination of any of the above methods of sale.

In addition, we or the selling shareholders may enter into option, share lending or other types of transactions that require us or such selling shareholders, as applicable, to deliver shares of common stock to an underwriter, broker or dealer, who will then resell or transfer the shares of common stock under this prospectus. We or the selling shareholders may also enter into hedging transactions with respect to our securities or the securities of such selling shareholders, as applicable. For example, we or the selling shareholders may:

- enter into transactions involving short sales of the shares of common stock by underwriters, brokers or dealers;

·sell shares of common stock short and deliver the shares to close out short positions;

·enter into option or other types of transactions that require us or the selling shareholders, as applicable, to deliver shares of common stock to an underwriter, broker or dealer, who will then resell or transfer the shares of common stock under this prospectus; or

·loan or pledge the shares of common stock to an underwriter, broker or dealer, who may sell the loaned shares or, in the event of default, sell the pledged shares.

Any selling shareholder will act independently of us in making decisions with respect to the timing, manner and size of each sale of shares of common stock covered by this prospectus.

We or the selling shareholders may enter into derivative transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement indicates, in connection with those derivatives, the third parties may sell securities covered by this prospectus and the applicable prospectus supplement, including in short sale transactions. If so, the third party may use securities pledged by us or such selling shareholders, as applicable, or borrowed from us, such selling shareholders or others to settle those sales or to close out any related open borrowings of stock, and may use securities received from us or selling shareholders in settlement of those derivatives to close out any related open borrowings of stock. The third party in such sale transactions will be an underwriter and, if not identified in this prospectus, will be identified in the applicable prospectus supplement (or a post-effective amendment). In addition, we or the selling shareholders may otherwise loan or pledge securities to a financial institution or other third party that in turn may sell the securities short using this prospectus. Such financial institution or other third party may transfer its economic short position to investors in our securities or the securities of such selling shareholders, as applicable, or in connection with a concurrent offering of other securities.

Shares of common stock may also be exchanged for satisfaction of the selling shareholders' obligations or other liabilities to their creditors. Such transactions may or may not involve brokers or dealers.

If we or the selling shareholders use any underwriter, we will provide a prospectus supplement that will name any underwriter involved in the offer and sale of the securities. The prospectus supplement will also set forth the terms of the offering, including:

- the purchase price of the securities and the proceeds we or such selling shareholders, as applicable, will receive from the sale of the securities;
- any underwriting discounts and other items constituting underwriters' compensation;
- any public offering or purchase price and any discounts or commissions allowed or re-allowed or paid to dealers;
- any commissions allowed or paid to agents;
- any securities exchanges on which the securities may be listed;
- the method of distribution of the securities;
- the terms of any agreement, arrangement or understanding entered into with the underwriters, brokers or dealers; and
- any other information we think is important.

If underwriters or dealers are used in the sale, the securities will be acquired by the underwriters or dealers for their own account. The securities may be sold from time to time by us or the selling shareholders in one or more transactions:

- at a fixed price or prices, which may be changed;
- at market prices prevailing at the time of sale;

- at prices related to such prevailing market prices;

- at varying prices determined at the time of sale; or

- at negotiated prices.

Such sales may be effected:

- in transactions on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale;

- in transactions in the over-the-counter market;

- in block transactions in which the broker or dealer so engaged will attempt to sell the securities as agent but may position and resell a portion of the block as principal to facilitate the transaction, or in crosses, in which the same broker acts as an agent on both sides of the trade;

- through the writing of options; or
- through other types of transactions.

The securities may be offered to the public either through underwriting syndicates represented by one or more managing underwriters or directly by one or more of such firms. Unless otherwise set forth in the prospectus supplement, the obligations of underwriters or dealers to purchase the securities offered will be subject to certain conditions precedent and the underwriters or dealers will be obligated to purchase all the offered securities if any are purchased. Any public offering price and any discount or concession allowed or reallocated or paid by underwriters or dealers to other dealers may be changed from time to time.

We may also make direct sales through subscription rights distributed to our existing stockholders on a pro rata basis, which may or may not be transferable. In any distribution of subscription rights to our stockholders, if all of the underlying securities are not subscribed for, we may then sell the unsubscribed securities directly to third parties or may engage the services of one or more underwriters, dealers or agents, including standby underwriters, to sell the unsubscribed securities to third parties. In addition, whether or not all of the underlying securities are subscribed for, we may concurrently offer additional securities to third parties directly or through underwriters, dealers or agents.

The selling shareholders might not sell any shares of common stock under this prospectus. In addition, any shares of common stock covered by this prospectus that qualify for sale pursuant to Rule 144 under the Securities Act of 1933 may be sold under Rule 144 rather than pursuant to this prospectus.

