

Amarantus Bioscience Holdings, Inc.
Form 424B5
November 13, 2015

Filed Pursuant to Rule 424(b)(5)

Registration No. 333-203845

Prospectus Supplement

(To Prospectus Dated May 22, 2015)

330 Shares of Series H 12% Convertible Preferred Stock

Common Stock Purchase Warrant, exercisable for 140,250 shares of Common Stock

Pursuant to this prospectus supplement and the accompanying prospectus, we are offering 330 shares of Series H 12% Convertible Preferred Stock, which we refer to as our Series H Preferred Stock, and the common stock issuable from time to time upon conversion of our Series H Preferred Stock. Each share of Series H Preferred Stock has a stated value of \$1,000 and is convertible into shares of our common stock at an initial conversion price of the lower of (i) \$2.50, subject to adjustment and (ii) 75%, subject to adjustment, of the lowest volume weighted average price, or VWAP, during the fifteen (15) Trading Days immediately prior to the date a Conversion Notice is sent to us by a holder, at any time at the option of the holder, provided that the holder will be prohibited from converting Series H Preferred Stock into shares of our common stock if, as a result of such conversion, the holder, together with its affiliates, would own more than 4.99% of the total number of shares of our common stock then issued and outstanding, which limit may be increased to 9.99% at the option of the holder. In the event of our liquidation, dissolution or winding up, holders of our Series H Preferred Stock will receive a payment equal to the stated value of \$1,000 per share of Series H Preferred Stock before any proceeds are distributed to the holders of our common stock. Shares of Series H Preferred Stock will generally have no voting rights, except as required by law and except that the consent of the holders of the outstanding Series H Preferred Stock will be required to amend any provision of our articles of incorporation that would have a materially adverse effect on the rights of the holders of the Series H Preferred Stock

In addition pursuant to this prospectus supplement and the accompanying prospectus, we are selling to the purchasers of shares of our Series H Preferred Stock, a Common Stock Purchase Warrant, which we refer to as our Warrant, and the 140,250 shares of common stock issuable upon exercise of our Warrant. The Warrant is exercisable for a period of 5 years from date of issuance at an exercise price of \$2.00 per share.

Our common stock is currently quoted on the OTC QX under the symbol "AMBS". On November 12, 2015, the last reported sale price of our common stock on the OTC QX was \$0.36.

We are not listing our Series H Preferred Stock and Warrants on an exchange or any trading system and we do not expect that a market for our Series H Preferred Stock and Warrants will develop.

Our business and an investment in our securities involve a high degree of risk. See "Risk Factors" beginning on page S-9 of this prospectus supplement for a discussion of information that you should consider before investing in our securities.

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

Delivery of the shares of Series H Preferred Stock and Warrants is expected to be made on or about November 13, 2015, subject to customary closing conditions.

Prospectus Supplement dated November 13, 2015.

TABLE OF CONTENTS

Prospectus Supplement

| | Page |
|--|-------------|
| <u>About this Prospectus Supplement</u> | |
| <u>Prospectus Supplement Summary</u> | 1 |
| <u>Risk Factors</u> | 9 |
| <u>Cautionary Statement Regarding Forward-Looking Statements</u> | 17 |
| <u>Use of Proceeds</u> | 18 |
| <u>Dividend Policy</u> | 19 |
| <u>Description of Securities We Are Offering</u> | 20 |
| <u>Plan of Distribution</u> | 24 |
| <u>Legal Matters</u> | 25 |
| <u>Experts</u> | 25 |
| <u>Where You Can Find More Information</u> | 25 |
| <u>Incorporation of Documents By Reference</u> | 25 |

Prospectus

| | Page |
|---|-------------|
| About this Prospectus | 2 |
| Our Business | 2 |
| Risk Factors | 2 |
| Disclosure Regarding Forward-Looking Statements | 3 |
| Use of Proceeds | 3 |
| The Securities We May Offer | 4 |
| Description of Capital Stock | 4 |
| Description of Warrants | 16 |
| Description of Units | 19 |
| Plan of Distribution | 19 |
| Legal Matters | 21 |
| Experts | 21 |
| Where You Can Find More Information | 21 |
| Incorporation of Documents By Reference | 22 |

ABOUT THIS PROSPECTUS SUPPLEMENT

Unless the context otherwise requires, all references in this prospectus supplement to “Amarantus,” the Company,” “we,” “us” or “our” refer to Amaranthus Bioscience Holdings, Inc., a Nevada corporation.

This prospectus supplement is part of a registration statement that we have filed with the Securities and Exchange Commission, or the SEC, utilizing a continuous registration process. Under this continuous registration process, we are offering to sell our securities using this prospectus supplement and the accompanying prospectus. Both this prospectus supplement and the accompanying prospectus include important information about us, our securities being offered and other information you should know before investing. This prospectus supplement also adds, updates and changes information contained in the accompanying prospectus.

You should rely only on the information contained in or incorporated by reference into this prospectus supplement and the accompanying prospectus. To the extent the information contained in this prospectus supplement differs or varies from the information contained in the accompanying prospectus or any document filed prior to the date of this prospectus supplement and incorporated by reference, the information in this prospectus supplement will control. We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. The information in this prospectus supplement and the accompanying prospectus is accurate only as of the date it is presented. You should read this prospectus supplement, the accompanying prospectus, the documents incorporated by reference described in the section entitled “Incorporation of Certain Documents by Reference” into this prospectus supplement and the accompanying prospectus in their entirety before investing in our securities.

We are offering to sell, and seeking offers to buy, the securities offered by this prospectus supplement only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the accompanying prospectus and the offering of the securities offered by this prospectus supplement 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 warrants 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.

PROSPECTUS SUPPLEMENT SUMMARY

The items in the following summary are described in more detail later in this prospectus supplement, in the accompanying prospectus and in the documents incorporated by reference herein and therein. This summary provides an overview of selected information and does not contain all the information you should consider before investing in our securities. Therefore, you should carefully read this prospectus supplement and the accompanying prospectus, including the documents incorporated by reference, which are described under “Where You Can Find More Information” and “Important Information Incorporated by Reference” in this prospectus supplement. You should also carefully consider the matters discussed in the sections in this prospectus supplement entitled “Risk Factors” and in the accompanying prospectus and in other periodic reports incorporated herein by reference.

Unless we indicate otherwise, all information in this prospectus reflects a 1-for 150 reverse stock split of our issued and outstanding and authorized common stock, options and warrants effected on June 9, 2015 and the corresponding adjustment of all common stock price per share data and stock option and warrant exercise price per share data.

Overview

We are a California based biopharmaceutical company founded in January 2008. We own or have exclusive licenses to various product candidates in the biopharmaceutical and diagnostic areas of the healthcare industry. We are developing our diagnostic product candidates in the field of neurology, and our therapeutic product candidates in the areas of neurology, psychiatry, ophthalmology and regenerative medicine. Our business model is to develop our product candidates through various de-risking milestones that we believe will be accretive to shareholder value, and will position them to be strategically partnered with pharmaceutical companies, diagnostic companies and/or other stakeholders in order to more efficiently achieve regulatory approval and commercialization.

We have three operating divisions: the diagnostics division; the therapeutics division; and the drug discovery division.

Recent Developments

On September 30, 2015, we entered into a Securities Purchase Agreement (the “Note SPA”) with an institutional investor for the sale of an aggregate principal amount \$3,055,556 12% Senior Secured Convertible Promissory Notes due September 29, 2016 (the “Senior Secured Notes”) and a warrant to purchase 1,298,612 shares of common stock (the

“PP Warrant”) in a private placement offering (the “PP Offering”). The gross proceeds to us from the PP Offering were \$2,750,000. The PP Warrant is exercisable at any time on or after the earlier to occur of (i) all shares of common stock underlying the PP Warrant are registered for resale under the Securities Act of 1933, and (ii) the date six (6) months from September 30, 2015 (the earlier to occur of (i) and (ii), the “Initial Exercise Date”) and on or prior to the close of business on the five-year anniversary of the Initial Exercise Date at an exercise price of \$2.00 per share. The issuance of the Senior Secured Notes and the PP Warrant was completed in accordance with the exemption provided by Section 4(a)(2) of the Securities Act of 1933, as amended.

On September 30, 2015, we entered into a Securities Purchase Agreement (the “Series H SPA”) with an institutional investor for the sale of 3,055,556 (including 10% OID) shares of our Series H Preferred Stock and a warrant to purchase 1,298,612 shares of common stock (the “RD Warrant” and together with the Series H Preferred Stock, the “Securities”) in a registered direct offering (the “RD Offering”). The gross proceeds to us from the RD Offering were \$2,750,000.

On September 30, 2015, we entered into an exchange agreement with Dominion Capital LLC (“Dominion”) pursuant to which Dominion exchanged \$3,021,000 (including OID and make-whole) aggregate principal amount of Senior Secured Convertible Notes for \$3,021,000 aggregate principal amount of Senior Secured Notes and a PP Warrant to purchase 1,298,612 shares of common stock.

On September 25, 2015, we entered into a repurchase agreement (the “Repurchase Agreement”) with the holder of all of our issued and outstanding Series G Preferred Stock (the “Series G Holder”) pursuant to which we have repurchased all of the issued and outstanding shares of Series G Preferred Stock and all shares of common stock held by the Series G Holder for an aggregate purchase price of \$4,750,000. As of October 1, 2015, there are no more shares of Series G Preferred Stock issued and outstanding.

Diagnostics Division

Within our diagnostics division, we are developing the following product candidates:

LymPro Test®

The Lymphocyte Proliferation Test (“LymPro Test®”, or “LymPro”) is a diagnostic blood test for Alzheimer’s disease originally developed by the University of Leipzig in Germany. The test works by evaluating the cell surface marker CD69 on peripheral blood lymphocytes following a mitogenic stimulation. The underlying scientific basis for LymPro is that Alzheimer’s patients have a dysfunctional cellular machinery division process that inappropriately allows mature neurons in the brain to enter the mitotic process (cell division /cell cycle). When this happens the neurons start the cell division process, but cannot complete the process. As a result, a number of cytokines and other genes are up-regulated, ultimately leading to cell death by apoptosis. This inappropriate cell division activation process is also present in the lymphocytes of Alzheimer’s patients, as lymphocytes share similar cellular division machinery with brain neurons. We measure the integrity of this cellular machinery division process by measuring CD69 up-regulation in response to the mitogenic stimulation. If CD 69 is up-regulated it means that the cellular machinery division process is correct and Alzheimer’s is not present. If CD69 is not up-regulated, it means there is a dysfunctional cellular machinery division process, and Alzheimer’s is more likely. Data has been published in peer-reviewed publications on LymPro with 160 patients, demonstrating 92% co-positivity and 91% co-negativity with an overall 95% accuracy rating for LymPro.

In 2014, we completed a 'Fit-for-Purpose' assay validation for LymPro at Icon Central Laboratories in Farmingdale, NY, enabling LymPro to be offered to the pharmaceutical industry for diagnosis of patients entering clinical trials for Alzheimer’s disease, as a means of mitigating the risk of selecting the wrong patients for inclusion in such clinical studies. Biomarker services using LymPro Test® biomarker data are now available to the pharmaceutical industry for Investigational Use Only (IUO), in such pharmaceutical therapeutic clinical development programs.

MSPrecise®

In January 2015, we acquired MSPrecise®, which is a proprietary next-generation DNA sequencing (NGS) assay for the identification of patients with relapsing-remitting multiple sclerosis (RRMS) at first clinical presentation. MSPrecise® utilizes next-generation sequencing to measure DNA mutations found in rearranged immunoglobulin genes in immune cells initially isolated from cerebrospinal fluid. If successful, MSPrecis® should augment the current standard of care for the diagnosis of MS, by providing a more accurate assessment of a patient's immune response to a challenge within the central nervous system. MSPrecise® offers a novel method of measuring changes in adaptive

human immunity and may also be able to discern individuals whose disease is more progressive and requires more aggressive treatment.

