Alliqua BioMedical, Inc.
Form 424B5
March 28, 2017

Filed pursuant to Rule 424(b)(5)
Registration No. 333-197844

The information in this preliminary prospectus supplement is not complete and may be changed. A registration statement relating to these securities has been declared effective by the Securities and Exchange Commission. This preliminary prospectus supplement and the accompanying prospectus are not an offer to sell these securities, and we are not soliciting offers to buy these securities, in any state where the offer or sale is not permitted.

PRELIMINARY PROSPECTUS SUPPLEMENT (Subject to Completion) Dated March 28, 2017
(To Prospectus dated September 25, 2014)

Shares

Common Stock

We are offering shares of our common stock. Our common stock is listed for trading on The NASDAQ Capital Market under the symbol "ALQA." On March 27, 2017, the last reported sale price of our common stock was $0.64 per share.

Our business and an investment in our common stock involve significant risks. These risks are described under the caption "Risk Factors" beginning on page S-9 of this prospectus supplement and page 4 of the accompanying prospectus and in the documents incorporated by reference into this prospectus supplement.

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

	Per Share	*Total*
Public offering price	$	$
Underwriting discounts and commissions [(1)]	$	$
Proceeds, before expenses, to us	$	$

(1) In addition, we have agreed to reimburse the underwriter for certain offering-related expenses and to issue the underwriter warrants to purchase common stock. We refer you to "Underwriting" beginning on page S-31 of this prospectus supplement for additional information regarding total underwriting compensation.

Certain of our affiliates have indicated an interest in purchasing up to $190,000 of shares of our common stock in this offering at the public offering price. However, because indications of interest are not binding agreements or commitments to purchase, the underwriter may determine to sell more, fewer or no shares to any potential investor and any potential investor may determine to purchase more, fewer or no shares in this offering.

The underwriter may also purchase up to an additional shares of common stock from us at the public offering price, less the underwriting discounts and commissions, within 30 days of the date of this prospectus supplement to cover over-allotments. If the underwriter exercises this option in full, the total discounts and commissions will be $, and the total net proceeds to us, before expenses, will be $.

The underwriter expects to deliver the shares of common stock against payment in New York, New York, on or about , 2017.

Rodman & Renshaw

A unit of H.C. Wainwright & Co.

The date of this prospectus supplement is , 2017.

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PROSPECTUS SUPPLEMENT

PROSPECTUS

ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement and the accompanying prospectus are part of a registration statement that we filed with the U.S. Securities and Exchange Commission utilizing a "shelf" registration process. This document is in two parts. The first part is this prospectus supplement, which describes the specific terms of this offering and also adds to and updates information contained in the accompanying prospectus and the documents incorporated by reference herein. The second part, the accompanying prospectus, provides more general information. Generally, when we refer to this prospectus, we are referring to both parts of this document combined. To the extent there is a conflict between the information contained in this prospectus supplement and the information contained in the accompanying prospectus or any document incorporated by reference therein filed prior to the date of this prospectus supplement, you should rely on the information in this prospectus supplement; provided that if any statement in one of these documents is inconsistent with a statement in another document having a later date—for example, a document incorporated by reference in the accompanying prospectus—the statement in the document having the later date modifies or supersedes the earlier statement.

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

You should rely only on the information contained in this prospectus supplement, the accompanying prospectus, any free writing prospectus or document incorporated by reference herein. We have not authorized, and the underwriter has not authorized, anyone to provide you with different or additional information. The information contained in this prospectus supplement, the accompanying prospectus, any free writing prospectus or document incorporated by reference herein or therein is accurate only as of the respective dates thereof, regardless of the time of delivery of this prospectus supplement and the accompanying prospectus or of any sale of our common stock. Our business, financial condition, results of operations and prospects may have changed since those dates. It is important for you to read and consider all information contained in this prospectus supplement and the accompanying prospectus, including the documents incorporated by reference herein and therein, in making your investment decision. You should also read and consider the information in the documents to which we have referred you in the sections entitled "Where You Can Find More Information" and "Incorporation of Certain Information By Reference" in this prospectus supplement and in the accompanying prospectus, respectively.

We are offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the accompanying prospectus and the offering

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

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

All references in this prospectus supplement and the accompanying prospectus to “Alliqua,” the “Company,” “we,” “us,” “our,” or similar references refer to Alliqua BioMedical, Inc., a Delaware corporation, and its subsidiaries taken as a whole, except where the context otherwise requires or as otherwise indicated.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information about us, this offering and information appearing elsewhere in this prospectus supplement, in the accompanying prospectus and in the documents incorporated by reference herein and therein. This summary is not complete and does not contain all the information you should consider before investing in our common stock pursuant to this prospectus supplement and the accompanying prospectus. Before making an investment decision, to fully understand this offering and its consequences to you, you should carefully read this entire prospectus supplement and the accompanying prospectus, and any free writing prospectus we have authorized for use in connection with this offering, including "Risk Factors," the financial statements, and related notes, and the other information incorporated by reference herein and therein.

Company Overview

We are a regenerative technologies company that commercializes differentiated regenerative medical products which assist the body in the repair or replacement of soft tissue. Through our sales and distribution network, together with our proprietary products, we believe we offer solutions that allow clinicians to utilize the latest advances in regenerative technologies to bring improved patient outcomes to their practices. Our contract manufacturing business provides custom hydrogels to the OEM market.

Products and Services

Our commercial wound care portfolio currently consists of three product categories: wound bed preparation, human biologics and antimicrobial protection. We currently market MIST® Ultrasound Healing Therapy ("MIST Therapy"), which uses painless, noncontact low-frequency ultrasound to promote healing, Biovance® Amniotic Membrane Allograft ("Biovance") and Interfyl™ Human Connective Tissue Matrix ("Interfyl"), which are human biologic regenerative technologies, and TheraBond 3D®, which is an advanced dressing incorporating our proprietary TheraBond 3D® Antimicrobial Barrier Systems ("TheraBond") technology. We seek to broaden this product portfolio by identifying, acquiring and integrating technologies and products that enhance our product portfolio while diversifying our customer base and growing our sales footprint. In addition, we maintain our legacy contract manufacturing business, which provides custom hydrogels to the OEM market.

Wound Bed Preparation

On May 29, 2015, we completed our acquisition of Celleration, Inc. ("Celleration"), a medical device company focused on developing and commercializing the MIST Therapy therapeutic ultrasound platform for the treatment of acute and chronic wounds. MIST Therapy is a painless, noncontact, low-frequency ultrasound delivered through a saline mist medium to the wound bed. The MIST Therapy system and UltraMIST® System ("UltraMIST") consist of a portable countertop generator and handheld transducer. Attached to the transducer is a single-use disposable applicator, which includes an inlet for sterile saline. As the device is activated, the saline is introduced to the head of the transducer where it is atomized. This saline mist is the medium allowing the ultrasonic energy to be efficiently transmitted to the wounded area without direct contact of the device. The energy delivery via a fluid mist has been described as painless and often pain-relieving for the patient. The disposable applicator is designed for a single use only, to avoid any potential of contamination from patient to patient. Unlike most wound therapies that are limited to treating the wound surface, we have evidence that MIST Therapy sound wave energy promotes healing and reduces bacterial bioburden.

Human Biologics

In November 2013, we entered into a license, marketing and development agreement with Anthrogenesis Corporation d/b/a Celgene Cellular Therapeutics ("CCT"), an affiliate of Celgene Corporation, pursuant to which CCT granted us an exclusive, royalty-bearing license in its intellectual property related to certain placental based products for wound care and wound management, including those made from extracellular matrix ("ECM") derived from the human placenta, and Biovance, a decellularized and dehydrated allograft produced from human amniotic membrane for the management of non-infected partial- and full-thickness wounds. On May 5, 2015, the license agreement was amended, pursuant to which we received the additional right to develop and market CCT's connective tissue matrix product known as Interfyl, our latest regenerative technology. In February 2016, Human Longevity Inc. ("HLI"), a genomics-based, technology-driven company, acquired the assets of CCT related to ECM, Biovance and Interfyl, among other select assets. All of CCT's rights and obligations under the license agreement were assigned to HLI in connection with this acquisition. The initial term of the license agreement ends on November 14, 2023, unless sooner terminated pursuant to the termination rights under the license agreement, and will extend for additional two-year terms unless either party gives written notice within a specified period prior to the end of a term. The license agreement is terminable on a product-by-product basis, and not with respect to the entire license agreement (i) by either HLI or us, if we fail to meet certain sales thresholds, and (ii) by either party upon written notice if outside legal counsel recommends discontinuance of commercialization of a product because of significant safety, legal, or economic risk as a result of a claim, demand or action or as a result of a change in the interpretation of law by a governmental or regulatory authority.

The license agreement permits us to commercialize Biovance in the United States. The development and application of the intellectual property covered under the license agreement is managed by a joint steering committee, composed of members of our company and HLI. We pay HLI annual license fees, designated amounts when certain milestone events occur and royalties on all sales of licensed products, with such amounts being variable and contingent on various factors. On September 30, 2014, the license agreement was amended to give us the exclusive right to market Biovance for podiatric and orthopedic applications.

In connection with the Biovance products, on November 14, 2013, we also entered into a supply agreement with CCT, as subsequently amended on each of April 10, 2014 and September 30, 2014, pursuant to which CCT agreed to supply us with our entire requirement of Biovance for distribution and sale in the United States. On April 10, 2014, we and CCT entered into a supply agreement for ECM, on substantially the same terms as the supply agreement for Biovance. On April 23, 2014, we initiated our sales and marketing efforts for Biovance at the Spring 2014 Symposium on Advanced Wound Care and had our first commercial sale on May 1, 2014. In February 2016, HLI assumed all of CCT's rights and obligations under the supply agreement in connection with the acquisition and the assignment of the license agreement.

Biovance and Interfyl are derived from the placenta of healthy, full-term pregnancies. Both Biovance and Interfyl are regulated by the U.S. Food and Drug Administration ("FDA") under Section 361 of the Public Health Service Act ("PHS Act") as a 361 HCT/P, or human tissue product. Human tissues contain collagen, fibronectin, and other proteins and biochemicals that support healing. These important components are maintained in their native architecture throughout HLI's processing. However, essentially no cells are contained in the finished products (Biovance and Interfyl are decellularized), which is different from other placenta-based products, and this decellularization together with the gentle minimal manipulation of the tissues contribute to minimization of irritation and inflammation related to immune responses that can interfere with healing. When the scaffold or extracellular matrix of Biovance and Interfyl is placed in a wound or an area with damaged or deficient soft tissue, it can serve as a platform that allows the body's own cells to migrate into the matrix and attach. Once attached, the cells release growth factors to signal other activities to progress healing.

Biovance is intended for use as a biological membrane covering, that provides extracellular matrix while supporting the repair of damaged tissue. As a barrier membrane, Biovance is intended to protect the underlying tissue and preserve tissue plane boundaries with minimized adhesion or fibrotic scarring. Indications include, but are not limited to, surgical covering, wrap or barrier, application to partial- and full-thickness, acute and chronic wounds (such as, traumatic and complex wounds, burns, surgical and Mohs surgery sites; and diabetic, venous, arterial, pressure and other ulcers), including wounds with exposed tendon, muscle, bone or other vital structures.

We believe Interfyl treats deep wounds or soft tissue voids for which a sheet format such as Biovance is not as well suited. Interfyl is indicated for the replacement or supplementation of damaged or inadequate integumental soft tissue.

There are podiatric and orthopedic applications, as well as wound management opportunities for homologous use of Interfyl. In connection with the Interfyl products, on April 15, 2016, we entered into a supply agreement with HLI, pursuant to which HLI agreed to supply us with our entire requirements of Interfyl for distribution and sale in the United States. In September 2016, we announced the commercial introduction of Interfyl in the United States and had our first commercial sale. We offer Interfyl in both particulate and flowable forms. In these forms, Interfyl can be used to fill voids and correct defects in soft tissue, providing mechanical and structural support to facilitate the tissue repair process or replace missing or inadequate soft tissue.

Interfyl is intended for use as the replacement or supplementation of damaged or inadequate integumental tissue. Indications include, but are not limited to, treatment of soft tissue voids, correction of soft tissue defects, soft tissue augmentation during repair of dehisced or complicated surgical closures and repair of small surgical defects resulting from either medical or surgical conditions including those with exposed vital structures (bone, tendon, ligament, or nerve). Interfyl is also intended for use as the replacement or supplementation of damaged or inadequate integumental tissue. Indications include, but are not limited to: augmentation of deficient/inadequate soft tissue and treatment of deep dermal wounds; surgical wounds; soft tissue voids as a result of tunneling wounds, fistula tracts, or dermal undermining–including those with exposed vital structures (bone, tendon, ligament, or nerve).

Any further development and commercialization of ECM is not planned by us at this time.

Antimicrobial Protection

In May 2014, we acquired Choice Therapeutics, Inc. (“Choice”), a provider of innovative wound care products using proprietary TheraBond 3D® Antimicrobial Barrier Systems. The TheraBond product line includes contact dressings, island dressings and wraps. Based on a proprietary manufacturing process, silver is bonded to the entire surface of the nylon fibers of the TheraBond dressing. When the TheraBond products are placed on the wound, bioactive ionic silver is released at a controlled rate. Used largely in burn care, we believe TheraBond promotes an optimal wound healing environment by creating an antimicrobial barrier that helps protect against infection. With its one-piece construction and unique struts between the contact and outer layers, TheraBond enables efficient transfer of fluid and exudate (excess wound fluid) away from the wound and into an absorptive outer dressing, while providing rapid, sustained antimicrobial protection.

Contract Manufacturing

In connection with our legacy contract manufacturing business; 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 specialize in custom gels by capitalizing on proprietary manufacturing technologies. 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, moisture vapor transmission rate (a measure of the passage of water vapor through a substance) and release rate) while maintaining product integrity. Additionally, we have the manufacturing ability to offer broad choices in the selection of liners onto which the gels are coated. Consequently, our customers are able to determine tolerances in moisture vapor transmission rate and active ingredient release rates while personalizing color and texture.