The securities may be sold directly by us or the selling shareholders or through agents designated by us or such selling shareholders, as applicable, from time to time. Any agent involved in the offer or sale of the securities in respect of which this prospectus is delivered will be named, and any commissions payable by us or such selling shareholders, as applicable, to such agent will be set forth in, the prospectus supplement. Unless otherwise indicated in the prospectus supplement, any such agent will be acting on a best efforts basis for the period of its appointment.

Offers to purchase the securities offered by this prospectus may be solicited, and sales of the securities may be made by us or by selling shareholders directly to institutional investors or others, who may be deemed to be underwriters within the meaning of the Securities Act of 1933 with respect to any resale of the securities. The terms of any offer made in this manner will be included in the prospectus supplement relating to the offer.

If indicated in the applicable prospectus supplement, underwriters, dealers or agents will be authorized to solicit offers by certain institutional investors to purchase securities from us pursuant to contracts providing for payment and delivery at a future date. Institutional investors with which these contracts may be made include, among others:

- commercial and savings banks;

- insurance companies;

- pension funds;

- investment companies; and

- educational and charitable institutions.

In all cases, these purchasers must be approved by us or the selling shareholders, as applicable. Unless otherwise set forth in the applicable prospectus supplement, the obligations of any purchaser under any of these contracts will not be subject to any conditions except that (a) the purchase of the securities must not at the time of delivery be prohibited under the laws of any jurisdiction to which that purchaser is subject, and (b) if the securities are also being sold to underwriters, we or the selling shareholders, as applicable, must have sold to these underwriters the securities not subject to delayed delivery. Underwriters and other agents will not have any responsibility in respect of the validity or performance of these contracts.

Some of the underwriters, dealers or agents used by us or the selling shareholders in any offering of securities under this prospectus may be customers of, engage in transactions with, and perform services for us or such selling shareholders, as applicable, or affiliates of ours or theirs, as applicable, in the ordinary course of business. Underwriters, dealers, agents and other persons may be entitled under agreements which may be entered into with us or the selling shareholders to indemnification against and contribution toward certain civil liabilities, including liabilities under the Securities Act of 1933, as amended, and to be reimbursed by us or such selling shareholders for certain expenses.

Any securities initially sold outside the U.S. may be resold in the U.S. through underwriters, dealers or otherwise.

Any underwriters to which offered securities are sold by us or the selling shareholders for public offering and sale may make a market in such securities, but those underwriters will not be obligated to do so and may discontinue any market making at any time.

The anticipated date of delivery of the securities offered by this prospectus will be described in the applicable prospectus supplement relating to the offering.

In compliance with the guidelines of the Financial Industry Regulatory Authority, or FINRA, the aggregate maximum discount, commission, agency fees or other items constituting underwriting compensation to be received by any FINRA member or independent broker-dealer will not exceed 8% of the offering proceeds from any offering pursuant to this prospectus and any applicable prospectus supplement.

No FINRA member may participate in any offering of securities made under this prospectus if such member has a conflict of interest under FINRA Rule 5121, including if 5% or more of the net proceeds, not including underwriting compensation, 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 members, unless a qualified independent underwriter has participated in the offering or the offering otherwise complies with FINRA Rule 5121.

To comply with the securities laws of some states, if applicable, the securities may be sold in these jurisdictions only through registered or licensed brokers or dealers. In addition, in some states the securities may not be sold unless they have been registered or qualified for sale or an exemption from registration or qualification requirements is available and is complied with.

LEGAL MATTERS

The validity of the securities offered by this prospectus will be passed upon for us by Haynes and Boone, LLP, New York, New York.

EXPERTS

The financial statements incorporated in this prospectus by reference from our Annual Report on Form 10-K for the fiscal year ended December 31, 2013, filed with the Securities and Exchange Commission on March 24, 2014, have been audited by Marcum LLP, independent registered public accounting firm, and have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the informational requirements of the Securities Exchange Act of 1934, as amended, and in accordance therewith file annual, quarterly and current reports, proxy statements and other information with the Securities and Exchange Commission. Such reports, proxy statements and other information can be read and copied at the Securities and Exchange Commission's public reference facilities at 100 F Street, N.E., Washington, D.C. 20549, at prescribed rates. Please call the Securities and Exchange Commission at 1-800-732-0330 for further information on the operation of the public reference facilities. In addition, the Securities and Exchange Commission maintains a website that contains reports, proxy and information statements and other information regarding registrants that file electronically with the Securities and Exchange Commission. The address of the Securities and Exchange Commission's website is www.sec.gov.