Final results from a pivotal clinical validation study demonstrated that MSPrecise[®] met the primary study endpoint in patients suspected of having RRMS. MSPrecise[®] provided a clear improvement in classifying early-stage RRMS patients when compared with the published performance for the current diagnostic standard of care by cerebrospinal fluid (CSF) analysis. In this study, MSPrecise[®] not only performed well as a standalone test but, when combined with the current standard of diagnosis, oligoclonal banding (OCB), it demonstrated that it can substantially reduce the number of both false positives and false negatives as compared to use of OCB alone.

Additional Diagnostic Biomarkers

In January 2015, we entered into a one-year, option agreement with Georgetown University for an exclusive license of patent rights related to certain blood based biomarkers for memory loss that Georgetown University and University of Rochester jointly developed and own (the “Georgetown Biomarkers”). In the event that we exercise this option, conditions and milestones will be defined; such as, providing Georgetown with development and commercialization plans for the biomarkers and recruiting a senior executive to lead our diagnostics division, as well as other requirements defined in the option agreement. The diagnostic technologies subject to this option agreement are based on metabolic, genetic and exosomal biomarkers. We believe these may hold additional potential for identifying distinguishing factors in dementia and Alzheimer's disease that will be complementary to our LymPro Test[®] diagnostic for Alzheimer's disease. With the potential addition of the Georgetown Biomarkers to our Alzheimer's diagnostics portfolio, we are positioning ourselves to provide all three modalities (cell cycle dysregulation, lipidomics and exosomes) for diagnosis of Alzheimer's disease.

In May 2013, we acquired the intellectual property rights to two diagnostic blood test platforms known as NuroPro and BC-SeraPro from the bankruptcy estate of Power3 Medical Products. NuroPro is a neurodegenerative disease diagnostic platform with a lead application in Parkinson's disease. BC-SeraPro is an oncology diagnostic platform with a lead application in breast cancer. Further development of our NuroPro and BC-SeraPro diagnostic platforms are on hold, as we apply our resources to the continuing development of our LymPro Test[®] and MSPrecise diagnostics, as well as our planned development of the Georgetown Biomarkers.

Drug Discovery Division

MANF was discovered utilizing our proprietary PhenoGuard[™] protein discovery technology, and we believe that this drug discovery platform can be used to discover other, similar neurotrophic factors. Our PhenoGuard[™] technology currently consists of 88 cell lines, and we intend to expand the number of such cell lines as we conduct research directed towards the discovery of such additional neurotrophic factors.

Mesencephalic Astrocyte-derived Neurotrophic Factor ("MANF") is an endogenous, evolutionally conserved and widely expressed protein that was discovered by our Chief Scientific Officer, Dr. John Commissiong. MANF acts on a variety of molecular functions, including as a part of the endoplasmic reticulum stress response ("ER-SR") system of the unfolded protein response ("UPR"). MANF has demonstrated efficacy as a disease-modifying treatment in various animal models, including Parkinson's disease, retinitis pigmentosa, cardiac ischemia and stroke. We have made a strategic decision to focus the development of MANF in orphan indications and is currently evaluating the most appropriate indication for development based on data currently being assembled internally, by contract research organizations and academic collaborators.

Therapeutics Division

Within the therapeutics division, we are developing the following product candidates:

Eltoprazine

Eltoprazine is a small molecule 5HT1a/1b partial agonist in clinical development for the treatment of Parkinson's disease levodopa-induced dyskinesia (PD LID) and Adult Attention Deficit Hyperactivity Disorder ("Adult ADHD"). Eltoprazine has been evaluated in over 600 human subjects to date, with a very strong and well-established safety profile. Eltoprazine was originally developed by Solvay Pharmaceuticals for the treatment of aggression. Solvay

out-licensed the Eltoprazine program to PsychoGenics. PsychoGenics licensed Eltoprazine to Amaranthus following successful Phase 2a studies in both PD-LID and Adult ADHD, in which both primary and secondary endpoints were met.

In September 2014, we submitted a request to the FDA for a review and written feedback of our Phase 2b program clinical trial design for Eltoprazine in PD LID. We have received feedback from the FDA on our trial design, and are in the process of preparing a full IND submission for this important therapeutic indication. Following initiation of our Phase 2b program clinical study of Eltoprazine in PD LID, we will submit a request to the FDA regarding further clinical development of Eltoprazine in Adult ADHD. In March 2015, the company received notification of approval from the FDA that IND 124224 was approved and allows the company to commence this clinical trial.

MANF

MANF (mesencephalic-astrocyte-derived neurotrophic factor) is believed to have broad potential because it is a naturally-occurring protein produced by the body for the purpose of reducing and preventing apoptosis (cell death) in response to injury or disease, via the unfolded protein response. By manufacturing MANF and administering it to the body, we are seeking to use a regenerative medicine approach to assist the body with higher quantities of MANF when needed. We are the front-runner and primary holder of intellectual property around MANF, and we are focusing on the development of MANF-based protein therapeutics. MANF has demonstrated efficacy as a disease-modifying treatment in various animal models, including retinitis pigmentosa, Parkinson's disease, cardiac ischemia and stroke.

We made a strategic decision to focus the development of MANF in orphan indications. The FDA Orphan Drug Designation program provides a special status to drugs and biologics intended to treat, diagnose or prevent so-called orphan diseases and disorders that affect fewer than 200,000 people in the U.S. This designation provides for a seven-year marketing exclusivity period against competition, as well as certain incentives, including federal grants, tax credits and a waiver of PDUFA filing fees.

In December 2014, the FDA granted MANF orphan drug designation for the treatment of retinitis pigmentosa (RP). RP refers to a group of inherited diseases causing retinal degeneration often leading to blindness. Pre-clinical data showed that MANF provided protective functional effects in an animal model of RP. Moreover, toxicology studies have demonstrated that MANF was well tolerated following a single intravitreal administration of a therapeutically relevant dose. Our goal is to continue to build value in our MANF program by seeking other orphan drug designations for MANF, and by continuing work to advance this promising product candidate toward clinical testing in multiple therapeutic areas.

Engineered Skin Substitute

In November 2014, we entered into an exclusive option agreement to acquire Engineered Skin Substitute (ESS), an autologous skin replacement product for the treatment of Stage 3 and Stage 4 intractable severe burns. As part of the option agreement, we have also agreed to engage Lonza Walkersville, Inc., or Lonza, a subsidiary of Lonza Group Ltd., to produce ESS for human clinical trials and subsequent commercial distribution.

ESS is a tissue-engineered skin prepared from autologous (patient's own) skin cells. It is a combination of cultured epithelium with a collagen-fibroblast implant that produces a skin substitute that contains both epidermal and dermal components. This model has been shown in preclinical studies to generate a functional skin barrier. Most importantly, the researchers consider self-to-self skin grafts for autologous skin tissue to be ideal because they are less likely to be rejected by the immune system of the patient, unlike with porcine or cadaver grafts in which immune system rejection is an important possibility.

ESS has the potential to become a revolutionary new treatment for severe burns. The product is produced from a small sample of the patient's own healthy skin. The sample is harvested from a portion of healthy skin remaining on a burn patient's body and is then shipped to Lonza's central laboratory facility for expansion. The proprietary ESS technology can then be applied to produce an expanded sample or graft that is sufficiently large enough to close severe wounds covering the majority of an individual's body, including both the epidermal and dermal layers of the skin. The expanded skin samples are then shipped back in rectangular shapes, with the dimensions of approximately 10 inches by 10 inches, to the severe burn center for surgical transplantation onto the original patient to facilitate wound closure. Wound closure is of critical importance in this setting to promote healing and to reduce the risk of a variety of infections, including sepsis.

ESS is being developed with support from a grant from the Armed Forces Institute for Regenerative Medicine (AFIRM). The AFIRM grant was awarded to support the IND and initial clinical studies. We anticipate initiating, during the third quarter of 2015, a 10 patient Phase 2 clinical study to evaluate the efficacy of ESS versus meshed split thickness autograft, the current standard of care for the treatment of Stage 3 and Stage 4 intractable severe burns.

On July 8, 2015, we exercised our previously disclosed option to acquire Cutanogen Corporation which holds ESS. Pursuant to a Share Purchase Agreement among us and Lonza dated July 14, 2015. We paid \$4,000,000 to Lonza upon closing. Pursuant to the Share Purchase Agreement, we will be required to pay up to \$5,000,000 in aggregate milestone payments upon the achievement of certain regulatory milestones.

Risks affecting us

Our business is subject to numerous risks, as discussed more fully in the section entitled “Risk Factors” immediately following this prospectus summary. As of June 30, 2015, we had an accumulated deficit of approximately \$71.5 million. We have incurred significant losses since inception. We expect to incur significant and increasing operating losses for the next several years as we expand our research and development, advance product candidates into clinical development, complete clinical trials, seek regulatory approval and, if we receive FDA approval, commercialize our products. Because of the numerous risks and uncertainties associated with product development efforts, we are unable to predict the extent of any future losses or when we will become profitable, if at all. We continue to face significant challenges and uncertainties and, as a result, our available capital resources may be consumed more rapidly than currently expected. Accordingly, we will need to raise additional funds to support our operating and capital needs.

Corporate Information

We were incorporated on January 14, 2008 in the state of Delaware and were reincorporated in Nevada on March 22, 2013. The Company is a development stage biopharmaceutical drug development holding company dedicated to sourcing high-potential therapeutic and diagnostic platform technologies and aligning their development with complementary biopharmaceutical assets to reduce overall enterprise risk. Our principal executive offices are located at 655 Montgomery Street, Suite 900, San Francisco, CA 94111 and our telephone number is (415) 688-4484. Our website address is <http://www.amarantus.com/>. The information on, or that can be accessed through, our website is not part of this prospectus supplement.

S-5

The Offering

Series H Preferred Stock

Series H Preferred Stock offered by us 330 Shares. This prospectus supplement also relates to the offering of initially approximately 916,667 shares of common stock issuable upon conversion of the Series H Preferred Stock assuming a conversion price of \$0.36 per share.

Common stock outstanding after this offering 20,411,518 shares, assuming all of the Series H Preferred Stock is converted at \$0.36 per share.

Conversion Each share of Series H Preferred Stock has a stated value of \$1,000 and is convertible into shares of our common stock at an initial conversion price of the lower of (i) \$2.50, subject to adjustment, and (ii) 75%, subject to adjustment, of the lowest VWAP, during the fifteen (15) Trading Days immediately prior to the date a Conversion Notice is sent to us by a holder, at any time at the option of the holder, provided that the holder will be prohibited from converting Series H Preferred Stock into shares of our common stock if, as a result of such conversion, the holder, together with its affiliates, would own more than 4.99% of the total number of shares of our common stock then issued and outstanding, which limit may be increased to 9.99% at the option of the holder. The shares of Series H Preferred Stock will automatically convert into shares of common stock upon a qualified public offering which is a firm commitment underwritten public offering which results in gross proceeds of at least \$9,000,000 and results in the shares of common stock being listed on a national securities exchange, at the lower of the (i) conversion price and (ii) 75% of the qualified public offering price.

Liquidation Preference In the event of our liquidation, dissolution, or winding up, holders of our Series H Preferred Stock will receive a payment equal to the stated value per share of Series H Preferred Stock before any proceeds are distributed to the holders of our common stock.

Voting Rights Shares of Series H Preferred Stock will generally have no voting rights, except as required by law and except that the consent of the holders of the outstanding Series H Preferred Stock will be required to amend any provision of our articles of incorporation that would have a materially adverse effect on the rights of the holders of the Series H Preferred Stock.

Dividends Each share of Series H Preferred Stock shall be entitled to receive, and we shall pay, cumulative dividends (i) for the 12 month period beginning on date of issuance, or the Initial 12 Month Period, and (ii) for each subsequent twelve 12 month period beginning on the first calendar day, or the First Day of a Subsequent 12 Month Period, following the last calendar day of the prior twelve (12) month period and terminating 12 months thereafter, or a Subsequent 12 Month Period, provided that for each Subsequent 12 Month Period the share of Series H Preferred Stock is issued and outstanding on the First Day of a Subsequent 12 Month Period, at the rate per share of Series H Preferred Stock (as a percentage of the stated value per share) equal to 12% per annum all of which dividends shall be guaranteed and the total amount of dividends due on each share of Series H Preferred Stock for each twelve (12) month period shall be deemed earned (i) as to the Initial 12 Month Period, on date of issuance; and (ii) for each Subsequent 12 Month Period, on the First Day of a Subsequent 12 Month Period.