Planned Products and Services

We intend to continue to expand our existing product offerings through the licensing of products and acquisitions. We believe that our management team will be able to successfully integrate and leverage acquired products so we will have a more comprehensive suite of wound care products. We believe acquiring a product with established sales channels would also help us market our existing products. In evaluating potential acquisition targets, we are looking for technology platforms which enhance our current products, have revenue associated with the technology where possible, and have a strong value proposition in today's health care climate, among other factors.

In addition to expanding our product offerings through licenses and acquisitions, we also intend to modify our existing products through the expansion of customer options (e.g. additional offerings in different sizes and shapes) and potentially expand into new indications for use of our existing regenerative technologies. As our products, with the exception of the ECM suite, are already cleared or do not require clearance by the FDA, we believe these types of modifications can be made with minor regulatory delay. We believe that these improvements and additional options will enhance our reputation and potentially attract new customers.

Growth Strategy

We intend to grow our business by pursuing the following strategies:

- *Strategic Acquisitions.* We intend to broaden our product portfolio by identifying, acquiring and integrating technologies and products that enhance our product portfolio while diversifying our customer base and growing our sales footprint. In May 2015, we acquired Celleration and added the MIST Therapy to our product portfolio.

- *Expand our Sales Capabilities*. We intend to increase our sales resources through the greater engagement of independent contractors, as well as other distribution partners. We believe this increase in sales capabilities will increase awareness of our products and help generate increased sales.

- *Focused Sales Efforts*. We expect to focus an increased portion of our sales representatives in the hospital surgical area. We also plan on focusing sales efforts for our MIST Therapy products in the areas such as deep tissue injuries and venous leg ulcers.

- *Grow our Business through New Product Introductions.* We intend to grow our business by expanding our existing product offerings. We may have the opportunity to obtain commercial rights for potential new products from third parties. In addition, we may also have the opportunity to modify our existing products through life cycle management and through other verticals.

- *Expand into Surgical Specialties*. We intend to seek potential partners to expand the use of our products into other surgical specialties.

- *Increased Reimbursement Coverage*. We intend to continue to increase government and commercial insurance reimbursement coverage for our products.

Industry and Markets

According to medical market research firm BioMedGPS, LLC SmartTRAK™ data, the U.S. market for wound care management products, which had revenues of approximately $5.9 billion in 2015, is expected to grow to $7.6 billion by 2019, which is a compound annual growth rate of 6% for 2015 to 2019. Growth in the U.S. wound care market will likely come from new therapies that result in decreasing healing times and subsequent cost savings and a growing

focus on special populations such as diabetics and the obese.

We intend to target four specific market segments within the wound care industry:

- **Diabetic Ulcers**. According to the National Diabetes Clearinghouse ("National Diabetes Fact Sheet, 2014" available at www.cdc.gov), there are over 29 million diabetics in the U.S., or more than 9.3% of the U.S. population. Almost 11.8 million people over the age of 65 are diabetic, which equates to almost 26% of all people in this age group. Furthermore, more than 60% of nontraumatic lower-limb amputations occur in people with diabetes. A study published by Wild, et. al. (*Diabetes Care*, May 2004) estimates that the worldwide number of diabetics is projected to be 366 million people by the year 2030. Boulton, et. al. ("Neuropathic Diabetic Foot Ulcers," *New England Journal of Medicine*, July 2004) reported that diabetic foot ulcers (DFUs) develop in approximately 15% of patients with diabetes and precede 84% of all diabetes-related lower leg amputations. We believe that our wound care products can aid in the healing of these diabetic foot ulcers, thereby lessening the need for amputation.

- **Pressure Ulcers**. Dorner, et. al. ("The Role of Nutrition in Pressure Ulcer Prevention and Treatment," *The National Pressure Ulcer Advisory Panel*, 2009) stated that according to The Joint Commission, more than 2.5 million patients in U.S. acute-care facilities suffer from pressure ulcers. Dorner, et. al. also stated that the prevalence of pressure ulcers in the U.S. is widespread in all settings, with estimates of 10% to 18% in acute care and 2.3% to 28% in long-term care. The study further noted that these pressure ulcers can reduce overall quality of life and may also contribute to premature mortality in some patients, therefore any intervention that may help to prevent or treat them once they occur is important to reduce the cost of pressure ulcer care and improve the quality of life for affected individuals. Park-Lee, et. al. ("Pressure Ulcers Among Nursing Home Residents: United States, 2004," *The National Center for Health Statistics Data Brief*, No. 14, February 2009) reported that 35% of nursing home residents with stage 2 or higher pressure ulcers received special wound care by specially trained professionals. We believe that our wound care products can aid in the treatment of pressure sores and ulcers, thereby increasing quality of life and decreasing the amount of time spent in wound care facilities.

- **Venous Stasis Ulcers**. These wounds are believed to occur due to improper functioning of venous valves, usually of the legs. According to the University of Washington Medical Center (available at www.uwmedicine.org/health-library/Pages/venous-stasis-ulcers.aspx), the main risk of venous stasis ulcers is the spread of infection from a persistent wound. Failure to address the condition appropriately could ultimately result in limb loss. As these ulcers are typically small, they are often undertreated, which leads to larger ulcers which require more complex treatments. Brem, et. al. ("Protocol for the Successful Treatment of Venous Ulcers," *American Journal of Surgery*, July 2004) reported in one study that up to 48% of venous ulcers had recurred by the fifth year after healing. These often chronic ulcers affect up to 2.5 million U.S. citizens annually. We believe that our wound care products can aid in the treatment of venous stasis ulcers and increase the quality of life for those affected.

- **Post-Surgical and Burn Dressings**. The study entitled "Number, Rate, and Standard Error of All Listed Surgical and Non-surgical Procedures for Discharges from Short-stay Hospitals, by Selected Procedure Categories: United States, 2009" (Centers for Disease Control and Prevention) reported that in 2009, an estimated 29 million surgical procedures were performed in the U.S. The New York Times (Sack, "Hospital Infection Problem Persists," *The New York Times*, April 13, 2010) cited a report from the Agency for Healthcare Research and Quality in 2010 that the problem of hospital-acquired infections ("HAIs") contributes to an estimated 100,000 deaths annually and concluded that the problem merited "urgent attention". According to the American Burn Association ("Burn Incidence and Treatment in the United States: 2015 Fact Sheet," available at www.ameriburn.org/resources_factsheet.php), an estimated 486,000 people with burn injuries receive medical treatment on an annual basis. If the burn is second degree or worse, medical attention may be required to reduce the risk of infection. We believe that our wound care products can aid in the prevention of HAIs.

Sales and Marketing

We continue to focus on sales and marketing efforts in the United States. As of December 31, 2016, we had 40 employees dedicated to sales, all of whom have experience in the wound care industry. Additionally, we have developed an independent network of agents to sell our wound care products through our extensive channel reach through a network of distributors. In addition, we have assembled a Medical/Surgical Advisory Board to help us target improvements and new applications for our products and assist in our marketing efforts. We also market our advanced wound care products at conferences, trade shows and other educational events.

Customers

One customer accounted for approximately 7% and 10% of our revenue for the years ended December 31, 2016 and 2015, respectively. This customer is a medical device manufacturer and a consumer of our contract manufacturing products. The decrease in this concentration is due to an increase in product revenue from our regenerative

technologies, which is consistent with our strategy.

Competition

Leading competitors in the tissue-based wound care area that compete with our biologic products, Biovance and Interfyl, include companies such as MiMedx Group, Inc., Osiris Therapeutics, Inc., Organogenesis Inc., Integra LifeSciences Corporation, as well as a significant number of smaller companies.

We believe that MIST Therapy has no direct competition in the advanced wound care market at this time. As a result, we believe that MIST Therapy may compete favorably on the basis of broad application. Notwithstanding the lack of direct competition, we expect many physicians and allied professionals to continue to employ other treatment approaches and technologies to treat chronic and hard-to-heal wounds.

There are several established silver-based wound dressings and other products which are already in the marketplace that compete with TheraBond. These include Acticoat (sold by Smith & Nephew), Aquacel Ag (sold by ConvaTec), and Silvercel (sold by Acelity). We believe that our low cost of sales will enable us to capture market share from our competitors.

Our ability to establish sales in a market with many larger manufacturers may be difficult. We continue to recruit veterans of the medical device industry to leverage our product offerings into the most beneficial distribution channels. Our competitors may still have greater resources to support their products and may not allow us to take any market share from them.

Sources and Availability of Raw Materials; Principal Suppliers

In general, raw materials essential to our businesses are readily available from multiple sources. For reasons of quality assurance, availability, or cost effectiveness, certain components and raw materials are available only from a sole supplier. Our policy is to maintain sufficient inventory of components so that our production will not be significantly disrupted even if a particular component or material is not available for a period of time.

We purchase MIST Therapy applicators and the saline bottles included with each applicator from single sources. We purchase the MIST systems from one supplier. We and our suppliers purchase many of the components and raw materials in manufacturing the MIST products from numerous suppliers in various countries. We have been able to obtain adequate supplies of such raw materials and components and work closely with suppliers to try to ensure continuity of supply while maintaining high quality and reliability.

Under our supply agreement with HLI, we receive the finished goods of Biovance and Interfyl from HLI.

Noble Biomaterials, Inc. is the principal manufacturer utilized in production of our TheraBond dressings. Noble Biomaterials, Inc. utilizes a proprietary and patented manufacturing process. Although we have not experienced significant production delays attributable to supply changes, we believe that developing alternative sources of supply used to make TheraBond would be difficult over a short period of time.

Because we have no direct control over these suppliers, interruptions or delays in the products and services provided by these parties may be difficult to remedy in a timely fashion. In addition, if such suppliers are unable or unwilling to deliver the necessary products or raw materials, we may be unable to redesign or adapt our technology to work without such raw materials or products or find alternative suppliers or manufacturers. In such events, we could experience interruptions, delays, increased costs or quality control problems, or be unable to sell the applicable products, all of which could have a significant adverse impact on our revenue.

Other than as discussed above, we believe that, due to the size and scale of production of our suppliers, there should be adequate supply of raw materials from our manufacturers.

Patents, Proprietary Rights and Trademarks

We own or license trademarks covering our company and our products. Our policy is to file patent applications to protect technology, inventions and improvements that are important to the development of our business. We also rely upon trade secrets and continuing technological innovations to develop and maintain our competitive position.

As of December 31, 2016, we have beneficial ownership of 15 issued U.S. utility patents, 2 issued U.S. design patents, 17 foreign patents, and several pending U.S. and foreign patent applications covering aspects of our MIST Therapy platform. Specifically, the MIST Therapy patent rights cover both medical and device aspects of wound care using non-contact ultrasound, as well as other clinical ultrasound applications.

In November 2013, we entered into a license, marketing and development agreement with CCT, as subsequently amended on each of September 30, 2014 and May 6, 2015, pursuant to which we hold an exclusive, royalty-bearing license in CCT's intellectual property related to certain placental based products, including DRS(ECM), Interfyl and Biovance, to develop and commercialize these products in the United States. In February 2016, HLI assumed all of CCT's rights and obligations under the license agreement in connection with HLI's acquisition of the assets of CCT related to DRS and Biovance, among other select assets. The development and application of the intellectual property covered under the license agreement is managed by a joint steering committee, composed of members of us and HLI. Following the commencement of commercial sales of each licensed product, the license agreement requires us to pay HLI certain annual license fees, royalty payments based on a percentage of net sales, as well as financial and performance milestone payments, subject to the terms and conditions set forth in the license agreement. The initial term of the license agreement expires on November 14, 2023, unless sooner terminated pursuant to the termination rights under the license agreement, and will automatically renew for additional two-year periods unless either party gives written notice within a specified period prior to the end of a term. The license agreement may be terminated (i) by HLI if we or any of our affiliates challenges the validity, enforceability or scope of certain enumerated HLI patents anywhere in the world; (ii) by either party if there is a final decree that a licensed product infringed on the intellectual property of a third party and the parties cannot cure such third party infringement; (iii) by either party for breach and failure to cure such breach of the license agreement; or (iv) by either party if the other party is the subject of insolvency proceedings, either voluntary or involuntary. In addition, the license agreement is terminable on a product-by-product basis, and not with respect to the entire license agreement: (i) by HLI, if we fail to meet certain minimum sales thresholds for the second year of commercial sales, and by either HLI or us if we fail to meet certain

minimum sales thresholds for the third or any subsequent year of commercial sales and (ii) by either party upon written notice if outside legal counsel recommends discontinuance of commercialization of a product because of an actual, threatened, or perceived significant safety, legal, or economic risk as a result of a claim, demand or action or as a result of a change in the interpretation of law by a governmental or regulatory authority. Each year of commercial sales are referred to in the license agreement as "launch years" and the calendar period constituting each launch year for each licensed product is determined in accordance with the terms of the license agreement. See "Risk Factors—If we fail to meet certain minimum sales thresholds for products licensed pursuant to our agreement with HLI, we could lose our right to license such products."

Corporate Information

We are a Delaware corporation that was originally formed in 1997 under the name Zeta Corporation. 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 between us and our wholly-owned Delaware subsidiary, Alliqua BioMedical, Inc., we merged with and into Alliqua BioMedical, Inc. for the purposes of changing our name to Alliqua BioMedical, Inc. and state of domicile from Florida to Delaware.

Our principal executive offices are located at 1010 Stony Hill Road, Suite 200, Yardley, Pennsylvania 19067, our telephone number is (215) 702-8550, and our website is located at www.alliqua.com. Information accessed through our website is not incorporated into this prospectus and is not a part of this prospectus supplement.