We make available free of charge on or through our website at www.alliqua.com, our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, as soon as reasonably practicable after we electronically file such material with or otherwise furnish it to the Securities and Exchange Commission.

We have filed with the Securities and Exchange Commission a registration statement under the Securities Act of 1933, as amended, relating to the offering of these securities. The registration statement, including the attached exhibits, contains additional relevant information about us and the securities. This prospectus does not contain all of the information set forth in the registration statement. You can obtain a copy of the registration statement, at

prescribed rates, from the Securities and Exchange Commission at the address listed above, or for free at www.sec.gov. The registration statement and the documents referred to below under “Incorporation of Certain Information By Reference” are also available on our website, www.alliqua.com.

We have not incorporated by reference into this prospectus the information on our website, and you should not consider it to be a part of this prospectus.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The Securities and Exchange Commission allows us to “incorporate by reference” the information we have filed with it, which means that we can disclose important information to you by referring you to those documents. The information we incorporate by reference is an important part of this prospectus, and later information that we file with the Securities and Exchange Commission will automatically update and supersede this information. We incorporate by reference the documents listed below and any future documents (excluding information furnished pursuant to Items 2.02 and 7.01 of Form 8-K) we file with the Securities and Exchange Commission pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, subsequent to the date of this prospectus and prior to the termination of the offering:

- (1) our Annual Report on Form 10-K for the fiscal year ended December 31, 2013, filed with the Securities and Exchange Commission on March 24, 2014;

our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2014 and June 30, 2014 filed with the
(2) Securities and Exchange Commission
on May 12, 2014 and August 11, 2014, respectively;

our Current Reports on Form 8-K or Form 8-K/A filed with the Securities and Exchange Commission on January
(3) 10, 2014, January 22, 2014, February 4, 2014, February 10, 2014, February 20, 2014, March 19, 2014, March 24,
2014, March 31, 2014, April 7, 2014, April 15, 2014, April 16, 2014, April 23, 2014, May 6, 2014, May 12,
2014, June 11, 2014, July 10, 2014, July 21, 2014, July 22, 2014 and September 3, 2014;

the description of our common stock contained in our Definitive Information Statement on Schedule 14C filed
(4) with the Securities and Exchange Commission on May 17, 2010, and any amendment or report filed for the
purpose of updating such description; and

(5) the description of our common stock contained in Form 8-A filed with the Securities and Exchange Commission
on January 27, 2014, and any amendment or report filed for the purpose of updating such description.

All filings filed by us pursuant to the Securities Exchange Act of 1934, as amended, after the date of the initial filing of this registration statement and prior to the effectiveness of such registration statement (excluding information furnished pursuant to Items 2.02 and 7.01 of Form 8-K) shall also be deemed to be incorporated by reference into the prospectus.

You should rely only on the information incorporated by reference or provided in this prospectus. We have not authorized anyone else to provide you with different information. You should not assume that the information in this prospectus is accurate as of any date other than the date of this prospectus or the date of the documents incorporated by reference in this prospectus.

We will provide without charge to each person to whom a copy of this prospectus is delivered, upon written or oral request, a copy of any or all of the information that has been incorporated by reference in this prospectus but not delivered with this prospectus (other than an exhibit to these filings, unless we have specifically incorporated that exhibit by reference in this prospectus). Any such request should be addressed to us at: Alliqua BioMedical, Inc., 2150 Cabot Boulevard West, Langhorne, Pennsylvania 19047, Attention: Brian Posner, Chief Financial Officer or by phone at (215) 702-8550. You may also access the documents incorporated by reference in this prospectus through our website at www.alliqua.com. Except for the specific incorporated documents listed above, no information available on or through our website shall be deemed to be incorporated in this prospectus or the registration statement of which it forms a part.

\$100,000,000

COMMON STOCK

PREFERRED STOCK

DEBT SECURITIES

WARRANTS

SUBSCRIPTION RIGHTS

UNITS

PROSPECTUS

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The fees and expenses payable by us in connection with this registration statement are estimated as follows:

Securities and Exchange Commission Registration Fee	\$18,017
Accounting Fees and Expenses	*
Legal Fees and Expenses	*
Printing Fees and Expenses	*
Transfer Agent Fees and Expenses	*
Miscellaneous Fees and Expenses	*
Total	\$*

*These fees will be dependent on the type of securities offered and number of offerings and, therefore, cannot be estimated at this time. In accordance with Rule 430B under the Securities Act, additional information regarding estimated fees and expenses will be provided at the time information as to an offering is included in a prospectus supplement.

Item 15. Indemnification of Directors and Officers.