Redemption We shall have the right to redeem all (but not less than all) shares of the Series H Preferred Stock at any time after issuance, at a redemption price per share then issued and outstanding, equal to the product of (i) 120% (130% if a qualified public offering has occurred), multiplied by (ii) the sum of (x) the stated value, (y) all accrued but unpaid dividends, and (z) all other amount due to the holder.

*Common Stock
Purchase Warrant*

Warrants offered by us This prospectus supplement also relates to the offering of the 140,250 shares of common stock issuable upon exercise of the Warrant.

Exercise Price \$2.00 per share

Term Exercisable upon issuance until 5 years from date of issuance.

Anti-Dilution The exercise price and the number of shares of common stock purchasable upon the exercise of the Warrants are subject to adjustment upon the occurrence of specific events, including stock dividends, stock splits, combinations and reclassifications of our common stock. Additionally, the exercise price of the Warrants is subject to certain adjustments if we issue or sell any additional shares of common stock or common stock equivalents at a price per share less than the exercise price then in effect or without consideration.

Redemption After 18 months from date of issuance, in the event that (i) the closing bid price or closing sale price of the common stock is at least equal to \$7.00 (subject to adjustment for stock splits, stock dividends, reorganizations, and the like) for a thirty (30) consecutive Trading Day period prior to the Trading Day a Redemption Note (as defined below) is sent by us to the holder (“Pre-Call Period”), and (ii) for each trading day during the Pre-Call Period, the trading volume for the common stock is at least equal to 300,000 shares, then we shall have the right, upon at least ten (10) Trading Days' prior written notice to the holder (the “Redemption Notice”), to redeem all or any portion of the warrant shares underlying the Warrants, at a redemption price equal to \$7.00 per warrant share.

Use of Proceeds We intend to use the net proceeds from this offering for research and development activities, general corporate purposes and working capital.

Risk Factors You should read the “Risk Factors” beginning on page 23 of our Annual Report on Form 10-K for the year ended December 31, 2014, on page S-9 of this prospectus supplement and in the documents incorporated by reference in this prospectus supplement and the accompanying prospectus for a discussion of factors to consider before deciding to purchase our securities.

OTCQX
Trading Symbol AMBS

The number of shares of common stock to be outstanding after this offering as reflected in the table above is based on the actual number of shares outstanding at November 12, 2015, which was 12,773,862, and does not include, as of that date:

· 1,195,275 shares of common stock issuable upon the exercise of outstanding options, with a weighted average exercise price of \$4.79 per share;

· 302,891 shares of common stock issuable upon the issuance of outstanding warrants, with a weighted average exercise price of \$3.41 per share;

· 5,000 shares of common stock issuable upon the conversion of 750,000 shares of Series C convertible preferred stock, 4,561,110 shares of common stock issuable upon the conversion of 9,122.22 shares of Series E Convertible Preferred Stock and 7,637,656 shares of common stock issuable upon the conversion of 2,749.556 shares of Series H Convertible Preferred Stock, assuming a conversion price of \$0.36 per share;

· 1,325,809 shares of common stock reserved for future issuance under our option plans;

· all of the shares of common stock issuable upon conversion of the Senior Secured Notes

· all of the shares of common stock issuable upon exercise of the PP Warrant;

· all of the shares of common stock issuable upon exercise of the RD Warrant; and

· 140,250 shares of common stock issuable upon exercise of the Warrants to be issued in this offering.

RISK FACTORS

Any investment in our securities involves a high degree of risk. Investors should carefully consider the risks described below and all of the information contained in this prospectus supplement and the accompanying prospectus before deciding whether to purchase our securities. Our business, financial condition and results of operations could be materially adversely affected by these risks if any of them actually occur. This prospectus supplement and the accompanying prospectus also contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including the risks we face as described below and elsewhere in this prospectus supplement.

We are largely dependent on the success of our lead product candidates, LymPro, Eltoprazine, ESS and MANF, and we may not be able to successfully commercialize these products.

We have incurred and will continue to incur significant costs relating to the development of our lead product candidates, LymPro, Eltoprazine, ESS and MANF. We have not obtained approval to commercialize LymPro, Eltoprazine, ESS and MANF in any jurisdiction and we may never be able to obtain approval or, if approvals are obtained, to commercialize LymPro, Eltoprazine, ESS and MANF successfully.

If we fail to successfully commercialize our products, we may be unable to generate sufficient revenue to sustain and grow our business, and our business, financial condition and results of operations will be adversely affected.

If we fail to obtain U.S. regulatory approval of LymPro, Eltoprazine, ESS, MANF or any of our other current or future product candidates, we will be unable to commercialize these potential products in the United States.

The development, testing, manufacturing and marketing of our product candidates are subject to extensive regulation by governmental authorities in the United States. In particular, the process of obtaining FDA approval is costly and time consuming, and the time required for such approval is uncertain. Our product candidates must undergo rigorous preclinical and clinical testing and an extensive regulatory approval process mandated by the FDA. Such regulatory review includes the determination of manufacturing capability and product performance. Generally, only a small percentage of pharmaceutical products are ultimately approved for commercial sale.

We can give no assurance that our current or future product candidates will be approved by the FDA or any other governmental body. In addition, there can be no assurance that all necessary approvals will be granted for future

product candidates or that FDA review or actions will not involve delays caused by requests for additional information or testing that could adversely affect the time to market for and sale of our product candidates. Further failure to comply with applicable regulatory requirements can, among other things, result in the suspension of regulatory approval as well as possible civil and criminal sanctions.

Our proprietary rights may not adequately protect our intellectual property and product candidates and if we cannot obtain adequate protection of our intellectual property and product candidates, we may not be able to successfully market our product candidates.

Our commercial success will depend in part on obtaining and maintaining intellectual property protection for our technologies and product candidates. We will only be able to protect our technologies and product candidates from unauthorized use by third parties to the extent that valid and enforceable patents cover them, or those other market exclusionary rights apply.

While we have issued enforceable patents covering our product candidates, the patent positions of life sciences companies, like ours, can be highly uncertain and involve complex legal and factual questions for which important legal principles remain unresolved. No consistent policy regarding the breadth of claims allowed in such companies' patents has emerged to date in the United States. The general patent environment outside the United States also involves significant uncertainty. Accordingly, we cannot predict the breadth of claims that may be allowed or that the scope of these patent rights would provide a sufficient degree of future protection that would permit us to gain or keep our competitive advantage with respect to these products and technology.

Our issued patents may be subject to challenge and possibly invalidated by third parties. Changes in either the patent laws or in the interpretations of patent laws in the United States or other countries may diminish the market exclusivity ability of our intellectual property.

In addition, others may independently develop similar or alternative compounds and technologies that may be outside the scope of our intellectual property. Should third parties obtain patent rights to similar compounds or radiolabeling technology, this may have an adverse effect on our business.

To the extent that consultants or key employees apply technological information independently developed by them or by others to our product candidates, disputes may arise as to the proprietary rights of the information, which may not be resolved in our favor. Consultants and key employees that work with our confidential and proprietary technologies are required to assign all intellectual property rights in their discoveries to us. However, these consultants or key employees may terminate their relationship with us, and we cannot preclude them indefinitely from dealing with our competitors. If our trade secrets become known to competitors with greater experience and financial resources, the competitors may copy or use our trade secrets and other proprietary information in the advancement of their products, methods or technologies. If we were to prosecute a claim that a third party had illegally obtained and was using our trade secrets, it would be expensive and time consuming and the outcome would be unpredictable. In addition, courts outside the United States are sometimes less willing to protect trade secrets than courts in the United States. Moreover, if our competitors independently develop equivalent knowledge, we would lack any contractual claim to this information, and our business could be harmed.

If our product candidates, including LymPro, Eltoprazine, ESS, MANF, do not gain market acceptance among physicians, patients and the medical community, we will be unable to generate significant revenue, if any.

The products that we develop may not achieve market acceptance among physicians, patients, third-party payers and others in the medical community. If we, or any of our partners, receive the regulatory approvals necessary for commercialization, the degree of market acceptance will depend upon a number of factors, including:

- limited indications of regulatory approvals;
- the establishment and demonstration in the medical community of the clinical efficacy and safety of our product candidates and their potential advantages over existing diagnostic compounds;
- the prevalence and severity of any side effects;
- our ability to offer our product candidates at an acceptable price;
- the relative convenience and ease of administration of our products;
- the strength of marketing and distribution support; and
- sufficient third-party coverage or reimbursement.

The market may not accept LymPro, Eltoprazine, ESS or MANF based products based on any number of the above factors. The market may choose to continue utilizing the existing products for any number of reasons, including familiarity with or pricing of these existing products. The failure of any of our product candidates to gain market acceptance could impair our ability to generate revenue, which could have a material adverse effect on our future business and prevent us from obtaining the necessary partnerships to further our business strategy.

Risks Associated with Our Financial Condition

Our independent registered public accounting firm has expressed substantial doubt about our ability to continue as a going concern, which may hinder our ability to obtain future financing.

Our consolidated financial statements as of December 31, 2014 were prepared under the assumption that we will continue as a going concern for the next twelve months. Our independent registered public accounting firm has issued a report that included an explanatory paragraph referring to our projected future losses along with recurring losses from operations and expressing substantial doubt in our ability to continue as a going concern without additional capital becoming available. Our ability to continue as a going concern is dependent upon our ability to obtain additional equity or debt financing, attain further operating efficiencies, reduce expenditures, and, ultimately, to generate revenue. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

We are at an early stage of development as a company and currently have no source of revenue and may never become profitable.

We are a development stage biopharmaceutical company. Currently, we have no products approved for commercial sale and, to date, we have not generated any revenue. Our ability to generate revenue depends heavily on:

- demonstration in future clinical trials that our product candidate, MANF for the treatment of PD is safe and effective;
- our ability to seek and obtain regulatory approvals, including with respect to the indications we are seeking;
- successful manufacture and commercialization of our product candidates; and
- market acceptance of our products.

All of our existing product candidates are in various stages of development and will require extensive additional preclinical and clinical evaluation, regulatory review and approval, significant marketing efforts and substantial investment before they could provide us with any revenue. As a result, if we do not successfully develop, achieve regulatory approval and commercialize LymPro, Eltoprazine, ESS and/or MANF, we will be unable to generate any revenue for many years, if at all. We do not anticipate that we will generate revenue for several years, at the earliest, or that we will achieve profitability for at least several years after generating material revenue, if at all. If we are unable to generate revenue, we will not become profitable, and we may be unable to continue our operations.

We do not have any products that are approved for commercial sale and therefore do not expect to generate any revenues from product sales in the foreseeable future, if ever.

We currently do not have any products that are approved for commercial sale. To date, we have funded our operations primarily from grants and sales of our securities. We have not received, and do not expect to receive for at least the next several years in the case of Eltoprazine and MANF and until the first half of 2015 in the case of LymPro, if at all, any revenues from the commercialization of our product candidates. To obtain revenues from sales of our product candidates, we must succeed, either alone or with third parties, in developing, obtaining regulatory approval for, manufacturing and marketing drugs with commercial potential. We may never succeed in these activities, and may not generate sufficient revenues to continue our business operations or achieve profitability.

We have incurred significant losses since inception and anticipate that we will incur continued losses for the foreseeable future.

As of December 31, 2014 we had an accumulated deficit of approximately \$55 million. We have incurred significant losses since inception. We expect to incur significant and increasing operating losses for the next several years as we expand our research and development, advance product candidates into clinical development, complete clinical trials, seek regulatory approval and, if we receive FDA approval, commercialize our products. Because of the numerous risks and uncertainties associated with product development efforts, we are unable to predict the extent of any future losses or when we will become profitable, if at all. If we are unable to achieve and then maintain profitability, the market value of our common stock will likely decline.

We will need to raise substantial additional capital to fund our operations, and our failure to obtain funding when needed, may force us to delay, reduce or eliminate certain product development programs.

We expect to continue to spend substantial amounts to:

- continue development of our product candidates;
- finance our general and administrative expenses;
- license or acquire additional technologies;
- manufacture product for clinical trials;

S-11

- launch and commercialize our product candidates, if any such product candidates receive regulatory approval; and
 - develop and implement commercial manufacturing, sales, marketing and distribution capabilities.