THE OFFERING

Issuer	Alliqua BioMedical, Inc.
Common stock offered by us	Shares
Common stock outstanding immediately after this offering	shares (if the underwriter exercises the over-allotment option in full)
Over-allotment option	We have granted the underwriter an option to purchase up to an aggregate of additional shares of our common stock to cover any over-allotments. This option is exercisable, in whole or in part, for a period of 30 days from the date of this prospectus supplement.
Use of proceeds	We plan to use the net proceeds of this offering (i) for working capital and general corporate purposes, and (ii) to pay our monthly payment obligations under the credit agreement and guaranty with Perceptive Credit Opportunities Fund, L.P., dated May 29, 2015 (the "Credit Agreement"), under which, (A) on the last business day of each calendar month following May 29, 2017, we will be required to make monthly principal payments of $225,000, and (B) interest accrued on the outstanding principal amount of the term loan. See "Use of Proceeds" beginning on page S-28 of this prospectus supplement for more information.
Risk factors	You should carefully read and consider the information beginning on page S-9 of this prospectus supplement and page 4 of the accompanying prospectus set forth under the headings "Risk Factors" before deciding to invest in our common stock.
NASDAQ Capital Market symbol	"ALQA"

Certain of our affiliates have indicated an interest in purchasing up to $190,000 of shares of our common stock in this offering at the public offering price. However, because indications of interest are not binding agreements or commitments to purchase, the underwriter may determine to sell more, fewer or no shares to any potential investor and any potential investor may determine to purchase more, fewer or no shares in this offering.

The number of shares to be outstanding after this offering is based on 36,122,025 shares of our common stock outstanding as of March 27, 2017 and excludes as of that date:

- 4,615,407 shares of common stock issuable upon the exercise of currently outstanding warrants with exercise prices ranging from $0.50 to $10.50 and having a weighted average exercise price of $3.47;

- 7,199,286 shares of common stock issuable upon the exercise of currently outstanding options with exercise prices ranging from $0.80 to $26.69 and having a weighted average exercise price of $5.29 per share;

- 229,612 shares of common stock available for future issuance under our 2011 Long-Term Incentive Plan;

- 810,127 shares of common stock available for future issuance under our 2014 Long-Term Incentive Plan (the "2014 Plan"); and

- additional shares of common stock that may be issued to (i) investors who purchased shares of our common stock in a private placement in February 2017 as a result of the "most favored nation" provision in the securities purchase agreement entered into in such private placement, (ii) Perceptive Credit Holdings, L.P. upon exercise of the amended and restated warrant, dated March 7, 2017, pursuant to a weighted average anti-dilution adjustment in such warrant, and (iii) the holders of certain five-year warrants, upon exercise, issued in November 2012, pursuant to a full ratchet anti-dilution adjustment included in such warrants (see "Risk Factors—We may be required to issue additional shares of common stock to the investors who purchased shares of our common stock in a private placement in February 2017 as a result of the "most favored nation" provision in the securities purchase agreement entered into in such private placement and to holders of certain warrants upon exercise, pursuant to anti-dilution provisions in such warrants, which will be dilutive to all of our stockholders, including new investors in this offering.").

Except as otherwise indicated, all information in this prospectus supplement assumes no exercise of the underwriter's overallotment option to purchase additional shares of common stock and no exercise of the underwriter's warrants to be issued to the underwriter in connection with this offering.

RISK FACTORS

An investment in our common stock involves a high degree of risk. Before deciding whether to invest in our common stock, you should consider carefully the risks described below, together with other information in this prospectus supplement, the accompanying prospectus, the information and documents incorporated herein and therein by reference, and in any free writing prospectus that we have authorized for use in connection with this offering. If any of these risks actually occurs, our business, financial condition, results of operations or cash flow could be seriously harmed. This could cause the trading price of our common stock to decline, resulting in a loss of all or part of your investment. The risks and uncertainties described below are not the only ones facing us. Additional risks and uncertainties not presently known to us, or that we currently see as immaterial, may also harm our business. Please also read carefully the section below entitled "Special Note Regarding Forward-Looking Statements."

Risks Related to Our Company

The report of our independent auditors contains an explanatory paragraph as to our ability to continue as a going concern, which could prevent us from obtaining new financing on reasonable terms or at all.

Because we have had recurring losses, negative cash flows from operating activities, limited cash on hand in light of expected expenditures and are in default of our Credit Agreement with Perceptive Credit Opportunities Fund, L.P., the report of Marcum LLP, our independent auditors, with respect to our financial statements at December 31, 2016, and for the year ended December 31, 2016, contains an explanatory paragraph as to our potential inability to continue as a going concern. This opinion indicates that substantial doubt exists regarding our ability to remain in business. Such an opinion may adversely affect our ability to obtain new financing on reasonable terms or at all.

We have experienced significant losses and expect losses to continue for the foreseeable future.

We have incurred annual net losses of $28.2 million and $26.0 million, respectively, during the years ended December 31, 2016 and 2015. As of December 31, 2016, we had an accumulated deficit of $124.3 million. We expect to incur additional operating losses for the foreseeable future. Although we expect sales to continue to increase in 2017 and beyond from our existing product offerings, there can be no assurance our sales will increase or that we will ever be profitable in the future.

We will require additional capital in order to execute the longer term aspects of our business plan.

The implementation of our growth strategy will continue to result in an increase in our fixed cost structure. Due to the time delay between outlays for working capital expenditures, such as costs to acquire rights to additional products, the hiring and training of sales agents and personnel, marketing costs, the purchasing of inventory, the billing and collection of revenue, debt service costs, and diligence costs related to merger and acquisition activities, we expect to have a net cash outflow from operating activities as a result of these expenditures. Future results of operations involve significant risks and uncertainties. Factors that could affect our future operating results and cause actual results to vary materially from expectations include, but are not limited to, potential demand for our products, risks from competitors, regulatory approval of our new products, technological change, and dependence on key personnel.

In order to complete our future growth strategy, additional equity and/or debt financing will be required. If we are unable to raise additional capital or if we encounter circumstances that place unforeseen constraints on capital resources, we will be required to take even stronger measures to conserve liquidity, which may include, but are not limited to, eliminating all non-essential positions and ceasing all marketing efforts. We would have to curtail business development activities and suspend the pursuit of our business plan. There can be no assurance that we will be successful in improving revenues, reducing expenses and/or securing additional capital in sufficient amounts and on favorable terms.

We have a substantial amount of indebtedness under our $13.8 million principal term loan and are in default under the Credit Agreement, which may adversely affect our cash flow and our ability to operate our business.

In order to finance our acquisition of Celleration, on May 29, 2015, we and each of our subsidiaries entered into the Credit Agreement with Perceptive Credit Opportunities Fund, L.P., which provided for a senior, secured term loan with a current principal amount of approximately $13.8 million. The full unpaid principal amount of the term loan will mature on May 29, 2019. Prior to maturity, on the last business day of each calendar month following May 29, 2017, we will be required to make monthly principal payments of $225,000, with any remaining unpaid balance of the term loan being payable in cash on the maturity date. The repayment of the term loan and our obligations under the Credit Agreement are secured by a first priority lien on all of our existing and after acquired tangible and intangible assets, including intellectual property. The Credit Agreement also contains certain restrictions that prohibit us and our subsidiaries from engaging in certain transactions and activities, including but not limited to the following:

- entering into, creating, incurring or assuming any indebtedness of any kind, subject to limited exceptions;
- creating or incurring new liens, subject to certain exceptions;
- entering into new acquisitions or investments in other entities, subject to certain exceptions;
- winding up, liquidating or dissolving;
- merging or consolidating with another person or disposing of assets, subject to certain exceptions;
- entering into inbound or outbound licenses, subject to certain exceptions;
- changing the nature of our core business;
- paying cash dividends; and
- repaying, repurchasing or otherwise acquiring shares of our common stock or other equity securities.

Our ability to meet our expenses, debt obligations and other financial covenants under the Credit Agreement will depend on our future performance, which will be affected by financial, business, economic, regulatory and other factors. We will be unable to control many of these factors. We cannot be certain that our earnings will be sufficient to

allow us to pay the principal and interest on our debt and meet any other obligations. If we do not have enough money to service our debt, we will be required, but may be unable to refinance or restructure all or part of our existing debt, sell assets, borrow money or raise equity on terms acceptable to us, if at all, and the lender could foreclose on its security interest and liquidate some or all of our assets, which would harm our business, financial condition and results of operations.

The Credit Agreement also requires us to meet certain financial covenants. Our ability to meet these financial covenants may be affected by events beyond our control. If, as or when required, we are unable to repay, refinance or restructure our indebtedness under, or amend the covenants contained in, the Credit Agreement, the lender could institute foreclosure proceedings against our assets, which would harm our business, financial condition and results of operations. We are currently in default under the Credit Agreement.

In addition, as a result of our increased level of indebtedness, demands on our cash resources will continue to increase in the future and could, among other things:

- require us to dedicate a large portion of our cash flow from operations to the servicing and repayment of our debt, thereby reducing funds available for working capital, capital expenditures, research and development expenditures and other general corporate requirements;

- limit our ability to obtain additional financing to fund future working capital, capital expenditures, research and development expenditures and other general corporate requirements;

- limit our flexibility in planning for, or reacting to, changes in our business and the industry in which we operate;

- restrict our ability to make strategic acquisitions or dispositions or to exploit business opportunities;

- place us at a competitive disadvantage compared to our competitors that have less debt;

- adversely affect our credit rating, with the result that the cost of servicing our indebtedness might increase and our ability to obtain surety bonds could be impaired;

- adversely affect the market price of our common stock; and

- limit our ability to apply proceeds from an offering or asset sale to purposes other than the servicing and repayment of debt.

We are currently in default under the Credit Agreement, which allows the lender to exercise certain rights and remedies, including, without limitation, declaring the entire outstanding indebtedness under the Credit Agreement of approximately $13.8 million immediately due and payable, imposing a default rate of interest and/or foreclosing on some or substantially all of our assets.

We are currently in default of the Credit Agreement, as a result of our failure to achieve gross revenue of $22,250,000 for the twelve-month period ended September 30, 2016, and $24,600,000 for the twelve-month period ended December 31, 2016. Under an agreement dated January 26, 2017, as amended on March 7, 2017, Perceptive Credit Opportunities Fund, L.P., the lender, agreed to forbear from exercising any rights and remedies related to the default until the earlier of April 30, 2017, or the date when the lender becomes aware of any other default. The remedies available for the lender include, among others, the ability to accelerate and immediately demand payment of the outstanding debt of approximately $13.8 million under the Credit Agreement, to impose a default rate of interest, to foreclose on some or all of our assets, and/or to take possession of or sell some or all of our assets. Were the lender to demand payment of the outstanding debt after expiration of the forbearance period, we would currently have insufficient funds to satisfy that obligation, and the lender’s exercise of its other remedies would have a material adverse effect on our operations and financial condition.

We are exploring initiatives to address solutions to our credit issues, which include a restructuring of the Credit Agreement with the lender and the evaluation and pursuit of various sources of financing including a refinancing.

However, no assurance can be given that we can restructure our Credit Agreement or that additional financing will be available on commercially reasonable terms or at all.

Occurrence of an event of default under the Credit Agreement could result in a material adverse effect on our business, operating results and financial condition, or the loss of our assets as the lender holds a first priority security interest in all of our assets and the assets of our subsidiaries.

Events of default under the Credit Agreement include, but are not limited to, the following:

- failure to pay principal, interest or other amounts, if any, when due;
- any form of bankruptcy or insolvency proceeding instituted by or against us or any of our subsidiaries that is not dismissed in 60 days;
- a default occurring under any debenture, mortgage, credit agreement, indenture or other instrument representing or securing indebtedness in an amount exceeding $250,000;
- we or any of our subsidiaries is party to a change of control;

- the FDA or other governmental authority (i) issues a letter or other communication asserting any of our products lacks a required product authorization, including in respect of CE marks or 510(k)s or 361 HCT/P qualification, or (ii) initiates enforcement action or warning against us, any of our products or manufacturing facilities resulting in the discontinuance of marketing, withdrawal of any material products, or delay in the manufacture of any material products, each lasting for more than 90 days;

- a recall of any product that has generated or is expected to generate at least $1.0 million in revenue in the aggregate over any consecutive twelve (12) month period;

- we or any of our subsidiaries enters into a settlement agreement with the FDA or any other governmental authority that results in aggregate liability as to any single or related series of transactions, incidents or conditions, in excess of $500,000;

- we are in default under our license agreement with HLI or the license agreement is terminated, amended, waived or otherwise modified in a manner materially adverse to the lender's interests; and

- failure to observe or perform any other covenant contained in the Credit Agreement.

Upon occurrence of an event of default under the Credit Agreement, payment of the entire principal amount could be accelerated and become immediately due and payable. The cash that we may be required to pay would most likely come out of our working capital, which may be insufficient to repay the obligation or leave us with insufficient cash to finance our operations. In such event, we may lose some or all of our assets as the lender could foreclose on its security interests and liquidate some or all of these assets, which would harm our business, financial condition and results of operations. We may also be required to file for bankruptcy, sell assets, or cease operations, any of which would put our company, our investors and the value of our common stock, at significant risk.

The pledge of these assets and other restrictions may limit our flexibility in raising capital for other purposes. Because substantially all of our assets are pledged under the Credit Agreement, our ability to incur additional secured indebtedness or to sell or dispose of assets to raise capital may be impaired, which could have an adverse effect on our financial flexibility.

Our goodwill and long-lived assets are subject to potential further impairment, and if those become further impaired, it could materially further the reduction in the value of our assets and increase our net loss for the year in which the write-off occurs.

Our intangible and fixed assets have finite useful lives and are amortized or depreciated over their useful lives on either a straight-line basis or over the expected period of benefit or as revenues are earned from the sales of the related products. The underlying assumptions regarding the estimated useful lives of these intangible assets are reviewed annually and more often if an event or circumstance occurs making it likely that the carrying value of the assets may not be recoverable and are adjusted through accelerated amortization if necessary. Whenever events or changes in circumstances indicate that the carrying value of the assets is not recoverable we test intangible assets for impairment based on estimates of future cash flows. If an intangible asset is considered to be impaired, the amount of the impairment will equal the excess of the carrying value over the fair value of the asset.