Delaware Registrant

Section 145 of the General Corporation Law of the State of Delaware provides, in general, that a corporation incorporated under the laws of the State of Delaware, as we are, may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding (other than a derivative 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 enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding if such person acted in good faith and in a manner such person 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 such person's conduct was unlawful. In the case of a derivative action, a Delaware corporation may indemnify any such person against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection with the defense or settlement of such action or suit if such person acted in good faith and in a

manner such person reasonably believed to be in or not opposed to the best interests of the corporation, except that no indemnification will be made in respect of any claim, issue or matter as to which such person will have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery of the State of Delaware or any other court in which such action was brought determines such person is fairly and reasonably entitled to indemnity for such expenses.

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The certificates of incorporation and bylaws of Alliqua BioMedical, Inc., AquaMed Technologies, Inc. and Choice Therapeutics, Inc. provide that such entities will indemnify their respective directors, officers, employees and agents to the fullest extent and in the manner permitted by the provisions of the General Corporation Law of the State of Delaware, as amended from time to time, subject to any permissible expansion or limitation of such indemnification, as may be set forth in any stockholders' or directors' resolution or by contract. Any repeal or modification of these provisions approved by such entity's respective stockholders will be prospective only and will not adversely affect any limitation on the liability of any of such entity's directors or officers existing as of the time of such repeal or modification.

We are also permitted to apply for insurance on behalf of any director, officer, employee or other agent for liability arising out of his actions, whether or not the General Corporation Law of the State of Delaware would permit indemnification.

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Item 16. Exhibits.

Exhibit No.	Description
1.1*	Form of Underwriting Agreement
3.1	Certificate of Incorporation of Alliqua BioMedical, Inc. (incorporated by reference to Exhibit No. 3.1 to our Current Report on Form 8-K filed with the Securities and Exchange Commission on June 11, 2014)
3.2	Bylaws (incorporated by reference to Exhibit 3.2 to our Current Report on Form 8-K filed with the Securities and Exchange Commission on June 11, 2014)
3.3	Certificate of Amendment to Certificate of Incorporation of Alliqua BioMedical, Inc. (incorporated by reference to Exhibit No. 3.3 to our Current Report on Form 8-K filed with the Securities and Exchange Commission on June 11, 2014)
4.1***	Form of Common Stock Certificate
4.2*	Certificate of Designation of Preferred Stock
4.3***	Form of Debt Indenture
4.4***	Form of Warrant Agreement and Warrant Certificate
4.5*	Form of Unit Agreement
4.6*	Form of Rights Agreement and Rights Certificate
5.1**	Opinion of Haynes and Boone, LLP
23.1**	Consent of Marcum LLP
23.2**	Consent of Haynes and Boone, LLP (included in Exhibit 5.1)
24.1***	Power of Attorney

* To be filed as an exhibit to a Current Report of the registrant on Form 8-K or other document to be incorporated herein by reference.

** Filed herewith.

*** Previously filed.

Item 17. Undertakings.

The undersigned registrant hereby undertakes:

(a) (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;
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
- (ii) 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;
- (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) above do not apply if the registration statement is on Form S-3 or Form F-3 and the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the SEC 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.

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

(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 Act.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of Langhorne, State of Pennsylvania on September 8, 2014.

**ALLIQUA BIOMEDICAL,
INC.**

By: /s/ David I. Johnson

Name: David I. Johnson
Title: Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement has been signed by the following persons in the listed capacities indicated on September 8, 2014:

Signature	Title
/s/ David I. Johnson David I. Johnson	President, Chief Executive Officer and Director (principal executive officer)
/s/ Brian Posner Brian Posner	Chief Financial Officer, Secretary and Treasurer (principal financial and accounting officer)
* Jerome Zeldis, M.D., Ph.D.	Chairman of the Board of Directors
* Perry A. Karsen	Director
* Joseph Leone	Director
* 	Director

Jeffrey Sklar

* Director

Andrew Africk, J.D.

* Director

Gary Restani

*By: /s/ David I. Johnson
David I. Johnson
Attorney-in-fact

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of Langhorne, State of Pennsylvania on September 8, 2014.

**AQUAMED
TECHNOLOGIES, INC.
CHOICE THERAPEUTICS,
INC.**

By: /s/ David I. Johnson

Name: David I. Johnson
Title: Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement has been signed by the following persons in the listed capacities indicated on September 8, 2014:

Signature	Title
/s/ David I. Johnson David I. Johnson	President, Chief Executive Officer and Director (principal executive officer)
/s/ Brian Posner Brian Posner	Chief Financial Officer, Secretary, Treasurer and Director (principal financial and accounting officer)