We will be required to raise additional capital to complete the development and commercialization of our product candidates and to continue to fund operations at the current cash expenditure levels. Our future funding requirements will depend on many factors, including, but not limited to:

- the rate of progress and cost of our clinical trials and other development activities;
- any future decisions we may make about the scope and prioritization of the programs we pursue;
- the costs of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights;
 - the costs of manufacturing product;
 - the costs and timing of regulatory approval;
 - the costs of establishing sales, marketing and distribution capabilities;
 - the effect of competing technological and market developments;
- the terms and timing of any collaborative, licensing and other arrangements that we may establish; and
 - general market conditions for offerings from biopharmaceutical companies.

Worldwide economic conditions and the international equity and credit markets have recently significantly deteriorated and may remain depressed for the foreseeable future. These developments could make it more difficult for us to obtain additional equity or credit financing, when needed.

We cannot be certain that funding will be available on acceptable terms, or at all. To the extent that we raise additional funds by issuing equity securities, our stockholders may experience significant dilution. Any debt financing, if available, may involve restrictive covenants that impact our ability to conduct our business. If we are unable to raise additional capital when required or on acceptable terms, we may have to significantly delay, scale back or discontinue the development and/or commercialization of one or more of our product candidates. We also may be required to:

- seek collaborators for our product candidates at an earlier stage than otherwise would be desirable and on terms that are less favorable than might otherwise be available; and/or
- relinquish license or otherwise dispose of rights to technologies, product candidates or products that we would otherwise seek to develop or commercialize ourselves on unfavorable terms. if we are unable to fund our operations, we may be forced to discontinue and wind down our business.

We may require additional financing to sustain our operations and without it we may not be able to continue operations.

At December 31, 2014, we had a working capital deficit of \$5,900,000. We have never had positive operating cash flow. For the year ended December 31, 2014, we incurred an operating cash flow deficit of \$11,331,000. We do not currently have sufficient financial resources to fund our operations or those of our subsidiaries. Therefore, we need additional funds to continue these operations.

We may direct Lincoln Park to purchase up to an additional \$14,506,119 worth of shares of our common stock under our agreement generally in amounts up to 6,667 shares of our common stock on any such business day, which amounts may be increased to up to 16,667, provided the closing price of our common stock exceeds a certain threshold with a maximum limit of up to \$500,000 worth of our common stock on any single business day, plus an additional “accelerated amount” under certain circumstances. However, Lincoln Park shall not purchase any shares of our common stock on any business day that the closing sale price of our common stock is less than \$6.00 per share, subject to adjustment as set forth in the Purchase Agreement. Assuming a purchase price of \$12.33 per share (the closing sale price of the common stock on December 31, 2014) and the purchase by Lincoln Park of the full 510,000 purchase shares under the purchase agreement, proceeds to us would only be \$6,288,300. As of June 11, 2015, we had received \$5,493,881 from Lincoln Park in consideration for the issuance of an aggregate of 436,322 common shares, of which 6,410 shares were for commitment fees.

The extent we rely on Lincoln Park as a source of funding will depend on a number of factors including, the prevailing market price of our common stock and the extent to which we are able to secure working capital from other sources. If obtaining sufficient funding from Lincoln Park were to prove unavailable or prohibitively dilutive, we will need to secure another source of funding in order to satisfy our working capital needs. Even if we sell all \$20,000,000 under the Purchase Agreement to Lincoln Park, we will need additional capital to fully implement our business, operating and development plans. Should the financing we require to sustain our working capital needs be unavailable or prohibitively expensive when we require it, the consequences could be a material adverse effect on our business, operating results, financial condition and prospects.

Risks Associated with Management

If we are unable to hire and retain key personnel, we may not be able to implement our business plan.

Due to the specified nature of our business, having certain key personnel is essential to the development and marketing of the products we plan to sell and thus to the entire business itself. Consequently, the loss of any of those individuals may have a substantial effect on our future success or failure. We may have to recruit qualified personnel with competitive compensation packages, equity participation, and other benefits that may affect the working capital available for our operations. Management may have to seek to obtain outside independent professionals to assist them in assessing the merits and risks of any business proposals as well as assisting in the development and operation of many company projects. No assurance can be given that we will be able to obtain such needed assistance on terms acceptable to us. Our failure to attract additional qualified employees or to retain the services of key personnel could have a material adverse effect on our operating results and financial condition.

Risks Related to Our Common Stock

Our stock price may be volatile.

The stock market, particularly in recent years, has experienced significant volatility particularly with respect to pharmaceutical, biotechnology and other life sciences company stocks. The volatility of pharmaceutical, biotechnology and other life sciences company stocks often does not relate to the operating performance of the companies represented by the stock. Factors that could cause this volatility in the market price of our common stock include:

- results from and any delays in our clinical trials;
- failure or delays in entering additional product candidates into clinical trials;
- failure or discontinuation of any of our research programs;
- research publications that are unfavorable;
- delays in establishing new strategic relationships;
- delays in the development or commercialization of our potential products;
- market conditions in the pharmaceutical and biotechnology sectors and issuance of new or changed securities analysts' reports or recommendations;
- actual and anticipated fluctuations in our financial and operating results;
- developments or disputes concerning our intellectual property or other proprietary rights;
- introduction of technological innovations or new commercial products by us or our competitors;
- issues in manufacturing our potential products;
- market acceptance of our potential products;
- third-party healthcare reimbursement policies;
- FDA or other domestic or foreign regulatory actions affecting us or our industry;
- litigation or public concern about the safety of our product candidates; and
- additions or departures of key personnel.

These and other external factors may cause the market price and demand for our common stock to fluctuate substantially, which may limit or prevent investors from readily selling their shares of common stock and may otherwise negatively affect the liquidity of our common stock. In the past, when the market price of a stock has been volatile, holders of that stock have instituted securities class action litigation against the company that issued the stock. If any of our stockholders brought a lawsuit against us, we could incur substantial costs defending the lawsuit. Such a lawsuit could also divert the time and attention of our management.

We have not and do not anticipate paying any dividends on our common stock.

We have paid no dividends on our common stock to date and it is not anticipated that any dividends will be paid to holders of our common stock in the foreseeable future. While our future dividend policy will be based on the operating results and capital needs of the business, it is currently anticipated that any earnings will be retained to finance our future expansion and for the implementation of our business plan. As an investor, you should take note of the fact that a lack of a dividend can further affect the market value of our stock, and could significantly affect the value of any investment in our Company.

We have identified certain material weaknesses in our internal control over financial reporting. If we fail to establish and maintain an effective system of internal control, we may not be able to report our financial results accurately or to prevent fraud. Any inability to report and file our financial results accurately and timely could harm our reputation and adversely impact the trading price of our common stock.

Effective internal control is necessary for us to provide reliable financial reports and prevent fraud. In connection with the preparation of our financial statements for the year ended December 31, 2014 and the three months ended June 30, 2015, we concluded that there were material weaknesses in our internal control over financial reporting. A material weakness is a significant deficiency, or a combination of significant deficiencies, in internal control over financial reporting such that it is reasonably possible that a material misstatement of the annual or interim financial statements will not be prevented or detected on a timely basis. We have identified certain material weaknesses in our internal controls resulting from:

Inadequate segregation of duties and effective risk assessment; and
Insufficient written policies and procedures for accounting and financial reporting with respect to the requirements and application of both United States generally accepted accounting principles and SEC guidelines.

While we have designed and implemented, or expect to implement, measures that we believe address or will address these control weaknesses, we continue to develop our internal controls, processes and reporting systems by, among other things, hiring qualified personnel with expertise to perform specific functions, implementing software systems to manage our revenue and expenses and to allow us to budget, undertaking multi-year financial planning and analyses and designing and implementing improved processes and internal controls, including ongoing senior management review and audit committee oversight. We commenced measures to remediate the identified material weaknesses during the second quarter of 2015 by hiring additional staff and adding additional resources and expect to remediate the material weaknesses by the end of 2015. We expect to incur additional costs to remediate these weaknesses, primarily personnel costs and external consulting fees. We may not be successful in implementing these systems or in developing other internal controls, which may undermine our ability to provide accurate, timely and reliable reports on our financial and operating results. Further, we will not be able to fully assess whether the steps we are taking will remediate the material weaknesses in our internal control over financial reporting until we have completed our implementation efforts and sufficient time passes in order to evaluate their effectiveness. In addition, if we identify

additional material weaknesses in our internal control over financial reporting, we may not detect errors on a timely basis and our financial statements may be materially misstated. Moreover, in the future we may engage in business transactions, such as acquisitions, reorganizations or implementation of new information systems that could negatively affect our internal control over financial reporting and result in material weaknesses.

If we identify new material weaknesses in our internal control over financial reporting, if we are unable to comply with the requirements of Section 404 of the Sarbanes-Oxley Act in a timely manner, if we are unable to assert that our internal control over financial reporting is effective, or if our independent registered public accounting firm is unable to express an opinion as to the effectiveness of our internal control over financial reporting, we may be late with the filing of our periodic reports, investors may lose confidence in the accuracy and completeness of our financial reports and the market price of our common stock could be negatively affected. As a result of such failures, we could also become subject to investigations by the stock exchange on which our securities are listed, the SEC, or other regulatory authorities, and become subject to litigation from investors and stockholders, which could harm our reputation, financial condition or divert financial and management resources from our core business.

S-14

Our common stock is currently deemed a “penny stock,” which makes it more difficult for our investors to sell their shares.

Our common stock is subject to the “penny stock” rules adopted under Section 15(g) of the Exchange Act. The penny stock rules generally apply to companies whose common stock is not listed on The Nasdaq Stock Market or other national securities exchange and trades at less than \$5.00 per share, other than companies that have had average revenue of at least \$6,000,000 for the last three years or that have tangible net worth of at least \$5,000,000 (\$2,000,000 if the company has been operating for three or more years). These rules require, among other things, that brokers who trade penny stock to persons other than “established customers” complete certain documentation, make suitability inquiries of investors and provide investors with certain information concerning trading in the security, including a risk disclosure document and quote information under certain circumstances. Many brokers have decided not to trade penny stocks because of the requirements of the penny stock rules and, as a result, the number of broker-dealers willing to act as market makers in such securities is limited. If we remain subject to the penny stock rules for any significant period, it could have an adverse effect on the market, if any, for our securities. If our securities are subject to the penny stock rules, investors will find it more difficult to dispose of our securities.

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.

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, or issued upon the exercise of outstanding options or warrants, it could create a circumstance commonly referred to as an “overhang” and 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, also could make more difficult our ability 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.

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

Our board of directors has the authority to fix and determine the relative rights and preferences of preferred stock and has designated 250,000 preferred shares as Series A Convertible Preferred Stock, 3,000,000 as Series B Convertible Preferred Stock, 750,000 as Series C Convertible Preferred Stock, 1,300 as Series D 8% Convertible Preferred Stock, 13,335 as Series E 12% Convertible Preferred Stock, 10,000 as Series G Preferred Stock, and 10,000 as Series H 12% Convertible Preferred Stock. Our board of directors also has the authority to issue additional shares of our preferred stock without further stockholder approval. As a result, our board of directors could authorize the issuance of a series of preferred stock that would grant to holders the preferred right to our assets upon liquidation, the right to receive dividend payments before dividends are distributed to the holders of common stock and the right to the redemption of the shares, together with a premium, prior to the redemption of our common stock. In addition, our board of directors

could authorize the issuance of a series of preferred stock that has greater voting power than our common stock or that is convertible into our common stock, which could decrease the relative voting power of our common stock or result in dilution to our existing stockholders.