As of December 31, 2016, we had $12.0 million in goodwill related to acquisitions, which represents the purchase price we paid in excess of the fair value of the net tangible assets and identifiable intangible assets we acquired. We assess the recoverability of goodwill annually, at the beginning of the fourth quarter of each fiscal year, and between annual tests if an event occurs or circumstances change that would indicate the carrying amount may be impaired. Under Financial Accounting Standards Board guidance for goodwill and other intangible assets, a reporting unit is defined as an operating segment or one level below the operating segment, called a component. However, two or more components of an operating segment will be aggregated and deemed a single reporting unit if the components have similar economic characteristics. We adopted authoritative accounting guidance that allows us to first assess qualitative factors to determine whether it is necessary to perform the more detailed two-step quantitative goodwill impairment test. We perform the quantitative test if the qualitative assessment determined it is more likely than not that a reporting unit’s fair value is less than its carrying amount. We may elect to bypass the qualitative assessment and proceed directly to the quantitative test for any reporting unit. When performing the quantitative test, an impairment loss is recognized if the carrying amount of the reporting unit’s net assets exceeds the estimated fair value of the reporting unit and the carrying amount of reporting unit goodwill is determined to exceed the implied fair value of that goodwill. The estimated fair value of a reporting unit is calculated using a discounted cash flow model. During the year ended December 31, 2016, we recorded an impairment charge of approximately $1.7 million related to our MIST tradename and approximately $9.2 million related to our goodwill.

If actual results differ from the assumptions and estimates used in the goodwill and intangible asset calculations, we could incur further impairment or amortization charges. Any finding that the value of our goodwill and long-lived assets has been further impaired would require us to write off the impaired portion, which could materially reduce the value of our assets and reduce our net income or increase our net loss for the year in which the write off occurs and increase our accumulated deficit, which could contribute to difficulty in raising additional funds.

If we fail to meet certain minimum sales thresholds for products licensed pursuant to our agreement with HLI, we could lose our right to license such products.

Our license agreement with HLI is terminable on a product-by-product basis if we fail to meet certain minimum sales thresholds in the second year or any subsequent year of commercial sales of the licensed products. Each year of commercial sales is referred to in the license agreement as "launch years" and the calendar period constituting each launch year for the licensed product is determined in accordance with the terms of the license agreement, and for the purpose of determining whether the license can be terminated for failure to meet the minimum sales threshold, Biovance and Interfyl are treated on an aggregate basis as if a single licensed product. To maintain our license for Biovance and Interfyl, we must meet a minimum gross sales amount for Biovance and Interfyl in the second year and third year of commercial sales. If we fail to meet the minimum threshold in the second year of commercial sales of a licensed product, we would be able to cure such failure by making a cure payment specified in the license agreement to HLI; provided, however, we do not have the option to make a cure payment, should we fail to meet the minimum threshold for such product in the third year of commercial sales, and HLI may terminate the license agreement with respect to such product. If we do not meet the minimum sales threshold, HLI may terminate the license with respect to Biovance and Interfyl. Even though we are implementing sales and marketing strategies to meet this minimum gross sales amount, no assurance can be given that we will be able to meet the minimum sales threshold for Biovance and Interfyl in the second or third year of commercial sales as required by the license agreement. If we were to lose or otherwise become unable to maintain our right to license Biovance, Interfyl or other products from HLI, it could have a material adverse effect on our business, financial condition and results of operations. In addition, any termination of our right to license Biovance, Interfyl or other products under the license agreement with HLI could trigger an event of default under our Credit Agreement.

Decisions in reimbursement levels by governmental or other third-party payers for our products and procedures using our products may have an adverse impact on acceptance and use of our products.

We believe that our products will be purchased principally by hospitals, physicians and other healthcare providers, which typically bill various third-party payers, such as state and federal healthcare programs (e.g., Medicare and Medicaid), private insurance plans and managed care plans, for the products and services provided to their patients. The ability of our customers to obtain appropriate reimbursement for products and services from third-party payers is critical to the success of our business because reimbursement status affects which products customers purchase and the prices they are willing to pay. In addition, our ability to obtain reimbursement approval in foreign jurisdictions will affect our ability to expand our product offerings internationally.

Third-party payers have adopted, and are continuing to adopt, a number of policies intended to curb rising healthcare costs. These policies include:

- imposition of conditions of payment by foreign, state and federal healthcare programs as well as private insurance plans;
- rules related to how products and services may be marketed; and
- reduction in reimbursement amounts applicable to specific products and services.

Adverse decisions relating to coverage or reimbursement of our products would have an adverse impact on the acceptance of our products and the prices that our customers are willing to pay for them.

We are unable to predict whether foreign, federal, state or local healthcare reform legislation or regulation affecting our business may be proposed or enacted in the future, or what effect any such legislation or regulation would have on our business. Changes in healthcare systems in the United States or internationally in a manner that significantly reduces reimbursement for procedures using our products or denies coverage for these procedures would also have an adverse impact on the acceptance of our products and the prices which our customers are willing to pay for them.

Our future success depends on our ability to retain key executives and to attract, retain and motivate qualified personnel.

We believe that our success will depend, in part, upon our ability to retain our executive officers, including David Johnson, our Chief Executive Officer, Brian M. Posner, our Chief Financial Officer, Nino Pionati our Chief Strategy and Marketing Officer and Bradford C. Barton, our Chief Operating Officer, and other key personnel, and attract additional skilled personnel, which may require substantial additional funds. There can be no assurance that we will be able to find and attract additional qualified employees or retain any such executive officers and other key personnel. Our inability to hire qualified personnel, the loss of services of our executive officers or key personnel, or the loss of services of executive officers or key personnel who may be hired in the future may have a material and adverse effect on our business.

Our strategic business plan may not produce the intended growth in revenue and operating income.

Our strategies include making significant investments in sales and marketing programs to achieve revenue growth and margin improvement targets. If we do not achieve the expected benefit from these investments or otherwise fail to execute on our strategic initiatives, we may not achieve the growth improvement we are targeting and our results of operations may be adversely affected.

Our acquisition strategy may not produce the intended growth in revenue and operating income.

As part of our strategy for growth, we may make acquisitions and enter into strategic alliances such as joint ventures and joint development agreements. However, we may not be able to identify suitable acquisition candidates, complete acquisitions or integrate acquisitions successfully, and our strategic alliances may not prove to be successful. Such

acquisitions could reduce shareholders' ownership, require us to incur debt, expose us to liabilities and result in amortization expenses related to intangible assets with definite lives. In addition, acquisitions involve other risks, including diversion of management resources otherwise available for ongoing development of our business and risks associated with entering new markets with which we have limited experience or where distribution alliances with experienced distributors are not available. Our future profitability may depend in part upon our ability to further develop our resources to adapt to these new products or business areas and to identify and enter into satisfactory distribution networks. Moreover, we may fail to realize the anticipated benefit of any acquisition as rapidly as expected or at all, or the acquired business may not perform in accordance with our expectations. We may also incur significant expenditures in anticipation of an acquisition that is never realized. There can be no assurance that difficulties encountered in connection with acquisitions will not have a material adverse effect on our business, financial condition and results of operations.

Our future success depends upon market acceptance of our existing and future products.

We believe that our success will depend in part upon the acceptance of our existing and future products by the medical community, hospitals and physicians and other health care providers, third-party payers, and end-users. Such acceptance may depend upon the extent to which the medical community and end-users perceive our products as safer, more effective or cost-competitive than other similar products. Ultimately, for our new products to gain general market acceptance, it may also be necessary for us to develop marketing partners for the distribution of our products. There can be no assurance that our new products will achieve significant market acceptance on a timely basis, or at all. Failure of some or all of our future products to achieve significant market acceptance could have a material adverse effect on our business, financial condition, and results of operations.

We operate in a highly competitive industry and face competition from large, well-established medical device manufacturers as well as new market entrants.

Competition from other medical device companies and from research and academic institutions is intense, expected to increase, subject to rapid change and significantly affected by new product introductions and other market activities of industry participants. In addition to competing with universities and other research institutions in the development of products, technologies and processes. We compete with other companies in acquiring rights to products or technologies from those institutions. A number of factors may limit the market acceptance of our products, including the timing of regulatory approvals and market entry relative to competitive products, the availability of alternative products, and the price of our products relative to alternative products, the availability of third party reimbursement and the extent of marketing efforts by third party distributors or agents that we retain. There can be no assurance that our products will receive market acceptance in a commercially viable period of time, if at all. Furthermore, there can be no assurance that we can develop products that are more effective or achieve greater market acceptance than competitive products, or that our competitors will not succeed in developing or acquiring products and technologies that are more effective than those being developed by us, that would render our products and technologies less competitive or obsolete.

Our competitors enjoy several competitive advantages over us, including some or all of the following:

- large and established distribution networks in the United States and/or in international markets;
- greater financial, managerial and other resources for products research and development, sales and marketing efforts and protecting and enforcing intellectual property rights;
- significantly greater name recognition;
- more expansive portfolios of intellectual property rights;
- established relations with physicians, hospitals, other healthcare providers and third party payers;
- products which have been approved by regulatory authorities for use in the United States and/or Europe and which are supported by long-term clinical data; and
- greater experience in obtaining and maintaining regulatory approvals and/or clearances from the FDA and other regulatory agencies.

Our competitors' products will compete directly with our products. In addition, our competitors as well as new market entrants may develop or acquire new treatments, products or procedures that will compete directly or indirectly with our products. The presence of this competition in our market may lead to pricing pressure which would make it more difficult to sell our products at a price that will make us profitable or prevent us from selling our products at all. Our failure to compete effectively would have a material and adverse effect on our business, results of operations and financial condition.

Changes to the FDA approval process or ongoing regulatory requirements could make it more difficult for us to obtain FDA approval of our products or comply with ongoing requirements.

Our products are subject to rigorous pre- and post-approval regulation by the FDA as well as other federal and state authorities. Based on scientific developments, post-market experience, or other legislative or regulatory changes, the current FDA standards of review for approving new medical device and other FDA regulated products are sometimes more stringent than those that were applied in the past. For example, with passage of the Food and Drug Administration Safety and Innovation Act in 2012 (FDASIA), the FDA was required to revisit some of its policies regarding 510(k) devices which resulted in the FDA drafting new guidance for the 510(k) process. The FDA continues to revisit and clarify its guidance regarding 510(k) devices, and such revisions could impact the process for clearing medical devices, determining which devices are eligible for 510(k) clearance, the ability to rescind previously granted 510(k) clearances and additional requirements that may significantly impact the process.

Additionally, we believe that some of our products are regulated under Section 361 of the PHS Act and that as a result no premarket review or approval is required. If the FDA does not agree that one or more of our HCT/P products meet its regulatory criteria for regulation solely as 361 HCT/Ps, our HCT/Ps will be regulated as drugs, devices, and/or biological products, and we could be required to withdraw those products from the market until the applicable approvals are obtained.

We cannot determine what effect changes in regulations or legal interpretations by the FDA or the courts, when and if promulgated or issued, may have on our business in the future. Changes could, among other things, require additional product approvals, different labeling, monitoring of patients, interaction with physicians, education programs for patients or physicians, curtailment of necessary supplies, or limitations on product distribution. These changes, or others required by the FDA could have an adverse effect on the sales of these products, up to and including our inability to sell such products until we may be able to address such requirements. The evolving and complex nature of regulatory science and regulatory requirements, the broad authority and discretion of the FDA and the generally high level of regulatory oversight results in a continuing possibility that from time to time, we will be adversely affected by regulatory actions despite ongoing efforts and commitment to achieve and maintain full compliance with all regulatory requirements.

Should the FDA determine that Biovance and/or Interfyl do not meet regulatory requirements that permit qualifying HCT/Ps to be processed, stored, labeled and distributed without pre-marketing approval, our supplier may be required by the FDA to stop processing and we may be required to stop distributing Biovance and/or Interfyl, or to narrow the indications for which Biovance and/or Interfyl is marketed, which, in turn, could also result in a default under our Credit Agreement.

Each of Biovance and Interfyl is a product derived from human tissue. The FDA has specific regulations governing HCT/Ps. An HCT/P is a product containing or consisting of human cells and/or tissue intended for transplantation into humans. HCT/Ps that meet the criteria for regulation solely under Section 361 of the PHS Act and 21 CFR 1271 are not subject to pre-market clearance or approval requirements, but are subject to post-market regulatory requirements. To be a 361 HCT/P, a product must meet all four of the following criteria:

- it must be minimally manipulated;

- it must be intended for homologous use only;

- it must not be combined with another article; and
- it must not have a systemic effect and not be dependent upon the metabolic activity of living cells for its primary function.

We and HLI believe that each of Biovance and Interfyl qualifies as a 361 HCT/P. The FDA has published several draft guidance documents relating to the regulation of HCT/Ps, including the determination of what constitutes minimal manipulation, and held a public hearing on the subject in September 2016.. We cannot predict whether or when the FDA will publish any final guidance documents. Moreover, guidance documents, even in final form, are not binding and are merely a reflection of the FDA's thinking on a particular issue at the time that the final guidance document is published. Should the FDA finalize these drafts and include a significant change in its policy with respect to 361 HCT/P qualifications, or determine that our marketing claims exceed what would be permitted for a 361 HCT/P product, and either Biovance and/or Interfyl is determined to not qualify as a 361 HCT/P product, we may have to obtain approval or clearance from the FDA before we can continue to market Biovance or Interfyl in the United States. Furthermore, a communication from the FDA asserting that either Biovance or Interfyl does not qualify as a 361 HCT/P product could also trigger an event of default under our Credit Agreement.

Modifications to our current products may require new marketing clearances or approvals or require us to cease marketing or recall the modified products until such clearances or approvals are obtained.

Any modification to an FDA-cleared or approved product that could significantly affect safety or effectiveness, or that would constitute a major change or modification in the product's intended use, requires a new FDA 510(k) clearance or, possibly, a premarket approval. The FDA requires every manufacturer to make its own determination as to whether a modification requires a new 510(k) clearance or premarket approval, but the FDA may review and disagree with any decision reached by the manufacturer. In the future, we may make additional modifications to our products after they have received FDA clearance or approval and, in appropriate circumstances, determine that new clearance or approval is unnecessary. Regulatory authorities may disagree with our past or future decisions not to seek new clearance or approval and may require us to obtain clearance or approval for modifications to our products. If that were to occur for a previously cleared or approved product, we may be required to cease marketing or recall the modified device until we obtain the necessary clearance or approval. Under these circumstances, we may also be subject to significant regulatory fines or other penalties. If any of the foregoing were to occur, our financial condition and results of operations could be negatively impacted.