The sale or issuance of our common stock to Lincoln Park may cause dilution and the sale of the shares of common stock acquired by Lincoln Park, or the perception that such sales may occur, could cause the price of our common stock to fall

On March 7, 2014, we entered into the Purchase Agreement with Lincoln Park, pursuant to which Lincoln Park has committed to purchase up to \$20,000,000 of our common stock. Concurrently with the execution of the Purchase Agreement on March 7, 2014, we issued 26,667 shares of our common stock to Lincoln Park for a total purchase price of \$400,000 in the Initial Purchase under the Purchase Agreement and 40,000 Initial Commitment Shares to Lincoln Park as a fee for its commitment to purchase additional shares of our common stock under the Purchase Agreement. The additional shares that may be sold pursuant to the Purchase Agreement may be sold by us to Lincoln Park at our discretion from time to time over a 30-month period commencing June 17, 2014. As of June 11, 2015 we have issued an aggregate of 436,322 shares of common stock, of which 6,410 shares were for commitment fees.

Other than with respect to the Initial Purchase by Lincoln Park under the Purchase Agreement, the purchase price for the shares that we may sell to Lincoln Park under the Purchase Agreement will fluctuate based on the market price of our common stock. Depending on market liquidity at the time, sales of such shares may cause the market price of our common stock to fall.

We generally have the right to control the timing and amount of any sales of our shares to Lincoln Park, except that, pursuant to the terms of our agreements with Lincoln Park, we would be unable to sell shares to Lincoln Park if and when the closing sale price of our common stock is below \$6.00 per share, subject to adjustment as set forth in the Purchase Agreement. Additional sales of our common stock, if any, to Lincoln Park will depend upon market conditions and other factors to be determined by us. As such, other than the Initial Purchase, Lincoln Park may ultimately purchase all, some or none of the shares of our common stock that may be sold pursuant to the Purchase Agreement and, after it has acquired shares, Lincoln Park may sell all, some or none of those shares. Therefore, sales to Lincoln Park by us could result in substantial dilution to the interests of other holders of our common stock. Additionally, the sale of a substantial number of shares of our common stock to Lincoln Park, or the anticipation of such sales, could make it more difficult for us to sell equity or equity-related securities in the future at a time and at a price that we might otherwise wish to effect sales.

Risks Related to this Offering

Management will have broad discretion as to the use of the proceeds from this offering, and we may not use the proceeds effectively.

We have not designated any portion of the net proceeds from this offering to be used for any particular purpose. Accordingly, our management will have broad discretion as to the application of the net proceeds from this offering, and could spend the proceeds in ways that do not necessarily improve our operating results or enhance the value of our common stock.

If you purchase the Series H Preferred Stock sold in this offering, assuming it is converted into shares of our common stock, you will experience immediate and substantial dilution in the net tangible book value per share of the common stock you purchase.

Since the price per share of our Series H Preferred Stock being offered is substantially higher than the net tangible book value per share of our common stock, you will suffer substantial dilution with respect to the net tangible book value of the common stock issuable upon the conversion of the Series H Preferred Stock you purchase in this offering. In the event that you exercise your Warrants, you will experience additional dilution to the extent that the exercise price of these Warrants is higher than the net tangible book value per share of our common stock. If we issue

additional common stock, or securities convertible into or exchangeable or exercisable for common stock, our stockholders, including investors who purchase shares of common stock in this offering, may experience additional dilution, and any such issuances may result in downward pressure on the price of our common stock. We may not 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.

There is no public market for the Series H Preferred Stock and Warrants in this offering.

There is no established public trading market for the Series H Preferred Stock and Warrants being offered in this offering, and we do not expect a market to develop. In addition, we do not intend to apply for listing of the Series H Preferred Stock or the Warrants on any national securities exchange or other nationally recognized trading system. Without an active market, the liquidity of the Series H Preferred Stock and Warrants will be limited.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement and accompanying prospectus contains forward-looking statements. Such forward-looking statements include those that express plans, anticipation, intent, contingency, goals, targets or future development and/or otherwise are not statements of historical fact. These forward-looking statements are based on our current expectations and projections about future events and they are subject to risks and uncertainties known and unknown that could cause actual results and developments to differ materially from those expressed or implied in such statements.

In some cases, you can identify forward-looking statements by terminology, such as “expects”, “anticipates”, “intends”, “estimates”, “plans”, “potential”, “possible”, “probable”, “believes”, “seeks”, “may”, “will”, “should”, “could” or the negative or other similar expressions. Accordingly, these statements involve estimates, assumptions and uncertainties that could cause actual results to differ materially from those expressed in them. Any forward-looking statements are qualified in their entirety by reference to the factors discussed throughout this prospectus supplement and accompanying prospectus.

You should read this prospectus supplement and the accompanying prospectus and the documents that we reference herein and therein, completely and with the understanding that our actual future results may be materially different from what we expect. You should assume that the information appearing in this prospectus supplement and accompanying prospectus is accurate as of the date on the front cover of this prospectus supplement only. Because the risk factors referred to above could cause actual results or outcomes to differ materially from those expressed in any forward-looking statements made by us or on our behalf, you should not place undue reliance on any forward-looking statements. These risks and uncertainties, along with others, are described above under the heading “Risk Factors” beginning on page __ of this prospectus supplement. Further, any forward-looking statement speaks only as of the date on which it is made, and we undertake no obligation to update any forward-looking statement to reflect events or circumstances after the date on which the statement is made or to reflect the occurrence of unanticipated events. New factors emerge from time to time, and it is not possible for us to predict which factors will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. We qualify all of the information presented in this prospectus supplement, and particularly our forward-looking statements, by these cautionary statements.

This prospectus supplement and accompanying prospectus also includes estimates of market size and industry data that we obtained from industry publications and surveys and internal company sources. The industry publications and surveys used by management to determine market size and industry data contained in this prospectus have been obtained from sources believed to be reliable.

USE OF PROCEEDS

We estimate that the net proceeds we will receive from this offering will be approximately \$290,000, after deducting estimated offering expenses.

We currently intend to use the net proceeds from this offering to fund our research and development activities, general corporate purposes and for working capital purposes.

We have not yet determined the amount of net proceeds to be used specifically for any of the foregoing purposes. Accordingly, our management will have significant discretion and flexibility in applying the net proceeds from this offering. Pending any use, as described above, we intend to invest the net proceeds in high-quality, short-term, interest-bearing securities.

S-18

DIVIDEND POLICY

We have never declared or paid cash dividends on our capital stock. We currently intend to retain our future earnings, if any, for use in our business and therefore do not anticipate paying cash dividends in the foreseeable future. Payment of future dividends, if any, will be at the discretion of our board of directors after taking into account various factors, including our financial condition, operating results, current and anticipated cash needs and plans for expansion.

S-19

DESCRIPTION OF THE SECURITIES WE ARE OFFERING

We are offering 330 shares of Series H Preferred Stock which are initially convertible into 916,667 shares of our common stock assuming a conversion price of \$0.36 per share and Warrants initially exercisable for 140,250 shares of common stock.

Common Stock

As of the date of this prospectus supplement, our authorized capital stock consists of 35,000,000 shares of common stock, par value \$0.001 per share, and 10,000,000 shares of undesignated preferred stock, par value \$0.001 per share, of which 250,000 are designated Series A Convertible Preferred Stock, 3,000,000 are designated Series B Convertible Preferred Stock, 750,000 are designated Series C Convertible Preferred Stock, 1,300 are designated Series D Convertible Preferred Stock, 13,335 are designated Series E Convertible Preferred Stock and 10,000 are designated Series G Convertible Preferred Stock. 10,000 shares have been designated as Series H Preferred Stock to be offered and sold pursuant to this prospectus supplement and the accompanying prospectus. As of November 11, 2015, there were 9,674,912 shares of our common stock outstanding and there were no shares of Series A Convertible Preferred Stock outstanding, no shares of Series B Convertible Preferred Stock outstanding, 750,000 shares of Series C Convertible Preferred Stock outstanding, 350 shares of Series D Convertible Preferred Stock outstanding, 9,122.22 shares of Series E Convertible Preferred Stock outstanding, no shares of Series G Convertible Preferred Stock outstanding and 2,749.556 shares of Series H Convertible Preferred Stock outstanding.

The material terms and provisions of our common stock and each other class of our securities which may qualify or limit the rights and privileges of our common stock are described under the caption “Description of Capital Stock” in the accompanying prospectus.

The transfer agent for our common stock is VStock Transfer, LLC. Our common stock is traded on the OTC QX under the symbol “AMBS.”

Series H Preferred Stock

The following summary of certain terms and provisions of our Series H Preferred Stock offered in this offering is subject to, and qualified in its entirety by reference to, the terms and provisions set forth in our certificate of designation of preferences, rights and limitations of Series H Convertible Preferred Stock.

General. Our certificate of incorporation authorizes our board of directors to issue up to 10,000,000 shares of our preferred stock, par value \$0.001 per share.

Subject to the limitations prescribed by our articles of incorporation, our board of directors is authorized to establish the number of shares constituting each series of preferred stock and to fix the designations, powers, preferences and rights of the shares of each of those series and the qualifications, limitations and restrictions of each of those series, all without any further vote or action by our stockholders. Our board of directors has designated 10,000 of the 10,000,000 authorized shares of preferred stock as Series H Preferred Stock. When issued, the shares of Series H Preferred Stock will be validly issued, fully paid and non-assessable.

Rank. The Series H Preferred Stock will rank:

senior to all of our common stock to the extent of its liquidation preference of \$1,000 per share;

senior to any class or series of our capital stock hereafter created specifically ranking by its terms junior to the Series H Preferred Stock to the extent of its liquidation preference of \$1,000 per share;

senior to warrants to purchase shares of our common stock outstanding before this offering, warrants to purchase 70,125 shares of our common stock to be issued in this offering, in each case to the extent of its liquidation preference of \$1,000.00; and

S-20

on parity to any class or series of our capital stock hereafter created specifically ranking by its terms on parity with the Series H Preferred Stock

in each case, as to distributions of assets upon our liquidation, dissolution or winding up whether voluntarily or involuntarily.

Conversion. Each share of the Series H Preferred Stock is convertible into shares of our common stock (subject to adjustment as provided in the related certificate of designation of preferences) at any time at the option of the holder, at an initial conversion price of the lower of (i) \$2.50, subject to adjustment and (ii) 75%, subject to adjustment, of the lowest volume weighted average price, or VWAP, during the fifteen (15) Trading Days immediately prior to the date a Conversion Notice is sent to us by a holder, provided that the holder will be prohibited from converting Series H Preferred Stock into shares of our common stock if, as a result of such conversion, the holder, together with its affiliates, would own more than 4.99% of the total number of shares of our common stock then issued and outstanding, which limit may be increased to 9.99% at the option of the holder.

Liquidation Preference. In the event of our liquidation, dissolution or winding up, holders of the Series H Preferred Stock will receive a payment equal to \$1,000 per share of Series H Preferred Stock before any proceeds are distributed to the holders of our common stock. Following the payment described in the preceding sentence, the holders of the Series H Preferred Stock will participate, on an as-if-converted-to-common stock basis, in any distributions to the holders of common stock.

Voting Rights. Shares of Series H Preferred Stock will generally have no voting rights, except as required by law and except that the consent of the holders of the outstanding Series H Preferred Stock will be required to amend any provision of our certificate of incorporation that would have a materially adverse effect on the rights of the holders of the Series H Preferred Stock.

Dividends. Each share of Series H Preferred Stock shall be entitled to receive, and we shall pay, cumulative dividends (i) for the 12 month period beginning on date of issuance, or the Initial 12 Month Period, and (ii) for each subsequent twelve 12 month period beginning on the first calendar day, or the First Day of a Subsequent 12 Month Period, following the last calendar day of the prior twelve (12) month period and terminating 12 months thereafter, or a Subsequent 12 Month Period, provided that for each Subsequent 12 Month Period the share of Series H Preferred Stock is issued and outstanding on the First Day of a Subsequent 12 Month Period, at the rate per share of Series H Preferred Stock (as a percentage of the stated value per share) equal to 12% per annum all of which dividends shall be guaranteed and the total amount of dividends due on each share of Series H Preferred Stock for each twelve (12) month period shall be deemed earned (i) as to the Initial 12 Month Period, on date of issuance; and (ii) for each Subsequent 12 Month Period, on the First Day of a Subsequent 12 Month Period.