We and our manufacturers are required to comply with current good manufacturing practices ("cGMPs") and current good tissue practices ("cGTPs") and could be subject to suspensions or product withdrawals if found non-compliant.

We rely on collaborative relationships with third-party contractors to manufacture various aspects of our products. Reliance on third-party contractors subjects us to a number of risks, including regulatory compliance issues. We may be responsible for the failures of our third-party contractors. The FDA regulates the facilities, processes and procedures used to manufacture and market medical products in the United States. Manufacturing facilities must be registered with the FDA and all products made in such facilities must be manufactured in accordance with cGMP, regulations enforced by the FDA. Compliance with cGMP regulations require the dedication of substantial resources and requires significant expenditures. The FDA periodically inspects our manufacturing facilities and those of our contractors. The inspections are generally random, however, and we cannot predict with certainty when the FDA will inspect our facilities or those of our contractors. Any failure of regulatory standards of compliance by us or on the part of our third-party contractors may compel the FDA to take actions to recall products or to suspend, or withdraw one or more of our product approvals. We or our third-party contractors may also be subject to additional FDA actions as identified in the subsequent section. Further, in the event that we need to use an additional contractor or transfer our processes or methods to manufacture our products to an alternative contractor; or if the FDA decides to curtail or cease our operations or cease or curtail our contractor due to manufacturing problems, the FDA's actions could result in product delays which could adversely affect our business, results of operations, and financial condition and cash flow.

We will be subject to ongoing federal and state regulations, and if we fail to comply, our business could be seriously harmed.

Following regulatory marketing clearance or approval of any products that we may develop, we will be subject to continued regulatory review, including review of adverse (drug or device) events or reactions and clinical results that are reported after our products become commercially available. This would include results from any post-marketing tests or continued actions required by a condition of approval. The manufacturing facilities we may use to make any of our products may become subject to periodic review and inspection by the FDA. If a previously unknown problem or problems with a product or a manufacturing and laboratory facility used by us is discovered, the FDA may impose restrictions on that product or on the manufacturing facility, including requiring us to withdraw the product from the market. Any changes to an approved product, including the way it is manufactured or promoted, often requires FDA approval before the product, as modified, can be marketed. In addition, for products we develop in the future, we and our contract manufacturers may be subject to ongoing FDA requirements for submission of safety and other post-market information. If we or any of our contract manufacturers fail to comply with applicable regulatory requirements, a regulatory agency may:

·issue warning letters;

- impose civil or criminal penalties;
- suspend or withdraw our regulatory approval;
- suspend or terminate any of our ongoing clinical trials;
- refuse to approve pending applications or supplements to approved applications filed by us;
- impose restrictions on our operations;
- close the facilities of our contract manufacturers; and/or
- seize or detain products or require a product recall.

Additionally, regulatory review covers our activities in the promotion of our medical products, with significant potential penalties and restrictions for promotion of drugs, devices or tissues for an unapproved use. Sales and marketing programs, such as illegal promotions to health care professionals, are under scrutiny for compliance with various mandated requirements. We are also required to submit information on open and completed clinical trials to public registries and databases. Failure to comply with these requirements could expose us to negative publicity, fines and penalties that could harm our business.

If we violate regulatory requirements at any stage, whether before or after marketing approval is obtained, we may be fined, be forced to remove a product from the market or experience other adverse consequences, including delay, which would materially harm our financial results. Additionally, we may not be able to obtain the labeling claims necessary or desirable for product promotion.

We and our sales personnel, whether employed by us or by others, must comply with various federal and state anti-kickback, self-referral, false claims and reporting and similar laws, any breach of which could cause a material adverse effect on our business, financial condition and results of operations.

Our relationships with physicians, hospitals, other healthcare providers and the marketers of our products are subject to scrutiny under various U.S. federal anti-kickback, self-referral, false claims, physician sunshine and other reporting laws and regulations and similar laws, often referred to collectively as healthcare fraud and abuse laws. Healthcare fraud and abuse laws are complex, and even minor, inadvertent violations can give rise to liability, or claims of

alleged violations. Possible sanctions for violation of these fraud and abuse laws include monetary fines; civil and criminal penalties; exclusion from federal and state healthcare programs, including Medicare, Medicaid, Veterans Administration health programs, workers' compensation programs and TRICARE, the healthcare system administered by or on behalf of the U.S. Department of Defense for uniformed services beneficiaries, including active duty and their dependents, retirees and their dependents; and forfeiture of amounts collected in violation of such prohibitions. Many states have similar, or sometimes broader, fraud and abuse laws that also authorize substantial civil and criminal penalties for violations. Any government investigation or a finding of a violation of these laws would likely result in a material adverse effect on the market price of our common stock, as well as our business, financial condition and results of operations.

The federal Anti-Kickback Statute prohibits any knowing and willful offer, payment, solicitation or receipt of any form of remuneration in return for the referral of an individual or the ordering or recommending of the use of a product or service for which payment may be made by any federal healthcare program, including Medicare. The definition of "remuneration" has been broadly interpreted to include anything of value, including gifts, discounts, the furnishing of supplies or equipment, payments of cash and waivers of payments. States also often have anti-kickback laws which may be broader in scope and apply to referrals and items or services reimbursed by both governmental and non-governmental third-party payers, including private insurers.

The federal Physician Payments Sunshine Act requires certain manufacturers of drugs, devices, biologics and medical supplies that are reimbursable under Medicare, Medicaid or Children's Health Insurance Program to report annually to Centers for Medicare and Medicaid Services information related to payments and other transfers of value to physicians and teaching hospitals, and ownership and investment interests held by physicians and their immediate family members. States also often have analogous laws and regulations, such as state anti-kickback and false claims laws, which may be broader in scope and apply to referrals and items or services reimbursed by both governmental and non-governmental third-party payers, including private insurers; and state transparency and reporting laws, which may require drug, device, and biologics manufacturers to report information to the state related to payments and other transfers of value to physicians and other healthcare providers, price disclosures, or marketing expenditures.

The scope and enforcement of the healthcare fraud and abuse laws is uncertain and subject to rapid change. There can be no assurance that federal or state regulatory or enforcement agencies will not investigate our current or future activities under these laws. Any investigation or challenge could have a material adverse effect on our business, financial condition and results of operations. Any state or federal investigation, regardless of the outcome, could be costly and time-consuming. Additionally, we cannot predict the impact of any changes in these laws, whether these changes are retroactive or will have effect on a going-forward basis only.

Because our business involves arrangements with physicians, hospitals, and healthcare providers, including physicians who consult with us on the design of our products, we could be materially impacted if regulatory or enforcement agencies or courts interpret our financial relationships with healthcare providers who refer, order, or use our products to be in violation of health care fraud and abuse laws. Such governmental action could harm our reputation and the reputations of the healthcare providers that we do business with. In addition, the cost of noncompliance with these laws could be substantial because we could be subject to monetary fines and civil or criminal penalties, and we could also be excluded from state and federal healthcare programs, including Medicare and Medicaid, for non-compliance.

If we are unable to protect our intellectual property rights adequately, we may not be able to compete effectively.

Our success depends in part on our ability to protect the proprietary rights to the technologies used in our products. We rely on patent protection, as well as a combination of trademark laws and confidentiality, noncompetition and other contractual arrangements to protect our proprietary technology. However, these legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep a competitive advantage. Our patents and patent applications, if issued, may not be broad enough to prevent competitors from introducing similar products into the market. Our patents, if challenged or if it attempts to enforce them, may not necessarily be upheld by the courts. In addition, patent protection in foreign countries may be different from patent protection under U.S. laws and may not be favorable to us. Efforts to enforce any of our proprietary rights could be time-consuming and expensive, which could adversely affect our business and prospects and divert management’s attention.

We are dependent on proprietary know-how, and a failure to protect our proprietary know-how would harm our business and operation.

We rely on trade secret protection to protect our interests in proprietary know-how and for processes for which patents are difficult to obtain or enforce. We may not be able to protect our trade secrets adequately. In addition, we rely on non-disclosure and confidentiality agreements with employees, consultants and other parties to protect, in part, trade secrets and other proprietary technology. These agreements may be breached and we may not have adequate remedies for any breach. Moreover, others may independently develop equivalent proprietary information, and third parties may otherwise gain access to our trade secrets and proprietary knowledge. Any disclosure of confidential data into the public domain or to third parties could allow competitors to learn our trade secrets and use the information in

competition against us.

Despite our efforts to protect our proprietary rights, there is no assurance that such protections will preclude our competitors from developing and/or marketing similar products. While we are not aware of any third party intellectual property that would materially affect our business, our failure or inability to obtain patents and protect our proprietary information could result in our business being adversely affected.

If we are not able to establish and maintain successful arrangements with third parties or successfully build our own sales and marketing infrastructure, we may not be able to commercialize our products, which would adversely affect our business and financial condition.

To commercialize our products, we must continue to develop our own sales, marketing and distribution capabilities, which will be expensive and time consuming, or make arrangements with third parties to perform these services for us. The third parties may not be capable of successfully selling any of our products. We will have to commit significant resources to developing a marketing and sales force and supporting distribution capabilities. If we decide to enter into arrangements with third parties for performance of these services, we may find that they are not available on terms acceptable to us, or at all.

We may face intellectual property infringement claims that could be time-consuming, costly to defend and could result in our loss of significant rights and, in the case of patent infringement claims, the assessment of treble damages.

On occasion, we may receive notices of claims of our infringement, misappropriation or misuse of other parties' proprietary rights. We may have disputes regarding intellectual property rights with the parties that have licensed those rights to us. We may also initiate claims to defend our intellectual property. Intellectual property litigation, regardless of its outcome, is expensive and time-consuming, could divert management's attention from our business and have a material negative effect on our business, operating results or financial condition. In addition, the outcome of such litigation may be unpredictable. If there is a successful claim of infringement against us, we may be required to pay substantial damages—including treble damages if we were to be found to have willfully infringed a third party's patent—to the party claiming infringement, and to develop non-infringing technology, stop selling our products or using technology that contains the allegedly infringing intellectual property or enter into royalty or license agreements that may not be available on acceptable or commercially practical terms, if at all. Our failure to develop non-infringing technologies or license the proprietary rights on a timely basis could harm our business. In addition, modifying our products to exclude infringing technologies could require us to seek re-approval or clearance from various regulatory bodies for our products, which would be costly and time consuming. Also, we may be unaware of pending patent applications that relate to our technology. Parties making infringement claims on future issued patents may be able to obtain an injunction that would prevent us from selling our products or using technology that contains the allegedly infringing intellectual property, which could harm our business.

We face the risk of exposure to product liability claims.

We are and, if successful in developing, testing and commercializing our products, will increasingly be, exposed to potential product liability risks, which are inherent in the testing, manufacturing and marketing of such products. It is likely we will be contractually obligated, under any distribution agreements that we enter into with respect to products

our manufactures, to indemnify the individuals and/or entities that distribute our products against claims relating to the manufacture and sale of products distributed by such distribution partners. This indemnification liability, as well as direct liability to consumers for any defects in the products sold, could expose us to substantial risks and losses. While we have obtained product liability insurance, there can be no assurance that we will be able to maintain such insurance on acceptable terms or that such insurance will provide adequate coverage against potential liabilities. As we begin to sell and distribute our new line of proprietary products, we intend to increase the amount of our product liability insurance. A successful product liability claim or series of claims brought against us could result in judgments, fines, damages and liabilities that could have a material adverse effect on our business, financial condition and results of operations. We may incur significant expense investigating and defending these claims, even if they do not result in liability. Moreover, even if no judgments, fines, damages or liabilities are imposed on us, our reputation could suffer, which could have a material adverse effect on our business, financial condition and results of operations.

Healthcare policy changes, including reforms to the U.S. healthcare system, may have a material adverse effect on us.

Healthcare costs in the United States have risen significantly over the past decade. There have been, and continue to be, proposals by legislators, regulators, and third-party payers to keep these costs down. The efforts of governments and third-party payers to contain or reduce the cost of healthcare and legislative and regulatory proposals to broaden the availability of healthcare will likely affect the business and financial condition of biomedical companies. A number of legislative and regulatory changes in the healthcare system in the United States and other major healthcare markets have occurred in recent years, and interpretation and application of such changes continue to evolve. These developments have included healthcare reform legislation enacted by certain states and implementation of the Patient Protection and Affordable Care Act (the “Affordable Care Act”) enacted in 2010 which resulted in significant changes to the health care industry. These developments could, directly or indirectly, impose limitations on the prices we will be able to charge for our products, or the amounts of reimbursement available for our products from governmental agencies or third-party payers. These limitations could have a material adverse effect on our financial position and results of operations.

The Affordable Care Act includes significant provisions that encourage state and federal law enforcement agencies to increase activities related to preventing, detecting and prosecuting those who commit health care fraud and abuse. The Affordable Care Act continues to be implemented through regulation and government activity but is subject to possible amendment, additional implementing regulations and interpretive guidelines. The manner in which the Affordable Care Act continues to evolve could materially affect the extent to which and the amount at which medical devices and products are reimbursed by government programs such as Medicare, Medicaid and TRICARE. We cannot predict all impacts the Affordable Care Act may have on our products, but it may result in our products being chosen less frequently or the pricing being substantially lowered. Further, the Affordable Care Act has been subject to judicial and Congressional challenges, and legislative initiatives to modify, limit, or repeal the Affordable Care Act continue. For example, members of the current Congress have proposed additional legislative changes, including complete repeal and replacement of certain provisions of the Affordable Care Act. It remains to be seen, however, precisely what new healthcare reform legislation will be enacted, and what impact it will have on the availability of healthcare and containing or lowering the cost of healthcare. Such reforms could have an adverse effect on anticipated revenue from our products and may affect our overall financial condition and ability to develop future products.