Certain Adjustments. The conversion price of the Series H Preferred Stock is subject to adjustment upon the occurrence of specific events, including stock dividends, stock splits, combinations and reclassifications of our common stock. Additionally, the conversion price of the Series H Preferred Stock is subject to certain adjustments if we issue or sell any additional shares of common stock or common stock equivalents at a price per share less than the conversion price then in effect, or without consideration, the conversion price then in effect will be adjusted. Notwithstanding the foregoing, there will be no adjustment to the conversion price with respect to the sale or issuance of certain excluded securities.

Redemption. We shall have the right to redeem all (but not less than all) shares of the Series H Preferred Stock at any time after issuance, at a redemption price per share then issued and outstanding, equal to the product of (i) 120% (130% if a qualified public offering has occurred), multiplied by (ii) the sum of (x) the stated value, (y) all accrued but unpaid dividends, and (z) all other amount due to the holder.

Exchange Listing. We do not plan on making an application to list the Series H Preferred Stock on the OTC QX, any national securities exchange or other nationally recognized trading system. We expect the common stock issuable upon conversion of the Series H Preferred Stock to be listed on the OTC QX.

Negative Covenants. From the date hereof until the date no shares of Series H Preferred Stock are issued and outstanding, unless holders of at least 75% in stated value of the then outstanding shares of Series H Preferred Stock shall have otherwise given prior written consent, we shall not:

a) other than permitted indebtedness, enter into, create, incur, assume, guarantee or suffer to exist any indebtedness for borrowed money of any kind, including but not limited to, a guarantee, on or with respect to any of our property or assets now owned or hereafter acquired or any interest therein or any income or profits therefrom;

b) other than permitted liens, enter into, create, incur, assume or suffer to exist any liens of any kind, on or with respect to any of our property or assets now owned or hereafter acquired or any interest therein or any income or profits therefrom;

c) amend our charter documents, including, without limitation, our articles of incorporation and bylaws, in any manner that materially and adversely affects any rights of the holder;

d) repay, repurchase or offer to repay, repurchase or otherwise acquire of any shares of our common stock, common stock equivalents or junior securities;

e) pay cash dividends or distributions on our junior securities;

f) enter into any transaction with any of our Affiliates which would be required to be disclosed in any public filing with the SEC, unless such transaction is made on an arm's-length basis and expressly approved by a majority of our disinterested directors; or

g) hire and/or pay directly and/or indirectly, whether in cash, securities or otherwise and/or any investment banker, borrower/dealer and/or advisor for the purpose and/or in connection with any direct and/or indirect capital raise including any loans.

Common Stock Purchase Warrants

The following summary of certain terms and provisions of our Warrants offered in this offering is subject to, and qualified in its entirety by reference to, the terms and provisions set forth in our form of Warrant.

Exercisability. The warrants are exercisable beginning on the date of original issuance and at any time up to the date that is five years after such date. The warrants will be exercisable, at the option of each holder, in whole or in part by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our common stock purchased upon such exercise (except in the case of a cashless exercise as discussed below). Unless otherwise specified in the warrant, the holder will not have the right to exercise any portion of the warrant if the holder (together with its affiliates) would beneficially own in excess of 4.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the warrants.

Cashless Exercise. In the event that a registration statement covering shares of common stock underlying the warrants, or an exemption from registration, is not available for the resale of such shares of common stock underlying the warrants, the holder may, in its sole discretion, exercise the warrant in whole or in part and, in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, elect instead to receive upon such exercise the net number of shares of common stock determined according to the formula set forth in the warrant. In no event shall we be required to make any cash payments or net cash settlement to the registered holder in lieu of issuance of common stock underlying the warrants.

Exercise Price. The initial exercise price per share of common stock purchasable upon exercise of the warrants is \$2.50 per share. The exercise price is subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our common stock and also upon any distributions of assets, including cash, stock or other property to our stockholders.

Certain Adjustments. The exercise price and the number of shares of common stock purchasable upon the exercise of the warrants are subject to adjustment upon the occurrence of specific events, including stock dividends, stock splits, combinations and reclassifications of our common stock. Additionally, the exercise price of the warrants is subject to certain adjustments if we issue or sell any additional shares of common stock or common stock equivalents at a price per share less than the exercise price then in effect, or without consideration, the exercise price then in effect will be adjusted. Notwithstanding the foregoing, there will be no adjustment to the exercise price with respect to the sale or issuance of certain excluded securities.

Redemption. After 18 months from date of issuance, in the event that (i) the closing bid price or closing sale price of the common stock is at least equal to \$7.00 (subject to adjustment for stock splits, stock dividends, reorganizations, and the like) for a thirty (30) consecutive Trading Day period prior to the Trading Day a Redemption Note (as defined below) is sent by us to the holder ("Pre-Call Period"), and (ii) for each trading day during the Pre-Call Period, [the trading volume for the common stock is at least equal to 300,000 shares, then we shall have the right, upon at least ten (10) Trading Days' prior written notice to the holder (the "Redemption Notice"), to redeem all or any portion of the warrant shares underlying the Warrants, at a redemption price equal to \$7.00 per warrant share.

Transferability. Subject to applicable laws, the warrants may be transferred at the option of the holders upon surrender of the warrants to us together with the appropriate instruments of transfer.

Exchange Listing. There is no established public trading market for the warrants. We do not plan on making an application to list the warrants on any national securities exchange or other nationally recognized trading system.

Fundamental Transaction. If, at any time while the warrants are outstanding, (1) we consolidate or merge with or into another corporation and we are not the surviving corporation, (2) we sell, lease, license, assign, transfer, convey or otherwise dispose of all or substantially all of our assets, (3) any purchase offer, tender offer or exchange offer (whether by us or another individual or entity) is completed pursuant to which holders of our shares of common stock are permitted to sell, tender or exchange their shares of common stock for other securities, cash or property and has been accepted by the holders of 50% or more of our outstanding shares of common stock, (4) we effect any reclassification or recapitalization of our shares of common stock or any compulsory share exchange pursuant to which our shares of common stock are converted into or exchanged for other securities, cash or property, or (5) we consummate a stock or share purchase agreement or other business combination with another person or entity whereby such other person or entity acquires more than 50% of our outstanding shares of common stock, each, a "Fundamental Transaction," then upon any subsequent exercise of the warrants, the holders thereof will have the right to receive the same amount and kind of securities, cash or property as it would have been entitled to receive upon the occurrence of such Fundamental Transaction if it had been, immediately prior to such Fundamental Transaction, the holder of the number of warrant shares then issuable upon exercise of the warrant, and any additional consideration payable as part of the Fundamental Transaction.

Rights as a Stockholder. Except as otherwise provided in the warrants or by virtue of such holder's ownership of shares of our common stock, the holder of a warrant does not have the rights or privileges of a holder of our common stock, including any voting rights, until the holder exercises the warrant.

S-23

PLAN OF DISTRIBUTION

We will enter into securities purchase agreements directly with certain institutional investors. We currently anticipate that the closing of this offering will occur on or about November 12, 2015, subject to customary closing conditions. On the closing date, the following will occur:

- we will receive funds in the amount of the aggregate purchase price;
- we will deliver the shares of Series H Preferred Stock and Warrants to the investors.

We estimate the total expenses of this offering which will be payable by us, will be approximately \$10,000. After deducting our estimated offering expenses, we expect the net proceeds from this offering to be approximately \$290,000.

A copy of the form of securities purchase agreement we entered into with certain of the purchasers and the form of warrant will be included as exhibits to our current report on Form 8-K that will be filed with the SEC in connection with the consummation of this offering.

Our common stock is currently quoted on the OTC QX under the symbol "AMBS". The transfer agent and registrar for our common stock is VStock Transfer, LLC, with an address of 18 Lafayette Place, Woodmere, NY 11598. We will act as transfer agent for the Series H Preferred Stock and Warrants being offered hereby.

LEGAL MATTERS

Certain legal matters with respect to the validity of the securities offered by this prospectus supplement will be passed upon for us by Sichenzia Ross Friedman Ferenca LLP, New York, New York.

EXPERTS

The consolidated financial statements as of and for the years ended December 31, 2014 and 2013 incorporated by reference into this prospectus supplement have been so incorporated in reliance on the reports of Marcum LLP, an independent registered public accounting firm, incorporated herein by reference, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus supplement and the accompanying prospectus are part of the registration statement on Form S-3 we filed with the Securities and Exchange Commission, or SEC, under the Securities Act, and do not contain all the information set forth in the registration statement. Whenever a reference is made in this prospectus supplement or the accompanying prospectus to any of our contracts, agreements or other documents, the reference may not be complete, and you should refer to the exhibits that are a part of the registration statement or the exhibits to the reports or other documents incorporated by reference into this prospectus supplement and the accompanying prospectus for a copy of such contract, agreement or other document. You may inspect a copy of the registration statement, including the exhibits and schedules, without charge, at the SEC's public reference room mentioned below, or obtain a copy from the SEC upon payment of the fees prescribed by the SEC.

Because we are subject to the information and reporting requirements of the Exchange Act, we file annual, quarterly and special reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at www.sec.gov. You may also read and copy any document we file at the SEC's Public Reference Room at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the Public Reference Room.

INCORPORATION OF DOCUMENTS BY REFERENCE

Edgar Filing: Amaranthus Bioscience Holdings, Inc. - Form 424B5

We incorporate by reference the filed documents listed below, except as superseded, supplemented or modified by this prospectus, and any future filings we will make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (unless otherwise noted, the SEC file number for each of the documents listed below is 000-55016):

- our Annual Report on Form 10-K for the year ended December 31, 2014 filed on April 6, 2015;
- our Quarterly Reports on Form 10-Q for the quarter ended March 31, 2015 filed on May 19, 2015 and the quarter ended June 30, 2015 filed on August 14, 2015;
- our Current Reports on Form 8-K or 8-K/A filed with the SEC on January 12, 2015, January 13, 2015, January 14, 2015, January 15, 2015, February 13, 2015, February 25, 2015, February 26, 2015, March 3, 2015, March 25, 2015, March 31, 2015, April 2, 2015, April 28, 2015, April 29, 2015, May 5, 2015, May 8, 2015, May 11, 2015, May 13, 2015, May 14, 2015, May 15, 2015, May 21, 2015, May 22, 2015, May 26, 2015, June 5, 2015, June 9, 2015, June 15, 2015, July 8, 2015, July 15, 2015, July 20, 2015, July 22, 2015, August 3, 2015, August 6, 2015, August 20, 2015, September 3, 2015, September 14, 2015, October 1, 2015; October 8, 2015; and October 28, 2015;
- our Definitive Proxy Statement on Schedule 14A filed with the SEC on July 21, 2015 and Definitive Additional Materials filed with the SEC on August 4, 2015, August 7, 2015 and August 26, 2015;
- our Definitive Proxy Statement on Schedule 14A, filed with the SEC on November 4, 2015
- the description of our common stock contained in our Form 8-A filed with the SEC on August 2, 2013

In addition, all documents filed by us pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act on or after the date of this prospectus supplement and before the termination of the offering under this prospectus supplement are deemed to be incorporated by reference into, and to be a part of, this prospectus supplement.

You may request, and we will provide you with, a copy of these filings, at no cost, by calling us at (415) 688-4484 or by writing to us at the following address:

Amarantus BioScience Holdings, Inc.

655 Montgomery Street, Suite 900

San Francisco, CA 94111

Attn.: Corporate Secretary

S-26

PROSPECTUS

\$150,000,000

Common Stock

Preferred Stock

Warrants

Units

We may offer and sell, from time to time in one or more offerings, any combination of common stock, preferred stock, warrants or units having an aggregate initial offering price not exceeding \$150,000,000. The preferred stock, warrants, and units may be convertible or exercisable or exchangeable for common stock or preferred stock or other securities of ours. When we decide to sell a particular class or series of securities, we will provide specific terms of the offered securities in a prospectus supplement.

We will provide specific terms of the offerings of our securities in supplements to this prospectus. The prospectus supplement may also add, update or change information in this prospectus. You should read this prospectus and any prospectus supplement, as well as the documents incorporated by reference or deemed to be incorporated by reference into this prospectus, carefully before you invest.

This prospectus may not be used to offer or sell our securities unless accompanied by a prospectus supplement relating to the offered securities.

Our common stock is presently traded on the OTC QB under the symbol “AMBS.” On May 1, 2015, the last reported sale price of our common stock was \$0.0471.