Other healthcare reform proposals have emerged at the federal and state levels. We cannot predict the exact effect newly enacted laws or any future legislation or regulation will have on us. However, the implementation of new legislation and regulation may lower reimbursements for our products, reduce medical procedure volumes and adversely affect our business, possibly materially.

If we cannot maintain relationships with certain of our suppliers, it may be difficult to replace those suppliers and our business may suffer.

In general, raw materials essential to our business are readily available from multiple sources. However, for reasons of quality assurance, availability, or cost effectiveness, certain components and raw materials are available only from a sole supplier. Noble Biomaterials, Inc. is the principal manufacturer utilized in production of our TheraBond dressings. Noble Biomaterials, Inc. utilizes a proprietary and patented manufacturing process.

We believe that, due to the size and scale of production of our suppliers, there should be adequate supply of these raw materials from these manufacturers. In addition, our policy is to maintain sufficient inventory of components so that our production will not be significantly disrupted even if a particular component or material is not available for a period of time. However, there is no guarantee that our inventory will be sufficient to carry us through any disruption in supply. Because we have no direct control over our third-party suppliers, interruptions or delays in the products and services provided by these third parties may be difficult to remedy in a timely fashion. In addition, if such suppliers are unable or unwilling to deliver the necessary raw materials or products, we may be unable to redesign or adapt our technology to work without such raw materials or products or find alternative suppliers or manufacturers. In such events, we could experience interruptions, delays, increased costs or quality control problems.

Under our supply agreements with HLI, we receive finished goods from HLI. Because we have no direct control over HLI's suppliers, interruptions or delays in the products and services provided by these parties may be difficult to remedy in a timely fashion. In addition, if such suppliers are unable or unwilling to deliver the necessary products, we would be unable to sell any products that we expect from HLI, and, therefore, could experience a significant adverse impact on our revenue.

We purchase the MIST Therapy system from a single source and UltraMIST from a single source. Reliance on outside suppliers makes us vulnerable to a number of risks that could impact our ability to manufacture the MIST Therapy system and UltraMIST and/or disposable applicators, resulting in harm to our business, including:

- inability to obtain an adequate supply in a timely manner or on commercially reasonable terms;
- uncorrected defects that impact the performance, efficacy and safety of our products;
- difficulty identifying and qualifying alternative suppliers for components in a timely manner;
- production delays related to the evaluation and testing of products from alternative suppliers and corresponding regulatory qualifications;
- delays in delivery by our suppliers due to changes in demand from us or other customers; and
- delays in delivery or production stoppage by our supplier due to a shortage of one or more of the components comprising our product.

If the supply of the MIST Therapy system or UltraMIST or the disposable applicators or saline bottles is interrupted or significantly delayed and we are unable to acquire product from alternate sources in a timely manner and at a commercially reasonable price, our ability to meet our customers' demand would be impaired and our business could be harmed. Identifying and qualifying additional or replacement suppliers for the MIST Therapy system and/or UltraMIST or disposable applicators may not be accomplished quickly or at all and could involve significant additional costs. Interruption of supply from our suppliers or failure to obtain additional suppliers would limit our ability to distribute our products and could therefore have an adverse effect on our business.

Contractual and other disagreements with or involving our licensors, distribution partners and other commercial partners could harm our business, make us liable to them or result in litigation costs or other expenses.

Our agreements with licensors, distribution partners and other commercial partners require us to comply with performance conditions that are subject to interpretation and could result in disagreements. At any given time, we may be in disputes with one or more licensors, distribution partners or other commercial partners. Any such dispute could be very expensive for us, even if the outcome is ultimately in our favor. We cannot predict the outcome of any arbitration or litigation, the effect of any negative judgment against us or the amount of any settlement that we may enter into with such licensors, distribution partners or any other third-party. A contractual dispute may result in a licensor or other commercial partners seeking to terminate our agreements, which could harm our business, even if such termination would be wrongful.

We are dependent upon third-party local distributors to market and distribute our products in key markets.

We rely on third-party distributors for marketing and distribution of our products in certain markets, both domestically and internationally. Our success in generating sales in markets where we have engaged local distributors depends in part on the efforts of others whom we do not employ. Many of these distributors have only limited personnel, which could impair their ability to successfully market, sell and service our products. Because of limited resources or for other reasons, they may not comply with applicable local regulations or respond promptly to adverse event reporting requirements under FDA regulations. As a result of such failures to comply with regulatory requirements, we may experience significant loss of revenue, increased costs and damage to our reputation, and our business, financial condition and results of operations could be materially adversely affected. In addition, if a distributor is terminated by us or goes out of business, it may take us a period of time to locate an alternative distributor, to transfer or obtain appropriate regulatory approvals and to train our personnel to market our products, and our ability to sell and service our products in the region formerly serviced by such terminated distributor could be materially adversely affected. Any of these factors could materially adversely affect our revenue in markets served by distributors, increase our costs in those markets or damage our reputation.

Security breaches and other disruptions could compromise our information and expose it to liability, which would cause our business and reputation to suffer.

In the ordinary course of our business, we use networks to collect and store sensitive data, including intellectual property, proprietary business information and that of our customers, suppliers and business partners, personally identifiable information of our customers and employees, and data relating to patients who use our products. The secure processing, maintenance and transmission of this information is critical to our operations. Despite our security measures, our information technology and infrastructure may be vulnerable to attacks by hackers or breached due to employee error, malfeasance or other disruptions. Any such breach could compromise our networks and the information stored there could be accessed, publicly disclosed, lost or stolen. Any such access, disclosure or other loss of information could result in legal claims or proceedings, liability under laws that protect the privacy of personal information, and regulatory penalties, disrupt our operations and the services we provide to customers, damage our reputation, and cause a loss of confidence in our products and services, which could adversely affect our operating margins, revenues and competitive position.

Risks Related to Our Common Stock and the Offering

Our stock price has been and may continue to be volatile, which could result in substantial losses for investors.

The market price of our common stock has been and is likely to continue to be highly volatile and could fluctuate widely in response to various factors, many of which are beyond our control, including the following:

- technological innovations or new products and services by or our competitors;
- additions or departures of key personnel;
- sales of our common stock, particularly under any registration statement for the purposes of selling any other securities, including management shares;
- our ability to execute our business plan;
- operating results that fall below expectations;

- loss of any strategic relationship;

- industry developments;

- economic, political and other external factors; and

- period-to-period fluctuations in our financial results.

In addition, the securities markets have from time to time experienced significant price and volume fluctuations that are unrelated to the operating performance of particular companies. These market fluctuations may also significantly affect the market price of our common stock.

Our common stock could be delisted from The Nasdaq Capital Market if we fail to regain compliance with the minimum bid price requirement of $1.00 per share for continued listing within the time period required by the Nasdaq Listing Rules.

On October 12, 2016, we received written notice from the Listing Qualifications Department of Nasdaq indicating that, based upon the closing bid price of our common stock for the last 30 consecutive business days, we did not meet the minimum bid price of $1.00 per share required for continued listing on The Nasdaq Capital Market pursuant to Nasdaq Listing Rule 5550(a)(2). In accordance with Nasdaq Listing Rule 5810(c)(3)(A), we have 180 calendar days, or until April 10, 2017, to cure the deficiency and regain compliance with the minimum bid price requirement. In order to cure the deficiency, the closing bid price of our common stock would have to be $1.00 or higher for a minimum of ten consecutive business days during the initial 180-day compliance period.

If we do not regain compliance by April 10, 2017, an additional 180 days may be granted to regain compliance if we (i) meet the continued listing requirement for market value of publicly held shares and all other initial listing standards for The Nasdaq Capital Market (except for the bid price requirement) and (ii) provide written notice to Nasdaq of our intention to cure the deficiency during the second 180-day compliance period, by effecting a reverse stock split, if necessary. If we meet these requirements, Nasdaq will inform us that we have been granted an additional 180 calendar days. However, if it appears to Nasdaq that we will not be able to cure the deficiency, or if we are otherwise not eligible, Nasdaq will provide notice that our common stock will be subject to delisting. At that time, we may appeal Nasdaq's delisting determination to a hearings panel. There can be no assurance that we will be able to regain compliance with the minimum bid price requirement or will otherwise be in compliance with other Nasdaq listing criteria.

If our common stock is delisted from The Nasdaq Capital Market, our ability to raise capital in the future may be limited. Delisting could also result in less liquidity for our stockholders and a lower stock price. Such a delisting would likely have a negative effect on the price of our common stock and would impair the ability to readily sell or purchase our common stock. Although we expect to take actions to restore our compliance with Nasdaq's listing requirements, we can provide no assurance that any action taken by us would be successful, or that any such action would stabilize the market price or improve the liquidity of our common stock.

Our stock price, and the stock price of many other life science companies, have suffered significant declines over the past 12 months.

Market prices for securities of life sciences companies, particularly companies like ours with limited product revenues, have been highly volatile and have suffered sharp losses over the past 12 months. As a result of these declines, it has become much harder for life sciences companies, like us, to raise money, as needed, in the capital markets. As such, should we desire to sell equity in the future to raise capital, such capital may not be available on favorable terms, or at all. In addition, any such capital raises could be highly dilutive to current stockholders. Depressed valuations of our stock will also make it harder for us to consummate strategic transactions or acquisitions, which have historically been a significant part of our growth strategy, absent significant dilution to our current investors.

Our management team may invest or spend the proceeds of this offering in ways with which you may not agree or in ways which may not yield a significant return.

Our management will have broad discretion over the use of proceeds from this offering. We intend to use the net proceeds of this offering for working capital and general corporate purposes and to pay our monthly payment obligations under the Credit Agreement. However, our management will have broad discretion in the application of the net proceeds from this offering and could spend the proceeds in ways that do not improve our results of operations

or enhance the value of our common stock. The failure by management to apply these funds effectively could result in financial losses that could have a material adverse effect on our business, cause the price of our common stock to decline and delay the development of our product candidates.

You will experience immediate and substantial dilution as a result of this offering, future equity offerings or other equity issuances.

The offering price per share in this offering will exceed the net tangible book value per share of our common stock outstanding immediately prior to this offering. Assuming that an aggregate of shares of our common stock are sold at the public offering price of $ per share, for aggregate gross proceeds of approximately $, and after deducting the underwriting discounts and commissions and estimated aggregate offering expenses payable by us, you will experience immediate dilution of $ per share, representing the difference between our pro forma net tangible book value per share as of December 31, 2016, after giving effect to this offering and the offering price. See the section entitled “Dilution” on page S-29 below for a more detailed illustration of the dilution you may incur if you participate in this offering.

We may be required to issue additional shares of common stock to the investors who purchased shares of our common stock in a private placement in February 2017 as a result of the "most favored nation" provision in the securities purchase agreement entered into in such private placement and to holders of certain warrants upon exercise, pursuant to anti-dilution provisions in such warrants, which will be dilutive to all of our stockholders, including new investors in this offering.

The securities purchase agreement, dated February 27, 2017, pursuant to which we sold an aggregate of 5,540,000 shares of our common stock in a private placement at a purchase price of $0.50 per share, contains a "most-favored nation" provision that provides that if we, during 120 days from February 27, 2017, issue or sell any common stock or common stock equivalents reasonably believed to be more favorable in terms or conditions than the private placement, we must amend the terms of the securities purchase agreement to give the private placement investors the benefit of such more favorable terms or conditions. In accordance with this provision, if the private placement investors reasonably believe the terms or conditions of this offering to be more favorable than those in the private placement, including the purchase price, we will be required to adjust the terms or conditions of the private placement to the terms and conditions of this offering. If the public offering price in this offering is less than $0.50, this provision would require us to issue additional shares of common stock to the private placement investors to give them an effective purchase price equal to the public offering price. Such issuance of additional shares of common stock will be dilutive to all of our stockholders, including new investors in this offering.

In addition, we will be required to issue additional shares of common stock to Perceptive Credit Holdings, L.P. upon exercise of the amended and restated warrant, dated March 7, 2017, pursuant to a weighted average anti-dilution adjustment in such warrant, and to the holders of certain five-year warrants, upon exercise, issued in November 2012, pursuant to a full ratchet anti-dilution adjustment included in such warrants.

Purchasers in this offering may experience additional dilution in the book value of their investment in the future.

We are not restricted from issuing additional securities in the future, including shares of common stock, securities that are convertible into or exchangeable for, or that represent the right to receive, common stock or substantially similar securities. The issuance of these securities may cause further dilution to our stockholders. In order to raise additional capital, we may in the future offer such additional securities at prices that may not be the same as the price per share in this offering. We cannot assure you that we will be able to sell shares or other securities in any other offering at a price per share that is equal to or greater than the price per share paid by investors in this offering, and investors purchasing shares or other securities in the future could have rights superior to existing stockholders, including investors who purchase shares of common stock in this offering. The price per share at which we sell additional shares of our common stock or securities convertible into common stock in future transactions may be higher or lower than the price per share in this offering. The exercise of outstanding stock options may also result in further dilution of your investment.

We do not expect to pay dividends in the future. As a result, any return on investment may be limited to the value of our common stock.

We do not anticipate paying any dividends in the foreseeable future. Our Credit Agreement prohibits us from paying cash dividends or distributions on our capital stock. Even if we are permitted to pay cash dividends in the future, we currently intend to retain any future earnings for funding growth. As a result, an investor should not rely on an investment in our securities if such investor requires dividend income. Capital appreciation, if any, of our shares may be the only source of gain on our securities for the foreseeable future. Moreover, an investor may not be able to re-sell such investor's shares at or above the price paid for them.

We are subject to financial reporting and other requirements that place significant demands on our resources.

We are subject to reporting and other obligations under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), including the requirements of Section 404 of the Sarbanes-Oxley Act of 2002. Section 404 requires us to conduct an annual management assessment of the effectiveness of our internal controls over financial reporting. These reporting and other obligations place significant demands on our management, administrative, operational, internal audit and accounting resources. Any failure to maintain effective internal controls could have a material adverse effect on our business, operating results and stock price. Moreover, effective internal control is necessary for us to provide reliable financial reports and prevent fraud. If we cannot provide reliable financial reports or prevent fraud, we may not be able to manage our business as effectively as we would if an effective control environment existed, and our business and reputation with investors may be harmed.

There are inherent limitations in all control systems, and misstatements due to error or fraud may occur and not be detected.

The ongoing internal control provisions of Section 404 of the Sarbanes-Oxley Act of 2002 require us to identify material weaknesses in internal control over financial reporting, which is a process to provide reasonable assurance regarding the reliability of financial reporting for external purposes in accordance with accounting principles generally accepted in the United States. Our management, including our Chief Executive Officer and Chief Financial Officer, does not expect that our internal controls and disclosure controls will prevent all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. In addition, the design of a control system must reflect the fact that there are resource constraints and the benefit of controls must be relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, in our company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty and that breakdowns can occur because of simple errors or mistakes. Further, controls can be circumvented by individual acts of some persons, by collusion of two or more persons, or by management override of the controls. The design of any system of controls is also based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving our stated goals under all potential future conditions. Over time, a control may be inadequate because of changes in conditions, such as growth of the company or increased transaction volume, or the degree of compliance with the policies or procedures may deteriorate. Because of inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

In addition, discovery and disclosure of a material weakness, by definition, could have a material adverse impact on our financial statements. Such an occurrence could discourage certain customers or suppliers from doing business with us, cause downgrades in our future debt ratings leading to higher borrowing costs and affect how our stock trades. This could, in turn, negatively affect our ability to access public debt or equity markets for capital.

Our board of directors can authorize the issuance of preferred stock, which could diminish the rights of holders of our common stock, and make a change of control of it more difficult even if it might benefit our stockholders.

Our board of directors is authorized to issue shares of preferred stock in one or more series and to fix the voting powers, preferences and other rights and limitations of the preferred stock. Accordingly, we may issue shares of preferred stock with a preference over our common stock with respect to dividends or distributions on liquidation or dissolution, or that may otherwise adversely affect the voting or other rights of the holders of common stock. Issuances of preferred stock, depending upon the rights, preferences and designations of the preferred stock, may have the effect of delaying, deterring or preventing a change of control, even if that change of control might benefit our stockholders.

Offers or availability for sale of a substantial number of shares of our common stock may cause the price of our common stock to decline.

Sales of a significant number of shares of our common stock in the public market could harm the market price of our common stock and make it more difficult for us to raise funds through future offerings of common stock. As additional shares of our common stock become available for resale in the public market, the supply of our common stock will increase, which could decrease the price of our common stock.

In addition, if our stockholders sell substantial amounts of our common stock in the public market, upon the expiration of any statutory holding period under Rule 144, upon the expiration of lock-up periods applicable to outstanding shares, or upon the exercise of outstanding options or warrants, it could create a circumstance commonly referred to as an "overhang," in anticipation of which the market price of our common stock could fall. The existence of an overhang, whether or not sales have occurred or are occurring, could also make it more difficult for us to raise additional financing through the sale of equity or equity-related securities in the future at a time and price that we deem reasonable or appropriate.

If securities or industry analysts do not publish research or publish inaccurate or unfavorable research about our business, our stock price and trading volume could decline.

The trading market for our common stock will depend in part on the research and reports that securities or industry analysts publish about it or our business. Although we currently have research coverage by securities and industry analysts, you should not invest in our common stock in anticipation that we will increase such coverage. If one or more of the analysts who covers us at any given time downgrades our stock or publishes inaccurate or unfavorable research about our business, our stock price would likely decline. If one or more of these analyst's ceases coverage of us or fails to publish reports on us regularly, demand for our stock could decrease, which could cause our stock price and trading volume to decline.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement and the accompanying prospectus and the information incorporated by reference herein and therein contain "forward-looking statements," which include information relating to future events, future financial performance, strategies, expectations, competitive environment and regulation. Words such as "may," "should," "could," "would," "predicts," "potential," "continue," "expects," "anticipates," "future," "intends," "plans," "believes," "estimates," and expressions, as well as statements in future tense, identify forward-looking statements within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. Forward-looking statements should not be read as a guarantee of future performance or results and will probably not be accurate indications of when such performance or results will be achieved. Forward-looking statements are based on information we have when those statements are made or our management's good faith belief as of that time with respect to future events, and are subject to numerous factors, risks and uncertainties that could cause actual performance, the outcome of events, timing or results to differ materially from those expressed in or suggested by the forward-looking statements. Important factors that could cause such differences include, but are not limited to:

- our ability to continue as a going concern;
- inadequate capital;
- the uncertainty regarding the adequacy of our liquidity to pursue our complete business objectives;
- our ability to recover the carrying value of some or all of our intangible assets including goodwill;
- our ability to obtain reimbursement from third party payers for our products;
- our ability to achieve and maintain minimum sales requirements under our license agreements;
- our ability to obtain and maintain regulatory approval of our existing products and any future products we may develop;
- our ability to cure or obtain forbearance or waivers for existing covenant defaults under our outstanding indebtedness and to remain in compliance with our debt covenants;
- market acceptance of our existing and future products;

- loss or retirement of key executives;
- our plans to make significant additional outlays of working capital before we expect to generate significant revenues and the uncertainty regarding when we will begin to generate significant revenues, if we are able to do so;
- an unfavorable decision on product reimbursement;
- adverse economic conditions and/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;
- risks of mergers and acquisitions including the time and cost of implementing transactions and the potential failure to achieve expected gains, revenue growth or expense savings;
- price increases for supplies and components; and
- the inability to carry out research, development and commercialization plans.

You should review carefully the section entitled “Risk Factors” beginning on page S-9 of this prospectus supplement for a discussion of these and other risks that relate to our business and investing in our securities. The forward-looking statements contained or incorporated by reference in this prospectus supplement are expressly qualified in their entirety by this cautionary statement. We do not undertake any obligation to publicly update any forward-looking statement to reflect events or circumstances after the date on which any such statement is made or to reflect the occurrence of unanticipated events.

USE OF PROCEEDS

We estimate that the net proceeds from the sale of shares of our common stock in this offering will be approximately $, or approximately $ if the underwriter exercises in full its over-allotment option to purchase additional shares of common stock, based on the public offering price of $ per share, after deducting the underwriting discounts and commissions and estimated offering expenses payable by us.

We intend to use the net proceeds from this offering (i) for working capital and general corporate purposes, and (ii) to pay our monthly payment obligations under the Credit Agreement with Perceptive Credit Opportunities Fund, L.P., dated May 29, 2015, under which, (A) on the last business day of each calendar month following May 29, 2017, we will be required to make monthly principal payments of $225,000, and (B) interest accrued on the outstanding principal amount of the term loan.

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 we face 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 this offering, is being optimized. Circumstances that may give rise to a change in the use of proceeds include:

- a change in development plan or strategy;
- the addition of new products or applications;

- 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;

- failure to achieve sales as anticipated; and

- the availability of other sources of cash including cash flow from operations and alternative financing arrangements, if any.

Until we use the net proceeds of this offering, we will invest the funds in short-term, investment grade, interest-bearing securities.

PRICE RANGE OF OUR COMMON STOCK

Our common stock has been listed on The NASDAQ Capital Market under the symbol “ALQA” since January 28, 2014.

The following table sets forth the high and low sales prices of our common stock as reported on The NASDAQ Capital Market for the periods indicated:

The NASDAQ Capital Market	High	Low
2017		
First Quarter (through March 27, 2017)	$0.85	$0.45
2016		
Fourth Quarter	$0.95	$0.57
Third Quarter	$1.30	$0.73
Second Quarter	$1.48	$0.70
First Quarter	$2.30	$0.76
2015		
Fourth Quarter	$3.88	$1.86
Third Quarter	$5.66	$3.11
Second Quarter	$5.65	$4.18
First Quarter	$6.55	$4.77

On March 27, 2017, the last reported sale price of our common stock on The NASDAQ Capital Market was $0.64 per share. As of March 27, 2017, there were approximately 319 holders of record of our common stock.

DIVIDEND POLICY

We have never paid cash dividends on our common stock and do not anticipate paying any cash dividends in the foreseeable future, but intend to retain our capital resources for reinvestment in our business. In addition, our Credit Agreement prohibits us from paying cash dividends or distributions on our capital stock.

DILUTION

If you invest in our common stock, your interest will be diluted to the extent of the difference between the price per share you pay in this offering and the net tangible book value per share of our common stock immediately after this offering. Our net tangible book value of our common stock as of December 31, 2016, was approximately $(8,367,000), or approximately $(0.28) per share of common stock based on 29,669,036 shares outstanding at that time. “Net tangible book value” is total assets minus the sum of liabilities and intangible assets. “Net tangible book value per share” is net tangible book value divided by the total number of shares outstanding.

After giving effect to the sale of shares of common stock in this offering at the public offering price of $ per share, and after deducting the underwriting discounts and commissions and estimated offering expenses payable by us, our net tangible book value as of December 31, 2016, would have been approximately $, or approximately $ per share of common stock based on shares of common stock outstanding on a pro forma basis at that time. This represents an immediate increase in net tangible book value of $ per share to our existing stockholders and an immediate dilution of approximately $ per share to new investors participating in this offering, as illustrated by the following table:

Public offering price per share of common stock		$
Net tangible book value per share of common stock as of December 31, 2016	$(0.28)	
Increase in net tangible book value per share of common stock attributable to the offering	$	
Pro forma net tangible book value per share of common stock as of December 31, 2016 after giving effect to the offering		$
Dilution in net tangible book value per share of common stock to new investors in the offering		$

If the underwriter exercises in full its option to purchase additional shares of common stock at the public offering price of $ per share, our as adjusted net tangible book value after this offering would be approximately $, or $ per share, representing an increase in net tangible book value of approximately $ per share to existing stockholders and immediate dilution in net tangible book value of approximately $ per share to investors purchasing our common stock in this offering at the public offering price.

The discussion of dilution, and the table quantifying it, assume no exercise of any outstanding options or warrants or other potentially dilutive securities. The exercise of potentially dilutive securities having an exercise price less than the offering price would increase the dilutive effect to new investors.

In particular, the table above excludes the following potentially dilutive securities as of December 31, 2016:

- 3,365,407 shares of common stock issuable upon the exercise of currently outstanding warrants with exercise prices ranging from $2.19 to $10.50 and having a weighted average exercise price of $5.69;
- 7,199,286 shares of common stock issuable upon the exercise of currently outstanding options with exercise prices ranging from $0.80 to $26.69 and having a weighted average exercise price of $5.29 per share;
- 214,612 shares of common stock available for future issuance under our 2011 Long-Term Incentive Plan; and
- 609,850 shares of common stock available for future issuance under our 2014 Plan.

To the extent that any of these options or warrants are exercised, new options are issued under our equity incentive plans and subsequently exercised or we issue additional shares of common stock in the future, there will be further dilution to new investors participating in this offering.

In addition, if we issue additional shares of common stock to (i) investors who purchased shares of our common stock in a private placement in February 2017 as a result of the “most favored nation” provision in the securities purchase agreement entered into in such private placement, (ii) Perceptive Credit Holdings, L.P. upon exercise of the amended and restated warrant, dated March 7, 2017, pursuant to a weighted average anti-dilution adjustment in such warrant, and (iii) the holders of certain five-year warrants, upon exercise, issued in November 2012, pursuant to a full ratchet anti-dilution adjustment included in such warrants, there will be further dilution to new investors participating in this offering (see “Risk Factors—We may be required to issue additional shares of common stock to the investors who purchased shares of our common stock in a private placement in February 2017 as a result of the “most favored nation” provision in the securities purchase agreement entered into in such private placement and to holders of certain

warrants upon exercise, pursuant to anti-dilution provisions in such warrants, which will be dilutive to all of our stockholders, including new investors in this offering.").

Certain of our affiliates have indicated an interest in purchasing up to $190,000 of shares of our common stock in this offering at the public offering price. However, because indications of interest are not binding agreements or commitments to purchase, the underwriter may determine to sell more, fewer or no shares to any potential investor and any potential investor may determine to purchase more, fewer or no shares in this offering.

UNDERWRITING

We have entered into an underwriting agreement with H.C. Wainwright & Co., LLC, as underwriter, with respect to the common stock being offered hereby. Subject to the terms and conditions of the underwriting agreement, the underwriter has agreed to purchase from us the number of shares of our common stock set forth opposite its name below.

Underwriter	Number of Shares
H.C. Wainwright & Co., LLC	
Total	

The underwriting agreement provides that the obligations of the underwriter are subject to certain conditions precedent and that the underwriter has agreed to purchase all of the shares sold under the underwriting agreement if any of these shares are purchased, other than those shares covered by the over-allotment option described below

We have agreed to indemnify the underwriter against specified liabilities, including liabilities under the Securities Act of 1933, as amended (the “Securities Act”), and to contribute to payments the underwriter may be required to make in respect thereof.

The underwriter is offering the shares, subject to prior sale, when, as and if issued to and accepted by it, subject to approval of legal matters by its counsel and other conditions specified in the underwriting agreement. The underwriter reserves the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

Certain of our affiliates have indicated an interest in purchasing up to $190,000 of shares of our common stock in this offering at the public offering price. However, because indications of interest are not binding agreements or commitments to purchase, the underwriter may determine to sell more, fewer or no shares to any potential investor and any potential investor may determine to purchase more, fewer or no shares in this offering.

Over-allotment Option to Purchase Additional Shares. We have granted to the underwriter an option to purchase up to additional shares of common stock at the public offering price, less the underwriting discounts and commissions. This option is exercisable for a period of 30 days. The underwriter may exercise this option solely for

the purpose of covering over-allotments, if any, made in connection with the sale of common stock offered hereby. To the extent that the underwriter exercises this option, the underwriter will purchase additional shares from us in approximately the same proportion as shown in the table above.

Underwriting Discounts and Commissions. The following table shows the public offering price, underwriting discounts and commissions and proceeds, before expenses to us. These amounts are shown assuming both no exercise and full exercise of the underwriter's option to purchase additional shares.

We estimate that the total expenses of the offering, excluding underwriting discounts and commissions, will be approximately $200,000 and are payable by us. We have agreed to reimburse the underwriter for out-of-pocket expenses in an amount of $10,000 and $100,000 for legal fees and expenses incurred in connection with the offering.