These securities may be sold directly by us, through dealers or agents designated from time to time, to or through underwriters, dealers or through a combination of these methods on a continuous or delayed basis. See “Plan of Distribution” in this prospectus. We may also describe the plan of distribution for any particular offering of our securities in a prospectus supplement. If any agents, underwriters or dealers are involved in the sale of any securities in respect of which this prospectus is being delivered, we will disclose their names and the nature of our arrangements with them in a prospectus supplement. The net proceeds we expect to receive from any such sale will also be included in a prospectus supplement.

Investing in our securities involves various risks. See “Risk Factors” beginning on page 6 for more information on these risks. Additional risks will be described in the related prospectus supplements under the heading “Risk Factors”. You should review that section of the related prospectus supplements for a discussion of matters that investors in our securities should consider.

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 or any accompanying prospectus supplement. Any representation to the contrary is a criminal offense.

The date of this prospectus is May 22, 2015.

TABLE OF CONTENTS

| | Page |
|--|-------------|
| <u>ABOUT THIS PROSPECTUS</u> | 1 |
| <u>OUR BUSINESS</u> | 1 |
| <u>RISK FACTORS</u> | 4 |
| <u>DISCLOSURE REGARDING FORWARD-LOOKING STATEMENTS</u> | 10 |
| <u>USE OF PROCEEDS</u> | 10 |
| <u>THE SECURITIES WE MAY OFFER</u> | 10 |
| <u>DESCRIPTION OF CAPITAL STOCK</u> | 11 |
| <u>DESCRIPTION OF WARRANTS</u> | 13 |
| <u>DESCRIPTION OF UNITS</u> | 15 |
| <u>PLAN OF DISTRIBUTION</u> | 15 |
| <u>LEGAL MATTERS</u> | 17 |
| <u>EXPERTS</u> | 17 |
| <u>WHERE YOU CAN FIND MORE INFORMATION</u> | 17 |
| <u>INCORPORATION OF DOCUMENTS BY REFERENCE</u> | 17 |

ABOUT THIS PROSPECTUS

This prospectus is part of a shelf registration statement that we filed with the Securities and Exchange Commission (the “SEC”) using a “shelf” registration process. Under this shelf registration process, we may sell any combination of the securities described in this prospectus in one or more offerings from time to time having an aggregate initial offering price of \$150,000,000. This prospectus provides you with a general description of the securities we may offer. Each time we offer securities, we will provide you with a prospectus supplement that describes the specific amounts, prices and terms of the securities we offer. The prospectus supplement also may add, update or change information contained in this prospectus. You should read carefully both this prospectus and any prospectus supplement together with additional information described below under the caption “Where You Can Find More Information.”

This prospectus does not contain all the information provided in the registration statement we filed with the SEC. You should read both this prospectus, including the section titled “Risk Factors,” and the accompanying prospectus supplement, together with the additional information described under the heading “Where You Can Find More Information.”

You should rely only on the information contained or incorporated by reference in this prospectus or a prospectus supplement. We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. This prospectus is not an offer to sell securities, and it is not soliciting an offer to buy securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus or any prospectus supplement, as well as information we have previously filed with the SEC and incorporated by reference, is accurate as of the date on the front of those documents only. Our business, financial condition, results of operations and prospects may have changed since those dates.

OUR BUSINESS

Company Overview

Amarantus Bioscience Holdings, Inc. (the “Company”) is a California based biopharmaceutical company founded in January 2008. We own or have exclusive licenses to various product candidates in the biopharmaceutical and diagnostic areas of the healthcare industry. We are developing our diagnostic product candidates in the field of neurology, and our therapeutic product candidates in the areas of neurology, psychiatry, ophthalmology and regenerative medicine. Our business model is to develop our product candidates through various de-risking milestones that we believe will be accretive to shareholder value, and will position them to be strategically partnered with pharmaceutical companies, diagnostic companies and/or other stakeholders in order to more efficiently achieve

regulatory approval and commercialization.

We have three operating divisions: the diagnostics division; the therapeutics division; and the other drug discovery division.

Diagnostics Division

Within our diagnostics division, we are developing the following product candidates:

LymPro Test ®

The Lymphocyte Proliferation Test (“LymPro Test®”, or “LymPro”) is a diagnostic blood test for Alzheimer’s disease originally developed by the University of Leipzig in Germany. The test works by evaluating the cell surface marker CD69 on peripheral blood lymphocytes following a mitogenic stimulation. The underlying scientific basis for LymPro is that Alzheimer’s patients have a dysfunctional cellular machinery division process that inappropriately allows mature neurons in the brain to enter the mitotic process (cell division /cell cycle). When this happens the neurons start the cell division process, but cannot complete the process. As a result, a number of cytokines and other genes are up-regulated, ultimately leading to cell death by apoptosis. This inappropriate cell division activation process is also present in the lymphocytes of Alzheimer’s patients, as lymphocytes share similar cellular division machinery with brain neurons. We measure the integrity of this cellular machinery division process by measuring CD69 up-regulation in response to the mitogenic stimulation. If CD 69 is up-regulated it means that the cellular machinery division process is correct and Alzheimer’s is not present. If CD69 is not up-regulated, it means there is a dysfunctional cellular machinery division process, and Alzheimer’s is more likely. Data has been published in peer-reviewed publications on LymPro with 160 patients, demonstrating 92% co-positivity and 91% co-negativity with an overall 95% accuracy rating for LymPro.

In 2014, we completed a 'Fit-for-Purpose' assay validation for LymPro at Icon Central Laboratories in Farmingdale, NY, enabling LymPro to be offered to the pharmaceutical industry for diagnosis of patients entering clinical trials for Alzheimer’s disease, as a means of mitigating the risk of selecting the wrong patients for inclusion in such clinical studies. Biomarker services using LymPro Test® biomarker data are now available to the pharmaceutical industry for Investigational Use Only (IUO), in such pharmaceutical therapeutic clinical development programs.

MSPrecise®

In January 2015, we acquired MSPrecise®, which is a proprietary next-generation DNA sequencing (NGS) assay for the identification of patients with relapsing-remitting multiple sclerosis (RRMS) at first clinical presentation. MSPrecise® utilizes next-generation sequencing to measure DNA mutations found in rearranged immunoglobulin genes in immune cells initially isolated from cerebrospinal fluid. If successful, MSPrecis® should augment the current standard of care for the diagnosis of MS, by providing a more accurate assessment of a patient's immune response to a challenge within the central nervous system. MSPrecise® offers a novel method of measuring changes in adaptive human immunity and may also be able to discern individuals whose disease is more progressive and requires more aggressive treatment.

Final results from a pivotal clinical validation study demonstrated that MSPrecise® met the primary study endpoint in patients suspected of having RRMS. MSPrecise® provided a clear improvement in classifying early-stage RRMS patients when compared with the published performance for the current diagnostic standard of care by cerebrospinal fluid (CSF) analysis. In this study, MSPrecise® not only performed well as a standalone test but, when combined with the current standard of diagnosis, oligoclonal banding (OCB), it demonstrated that it can substantially reduce the number of both false positives and false negatives as compared to use of OCB alone.

Additional Diagnostic Biomarkers

In January 2015, we entered into a one-year, option agreement with Georgetown University for an exclusive license of patent rights related to certain blood based biomarkers for memory loss that Georgetown University and University of Rochester jointly developed and own (the “Georgetown Biomarkers”). In the event that we exercise this option, conditions and milestones will be defined; such as, providing Georgetown with development and commercialization plans for the biomarkers and recruiting a senior executive to lead our diagnostics division, as well as other requirements defined in the option agreement. The diagnostic technologies subject to this option agreement are based on metabolic, genetic and exosomal biomarkers. We believe these may hold additional potential for identifying distinguishing factors in dementia and Alzheimer's disease that will be complementary to our LymPro Test® diagnostic for Alzheimer's disease. With the potential addition of the Georgetown Biomarkers to our Alzheimer's diagnostics portfolio, we are positioning ourselves to provide all three modalities (cell cycle dysregulation, lipidomics and exosomes) for diagnosis of Alzheimer's disease.

In May 2013, we acquired the intellectual property rights to two diagnostic blood test platforms known as NuroPro and BC-SeraPro from the bankruptcy estate of Power3 Medical Products. NuroPro is a neurodegenerative disease diagnostic platform with a lead application in Parkinson's disease. BC-SeraPro is an oncology diagnostic platform with a lead application in breast cancer. Further development of our NuroPro and BC-SeraPro diagnostic platforms are on hold, as we apply our resources to the continuing development of our LymPro Test® and MSPrecise diagnostics, as well as our planned development of the Georgetown Biomarkers.

Therapeutics Division

Within the therapeutics division, we are developing the following product candidates:

Eloprazine

Eloprazine is a small molecule 5HT1a/1b partial agonist in clinical development for the treatment of Parkinson's disease levodopa-induced dyskinesia (PD LID) and Adult Attention Deficit Hyperactivity Disorder ("Adult ADHD"). Eloprazine has been evaluated in over 600 human subjects to date, with a very strong and well-established safety profile. Eloprazine was originally developed by Solvay Pharmaceuticals for the treatment of aggression. Solvay out-licensed the Eloprazine program to PsychoGenics. PsychoGenics licensed Eloprazine to Amaranthus following successful Phase 2a studies in both PD-LID and Adult ADHD, in which both primary and secondary endpoints were met.

In February 2015, we submitted an Investigational New Drug Application ("IND") to the FDA for the Phase 2b program clinical trial for Eloprazine in PD LID, and in March 2015, we received notification of approval from the FDA that the IND was approved. We are now in the process of initiating this Phase 2b clinical study. Following the initiation of the clinical study of Eloprazine in PD LID, we intend to submit a request to the FDA regarding further clinical development of Eloprazine in Adult ADHD.

MANF

MANF (mesencephalic-astrocyte-derived neurotrophic factor) is believed to have broad potential because it is a naturally-occurring protein produced by the body for the purpose of reducing and preventing apoptosis (cell death) in response to injury or disease, via the unfolded protein response. MANF was discovered by the Company's Chief Scientific Officer, Dr. John Commissiong. By manufacturing MANF and administering it to the body, Amaranthus is seeking to use a regenerative medicine approach to assist the body with higher quantities of MANF when needed. Amaranthus is the front-runner and primary holder of intellectual property around MANF, and is focusing on the development of MANF-based protein therapeutics. MANF has demonstrated efficacy as a disease-modifying treatment in various animal models, including retinitis pigmentosa, Parkinson's disease, cardiac ischemia and stroke.

We made a strategic decision to focus the development of MANF in orphan indications. The FDA Orphan Drug Designation program provides a special status to drugs and biologics intended to treat, diagnose or prevent so-called orphan diseases and disorders that affect fewer than 200,000 people in the U.S. This designation provides for a seven-year marketing exclusivity period against competition, as well as certain incentives, including federal grants, tax credits and a waiver of PDUFA filing fees.

In December 2014, the FDA granted MANF orphan drug designation for the treatment of retinitis pigmentosa (RP) and in April 2015 the European Medicines Agency Committee for Orphan Medicinal Products also granted orphan drug status for MANF for the treatment of RP. RP refers to a group of inherited diseases causing retinal degeneration often leading to blindness. Pre-clinical data showed that MANF provided protective functional effects in an animal model of RP. Moreover, toxicology studies have demonstrated that MANF was well tolerated following a single intravitreal administration of a therapeutically relevant dose. Our goal is to continue to build value in our MANF program by seeking other orphan drug designations for MANF, and by continuing work to advance this promising product candidate toward clinical testing in multiple therapeutic areas.

Option to Acquire Additional Product Candidate - Engineered Skin Substitute

In November 2014, we entered into an exclusive option agreement to acquire Engineered Skin Substitute (ESS), an autologous skin replacement product for the treatment of Stage 3 and Stage 4 intractable severe burns. As part of the option agreement, we have also agreed to engage Lonza Walkersville, Inc., a subsidiary of Lonza Group Ltd., to produce ESS for human clinical trials and subsequent commercial distribution.