	Per Share	Total Without Over-Allotment	With Over Allotment
Public offering price			
Underwriting discounts and commissions			
Proceeds, before expenses, to Alliqua			

The underwriter proposes to offer the shares of common stock to the public at the public offering price set forth on the cover of this prospectus. The underwriter may offer the shares of common stock to securities dealers at the public offering price less a concession not in excess of $ per share. If all of the shares are not sold at the public offering price, the underwriter may change the offering price and other selling terms.

In addition, we have agreed to issue to the underwriter warrants to purchase up to 2.5% of the aggregate number of shares of common stock sold in this offering, excluding the over-allotment option, at an exercise price of $ per share (representing 110% of the public offering price for a share of common stock to be sold in this offering). The underwriter warrants will be exercisable immediately and for five years from the date of the underwriting agreement. Pursuant to FINRA Rule 5110(g), the underwriter warrants and any shares issued upon exercise of the underwriter warrants shall not be sold, transferred, assigned, pledged, or hypothecated, or be the subject of any hedging, short sale, derivative, put or call transaction that would result in the effective economic disposition of the securities by any person for a period of 180 days immediately following the date of effectiveness or commencement of sales of this offering, except the transfer of any security: (i) by operation of law or by reason of our reorganization; (ii) to any FINRA member firm participating in the offering and the officers or partners thereof, if all securities so transferred remain subject to the lock-up restriction set forth above for the remainder of the time period; (iii) if the aggregate amount of our securities held by the underwriter or related persons do not exceed 1% of the securities being offered; (iv) that is beneficially owned on a pro-rata basis by all equity owners of an investment fund, provided that no participating member manages or otherwise directs investments by the fund and the participating members in the aggregate do not own more than 10% of the equity in the fund; or (v) the exercise or conversion of any security, if all securities remain subject to the lock-up restriction set forth above for the remainder of the time period.

We have also agreed to give the underwriter a six-month tail fee equal to the cash and warrant compensation in this offering, if any investor who was contacted by the underwriter provides us with further capital during such six-month period following the date of the underwriting agreement.

Discretionary Accounts. The underwriter does not intend to confirm sales of the shares to any accounts over which they have discretionary authority.

Stabilization. In connection with this offering, the underwriter may engage in stabilizing transactions, over-allotment transactions, syndicate covering transactions, penalty bids and purchases to cover positions created by short sales.

- Stabilizing transactions permit bids to purchase shares of common stock so long as the stabilizing bids do not exceed a specified maximum, and are engaged in for the purpose of preventing or retarding a decline in the market price of the common stock while the offering is in progress.

- Over-allotment transactions involve sales by the underwriter of shares of common stock in excess of the number of shares the underwriter is obligated to purchase. This creates a syndicate short position which may be either a covered short position or a naked short position. In a covered short position, the number of shares over-allotted by the underwriter is not greater than the number of shares that they may purchase in the over-allotment option. In a naked short position, the number of shares involved is greater than the number of shares in the over-allotment option. The underwriter may close out any short position by exercising their over-allotment option and/or purchasing shares in the open market.

- Syndicate covering transactions involve purchases of common stock in the open market after the distribution has been completed in order to cover syndicate short positions. In determining the source of shares to close out the short position, the underwriter will consider, among other things, the price of shares available for purchase in the open market as compared with the price at which they may purchase shares through exercise of the over-allotment option. If the underwriter sells more shares than could be covered by exercise of the over-allotment option and, therefore, has a naked short position, the position can be closed out only by buying shares in the open market. A naked short position is more likely to be created if the underwriter is concerned that after pricing there could be downward pressure on the price of the shares in the open market that could adversely affect investors who purchase in the offering.

- Penalty bids permit the representative to reclaim a selling concession from a syndicate member when the common stock originally sold by that syndicate member is purchased in stabilizing or syndicate covering transactions to cover syndicate short positions.

These stabilizing transactions, syndicate covering transactions and penalty bids may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock. As a result, the price of our common stock in the open market may be higher than it would otherwise be in the absence of these transactions. Neither we nor the underwriter make any representation or prediction as to the effect that the transactions described above may have on the price of our common stock. These transactions may be effected on the Nasdaq Stock Market, in the over-the-counter market or otherwise and, if commenced, may be discontinued at any time.

Passive Market Making. In connection with this offering, underwriter and selling group members may engage in passive market making transactions in our common stock on the Nasdaq Stock Market in accordance with Rule 103 of Regulation M under the Securities Exchange Act of 1934, as amended ("Regulation M"), during a period before the commencement of offers or sales of common stock and extending through the completion of the distribution. A passive market maker must display its bid at a price not in excess of the highest independent bid of that security. However, if all independent bids are lowered below the passive market maker's bid, such bid must then be lowered when specified purchase limits are exceeded.

Lock-Up Agreements. Pursuant to certain ''lock-up'' agreements, we and our executive officers and directors have agreed, subject to certain exceptions, not to offer, sell, assign, transfer, pledge, contract to sell, or otherwise dispose of or announce the intention to otherwise dispose of, or enter into any swap, hedge or similar agreement or arrangement that transfers, in whole or in part, the economic consequence of ownership of, directly or indirectly, or engage in any short selling of, or make any demand or request or exercise any right with respect to the registration of, or file with the Securities and Exchange Commission a registration statement under the Securities Act relating to, any common stock or securities convertible into or exchangeable or exercisable for any common stock without the prior written consent of the underwriter for a period of 90 days after the date of the pricing of the offering.

This lock-up provision applies to common stock and to securities convertible into or exchangeable or exercisable for common stock. It also applies to common stock owned now or acquired later by the person executing the agreement or for which the person executing the agreement later acquires the power of disposition. The exceptions permit parties to the ''lock-up'' agreements, among other things and subject to restrictions, to: (a) make certain gifts and make transfers by will or intestate succession, (b) if the party is a corporation, partnership, limited liability company or other business entity, make transfers to any shareholders, partners, members of, or owners of similar equity interests in, the party, if such transfer is not for value, (c) if the party is a corporation, partnership, limited liability company or other business entity, make transfers (i) in connection with the sale or other bona fide transfer in a single transaction of all or substantially all of the party's capital stock, partnership interests, membership interests or other similar equity interests, as the case may be, or all or substantially all of the party's assets, in any such case not undertaken for the purpose of avoiding the restrictions imposed by the "lock-up" agreement or (ii) to an affiliate corporation, partnership, limited liability company or other business entity of the party, if such transfer is not for value; and (d) if the party is one of our directors or officers, make transfers solely in connection with (i) the "cashless" exercise of any equity awards outstanding on the date of the underwriting agreement granted pursuant to our equity plans, provided that any common stock received upon such exercise is subject to the restrictions provided for in the "lock-up" agreement, or (ii) the surrender or forfeiture of our common stock to us in partial or full settlement of any withholding tax obligation of

the party accruing upon the exercise or vesting of any equity award outstanding on the date of the underwriting agreement granted pursuant to our equity plans; provided that (i) in the case of clauses (a) through (c) above, the transferee agrees to be bound in writing by the lock-up restrictions and (ii) in the case of clauses (a) through (d) above, if the party is required to file a report under Section 16(a) of the Securities Exchange Act of 1934, as amended, reporting a reduction in beneficial ownership of shares of our common stock during the 90-day restricted period, the party must include a statement in such report describing the nature of such transfer. In addition, the exceptions include issuance of shares of common stock by us in connection with our past or future acquisition of businesses, products or technologies (whether by means of merger, stock purchase, asset purchase or otherwise) or in connection with joint ventures, commercial relationships or other strategic transactions.

We have not authorized and do not authorize the making of any offer of securities through any financial intermediary on our behalf, other than offers made by the underwriter and its respective affiliates, with a view to the final placement of the securities as contemplated in this prospectus supplement. Accordingly, no purchaser of the shares, other than the underwriters, is authorized to make any further offer of shares on our behalf or on behalf of the underwriter.

Electronic Offer, Sale and Distribution of Shares. A prospectus in electronic format may be made available on the websites maintained by one or more of the underwriters or selling group members, if any, participating in this offering and one or more of the underwriters participating in this offering may distribute prospectuses electronically. The representatives may agree to allocate a number of shares to underwriters and selling group members for sale to their online brokerage account holders. Internet distributions will be allocated by the underwriters and selling group members that will make internet distributions on the same basis as other allocations. Other than the prospectus in electronic format, the information on these websites is not part of this prospectus or the registration statement of which this prospectus forms a part, has not been approved or endorsed by us or any underwriter in its capacity as underwriter, and should not be relied upon by investors.

Other Relationships. The underwriter and its affiliates have provided, and may in the future provide, various other investment banking, commercial banking and other financial services for us and our affiliates for which they have received, and may in the future receive, customary fees.

The underwriter acted as our placement agent in connection with a private placement we closed on February 27, 2017, for which it received a cash compensation.

LEGAL MATTERS

The validity of the shares of common stock offered by this prospectus supplement will be passed upon for us by Haynes and Boone, LLP. The underwriter is being represented by Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.

EXPERTS

The consolidated financial statements incorporated in this prospectus supplement by reference to our Annual Report on Form 10-K for the year ended December 31, 2016, 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 auditing and accounting.

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, amendments to those reports, and other information that we 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 supplement, 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 supplement and prior to the termination of the offering:

- Our Annual Report on Form 10-K for the fiscal year ended December 31, 2016, filed with the Securities and Exchange Commission on March 14, 2017;

- Our Current Reports on Form 8-K, filed with the Securities and Exchange Commission on each of January 30, 2017, February 28, 2017, March 13, 2017, March 15, 2017, and March 23, 2017; and

.

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.

Any statement contained in this prospectus supplement or in a document incorporated or deemed to be incorporated by reference into this prospectus supplement will be deemed to be modified or superseded for purposes of this prospectus supplement to the extent that a statement contained in this prospectus supplement or any other subsequently filed document that is deemed to be incorporated by reference into this prospectus supplement modifies or supersedes the statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus supplement.

You may request, orally or in writing, a copy of any or all of the documents incorporated herein by reference (excluding any exhibits to those documents, unless we have specifically incorporated that exhibit by reference herein). These documents will be provided to you at no cost, by contacting:

Alliqua BioMedical, Inc.

1010 Stony Hill Road

Yardley, PA 19067,

Attention: Brian Posner, Chief Financial Officer

Telephone: (215) 702-8550

You may also access the documents incorporated by reference in this prospectus supplement through our website at www.alliqua.com. Except as set forth above, no information available on or through our website shall be deemed to be incorporated in this prospectus supplement, the accompanying prospectus or the registration statement of which it forms a part.

You should rely only on information contained in, or incorporated by reference into, this prospectus supplement and the accompanying prospectus. Neither we nor the underwriter has authorized anyone to provide you with information different from that contained in this prospectus supplement or the accompanying prospectus or incorporated by reference in this prospectus supplement or the accompanying prospectus. You should not assume that the information in this prospectus supplement is accurate as of any date other than the date of this prospectus supplement or the date of the documents incorporated by reference in this prospectus supplement. We are not making offers to sell the securities in any jurisdiction in which such an offer or solicitation is not authorized or in which the person making such offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make such offer or solicitation.

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 4 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 September 25, 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.

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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.

RISK FACTORS

An investment in our securities involves a high degree of risk. The prospectus supplement applicable to each offering of our securities will contain a discussion of the risks applicable to an investment in our securities. Before deciding whether to invest in our securities, you should carefully consider the specific factors discussed under the heading "Risk Factors" in the applicable prospectus supplement, together with all of the other information contained or incorporated by reference in the prospectus supplement or appearing or incorporated by reference in this prospectus. You should also consider the risks, uncertainties and assumptions discussed under Item 1A, "Risk Factors," in 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, all of which are incorporated herein by reference, as updated or superseded by the risks and uncertainties described under similar headings in the other documents that are filed after the date hereof and incorporated by reference into this prospectus and any prospectus supplement related to a particular offering. The risks and uncertainties we have described are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our operations. Past financial performance may not be a reliable indicator of future performance, and historical trends should not be used to anticipate results or trends in future periods. If any of these risks actually occurs, our business, business prospects, financial condition or results of operations could be seriously harmed. This could cause the trading price of our common stock to decline, resulting in a loss of all or part of your investment. Please also read carefully the section below entitled "Special Note Regarding Forward-Looking Statements."

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, each prospectus supplement and the information incorporated by reference in this prospectus and each prospectus supplement contain "forward-looking statements," which include information relating to future events, future financial performance, strategies, expectations, competitive environment and regulation. Words such as "may," "should," "could," "would," "predicts," "potential," "continue," "expects," "anticipates," "future," "intends," "plans," "believe similar expressions, as well as statements in future tense, identify forward-looking statements. Forward-looking statements should not be read as a guarantee of future performance or results and will probably not be accurate indications of when such performance or results will be achieved. Forward-looking statements are based on information we have when those statements are made or our management's good faith belief as of that time with respect to future events, and are subject to risks and uncertainties that could cause actual performance or results to differ materially from those expressed in or suggested by the forward-looking statements. Important factors that could cause such differences include, but are not limited to:

- The uncertainty regarding the adequacy of our liquidity to pursue our complete business objectives;

- inadequate capital;

- 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 depositary 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 depositary 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 depositary or its nominee identified in the series prospectus supplement.

The specific terms of the depositary 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 depositary 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 depositary 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 depositary 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 depositary, 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 depositary or its nominee is the registered owner of a global security, the depositary 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 depositary 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 depositary'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 depositary 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 depositary 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;
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- 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.

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 reallowed 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 l3(a), l3(c), 14 or l5(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;

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

(3) our Current Reports on Form 8-K or Form 8-K/A filed with the Securities and Exchange Commission on January 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;

(4) the description of our common stock contained in our Definitive Information Statement on Schedule 14C filed 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.

Shares

Common Stock

PRELIMINARY PROSPECTUS SUPPLEMENT

Rodman & Renshaw

A unit of H.C. Wainwright & Co.

, 2017