ESS is a tissue-engineered skin prepared from autologous (patient's own) skin cells. It is a combination of cultured epithelium with a collagen-fibroblast implant that produces a skin substitute that contains both epidermal and dermal components. This model has been shown in preclinical studies to generate a functional skin barrier. Most importantly,

the researchers consider self-to-self skin grafts for autologous skin tissue to be ideal because they are less likely to be rejected by the immune system of the patient, unlike with porcine or cadaver grafts in which immune system rejection is an important possibility.

ESS has the potential to become a revolutionary new treatment for severe burns. The product is produced from a small sample of the patient's own healthy skin. The sample is harvested from a portion of healthy skin remaining on a burn patient's body and is then shipped to Lonza's central laboratory facility for expansion. The proprietary ESS technology can then be applied to produce an expanded sample or graft that is sufficiently large enough to close severe wounds covering the majority of an individual's body, including both the epidermal and dermal layers of the skin. The expanded skin samples are then shipped back in rectangular shapes, with the dimensions of approximately 10 inches by 10 inches, to the severe burn center for surgical transplantation onto the original patient to facilitate wound closure. Wound closure is of critical importance in this setting to promote healing and to reduce the risk of a variety of infections, including sepsis.

ESS is being developed with support from a grant from the Armed Forces Institute for Regenerative Medicine (AFIRM). The AFIRM grant was awarded to support the IND and initial clinical studies. Upon execution of our option to acquire ESS, we anticipate initiating a 10 patient Phase 2 clinical study to evaluate the efficacy of ESS versus meshed split thickness autograft, the current standard of care for the treatment of Stage 3 and Stage 4 intractable severe burns.

Drug Discovery Division

MANF was discovered utilizing our proprietary PhenoGuard™ protein discovery technology, and we believe that this drug discovery platform can be used to discover other, similar neurotrophic factors. Our PhenoGuard™ technology currently consists of 88 cell lines, and we intend to expand the number of such cell lines as we conduct research directed towards the discovery of such additional neurotrophic factors.

Corporate Information

We were incorporated on January 14, 2008 in the state of Delaware and were reincorporated in Nevada on March 22, 2013. The Company is a development stage biopharmaceutical drug development holding company dedicated to sourcing high-potential therapeutic and diagnostic platform technologies and aligning their development with complementary biopharmaceutical assets to reduce overall enterprise risk. Our principal executive offices are located at 655 Montgomery Street, Suite 900, San Francisco, CA 94111 and our telephone number is (415) 688-4484. Our website address is <http://www.amarantus.com/>. The information on, or that can be accessed through, our website is not part of this prospectus.

RISK FACTORS

You should carefully consider the risks described below before making an investment decision. The risks described below are not the only ones we face. Additional risks we are not presently aware of or that we currently believe are immaterial may also impair our business operations. Our business could be harmed by any of these risks. The trading price of our common stock could decline due to any of these risks, and you may lose all or part of your investment. In assessing these risks, you should also refer to the other information contained or incorporated by reference into this prospectus supplement and the accompanying prospectus, including our financial statements and related notes.

Risks Related to Our Product Candidates and Operations

We are largely dependent on the success of our lead product candidates, LymPro, Eltoprazine and MANF, and we may not be able to successfully commercialize these products.

We have incurred and will continue to incur significant costs relating to the development of our lead product candidates, LymPro, Eltoprazine and MANF. We have not obtained approval to commercialize LymPro, Eltoprazine and MANF in any jurisdiction and we may never be able to obtain approval or, if approvals are obtained, to commercialize LymPro, Eltoprazine and MANF successfully.

If we fail to successfully commercialize our products, we may be unable to generate sufficient revenue to sustain and grow our business, and our business, financial condition and results of operations will be adversely affected.

If we fail to obtain U.S. regulatory approval of LymPro, Eltoprazine, MANF or any of our other current or future product candidates, we will be unable to commercialize these potential products in the United States.

The development, testing, manufacturing and marketing of our product candidates are subject to extensive regulation by governmental authorities in the United States. In particular, the process of obtaining FDA approval is costly and time consuming, and the time required for such approval is uncertain. Our product candidates must undergo rigorous preclinical and clinical testing and an extensive regulatory approval process mandated by the FDA. Such regulatory review includes the determination of manufacturing capability and product performance. Generally, only a small percentage of pharmaceutical products are ultimately approved for commercial sale.

We can give no assurance that our current or future product candidates will be approved by the FDA or any other governmental body. In addition, there can be no assurance that all necessary approvals will be granted for future product candidates or that FDA review or actions will not involve delays caused by requests for additional information or testing that could adversely affect the time to market for and sale of our product candidates. Further failure to comply with applicable regulatory requirements can, among other things, result in the suspension of regulatory approval as well as possible civil and criminal sanctions.

Our proprietary rights may not adequately protect our intellectual property and product candidates and if we cannot obtain adequate protection of our intellectual property and product candidates, we may not be able to successfully market our product candidates.

Our commercial success will depend in part on obtaining and maintaining intellectual property protection for our technologies and product candidates. We will only be able to protect our technologies and product candidates from unauthorized use by third parties to the extent that valid and enforceable patents cover them, or those other market exclusionary rights apply.

While we have issued enforceable patents covering our product candidates, the patent positions of life sciences companies, like ours, can be highly uncertain and involve complex legal and factual questions for which important legal principles remain unresolved. No consistent policy regarding the breadth of claims allowed in such companies' patents has emerged to date in the United States. The general patent environment outside the United States also involves significant uncertainty. Accordingly, we cannot predict the breadth of claims that may be allowed or that the scope of these patent rights would provide a sufficient degree of future protection that would permit us to gain or keep our competitive advantage with respect to these products and technology.

Our issued patents may be subject to challenge and possibly invalidated by third parties. Changes in either the patent laws or in the interpretations of patent laws in the United States or other countries may diminish the market exclusionary ability of our intellectual property.

In addition, others may independently develop similar or alternative compounds and technologies that may be outside the scope of our intellectual property. Should third parties obtain patent rights to similar compounds or radiolabeling technology, this may have an adverse effect on our business.

To the extent that consultants or key employees apply technological information independently developed by them or by others to our product candidates, disputes may arise as to the proprietary rights of the information, which may not be resolved in our favor. Consultants and key employees that work with our confidential and proprietary technologies are required to assign all intellectual property rights in their discoveries to us. However, these consultants or key employees may terminate their relationship with us, and we cannot preclude them indefinitely from dealing with our competitors. If our trade secrets become known to competitors with greater experience and financial resources, the competitors may copy or use our trade secrets and other proprietary information in the advancement of their products, methods or technologies. If we were to prosecute a claim that a third party had illegally obtained and was using our trade secrets, it would be expensive and time consuming and the outcome would be unpredictable. In addition, courts outside the United States are sometimes less willing to protect trade secrets than courts in the United States. Moreover, if our competitors independently develop equivalent knowledge, we would lack any contractual claim to this information, and our business could be harmed.

If our product candidates, including LymPro, Eltoprazine, MANF, do not gain market acceptance among physicians, patients and the medical community, we will be unable to generate significant revenue, if any.

The products that we develop may not achieve market acceptance among physicians, patients, third-party payers and others in the medical community. If we, or any of our partners, receive the regulatory approvals necessary for commercialization, the degree of market acceptance will depend upon a number of factors, including:

- limited indications of regulatory approvals;
- the establishment and demonstration in the medical community of the clinical efficacy and safety of our product candidates and their potential advantages over existing diagnostic compounds;
- the prevalence and severity of any side effects;
- our ability to offer our product candidates at an acceptable price;
- the relative convenience and ease of administration of our products;

- the strength of marketing and distribution support; and
- sufficient third-party coverage or reimbursement.

The market may not accept LymPro, Eltoprazine or MANF based products based on any number of the above factors. The market may choose to continue utilizing the existing products for any number of reasons, including familiarity with or pricing of these existing products. The failure of any of our product candidates to gain market acceptance could impair our ability to generate revenue, which could have a material adverse effect on our future business and prevent us from obtaining the necessary partnerships to further our business strategy.

Risks Associated with Our Financial Condition

Our independent registered public accounting firm has expressed substantial doubt about our ability to continue as a going concern, which may hinder our ability to obtain future financing.

Our consolidated financial statements as of December 31, 2014 were prepared under the assumption that we will continue as a going concern for the next twelve months. Our independent registered public accounting firm has issued a report that included an explanatory paragraph referring to our projected future losses along with recurring losses from operations and expressing substantial doubt in our ability to continue as a going concern without additional capital becoming available. Our ability to continue as a going concern is dependent upon our ability to obtain additional equity or debt financing, attain further operating efficiencies, reduce expenditures, and, ultimately, to generate revenue. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

We are at an early stage of development as a company and currently have no source of revenue and may never become profitable.

We are a development stage biopharmaceutical company. Currently, we have no products approved for commercial sale and, to date, we have not generated any revenue. Our ability to generate revenue depends heavily on:

- demonstration in future clinical trials that our product candidate, MANF for the treatment of PD is safe and effective;

- our ability to seek and obtain regulatory approvals, including with respect to the indications we are seeking;

- successful manufacture and commercialization of our product candidates; and

- market acceptance of our products.

All of our existing product candidates are in various stages of development and will require extensive additional preclinical and clinical evaluation, regulatory review and approval, significant marketing efforts and substantial investment before they could provide us with any revenue. As a result, if we do not successfully develop, achieve regulatory approval and commercialize LymPro, Eltoprazine and/or MANF, we will be unable to generate any revenue for many years, if at all. We do not anticipate that we will generate revenue for several years, at the earliest, or that we will achieve profitability for at least several years after generating material revenue, if at all. If we are unable to generate revenue, we will not become profitable, and we may be unable to continue our operations.

We do not have any products that are approved for commercial sale and therefore do not expect to generate any revenues from product sales in the foreseeable future, if ever.

We currently do not have any products that are approved for commercial sale. To date, we have funded our operations primarily from grants and sales of our securities. We have not received, and do not expect to receive for at least the next several years in the case of Eltoprazine and MANF and until the first half of 2015 in the case of LymPro, if at all, any revenues from the commercialization of our product candidates. To obtain revenues from sales of our product candidates, we must succeed, either alone or with third parties, in developing, obtaining regulatory approval for, manufacturing and marketing drugs with commercial potential. We may never succeed in these activities, and may not generate sufficient revenues to continue our business operations or achieve profitability.

We have incurred significant losses since inception and anticipate that we will incur continued losses for the foreseeable future.

As of December 31, 2014 we had an accumulated deficit of approximately \$55 million. We have incurred significant losses since inception. We expect to incur significant and increasing operating losses for the next several years as we expand our research and development, advance product candidates into clinical development, complete clinical trials, seek regulatory approval and, if we receive FDA approval, commercialize our products. Because of the numerous risks and uncertainties associated with product development efforts, we are unable to predict the extent of any future losses or when we will become profitable, if at all. If we are unable to achieve and then maintain profitability, the market value of our common stock will likely decline.

We will need to raise substantial additional capital to fund our operations, and our failure to obtain funding when needed, may force us to delay, reduce or eliminate certain product development programs.

We expect to continue to spend substantial amounts to:

- continue development of our product candidates;
- finance our general and administrative expenses;
- license or acquire additional technologies;
- manufacture product for clinical trials;
- launch and commercialize our product candidates, if any such product candidates receive regulatory approval; and
- develop and implement commercial manufacturing, sales, marketing and distribution capabilities.

We will be required to raise additional capital to complete the development and commercialization of our product candidates and to continue to fund operations at the current cash expenditure levels. Our future funding requirements will depend on many factors, including, but not limited to:

- the rate of progress and cost of our clinical trials and other development activities;
- any future decisions we may make about the scope and prioritization of the programs we pursue;
- the costs of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights;
- the costs of manufacturing product;
- the costs and timing of regulatory approval;
- the costs of establishing sales, marketing and distribution capabilities;

- the effect of competing technological and market developments;
- the terms and timing of any collaborative, licensing and other arrangements that we may establish; and
- general market conditions for offerings from biopharmaceutical companies.

Worldwide economic conditions and the international equity and credit markets have recently significantly deteriorated and may remain depressed for the foreseeable future. These developments could make it more difficult for us to obtain additional equity or credit financing, when needed.

We cannot be certain that funding will be available on acceptable terms, or at all. To the extent that we raise additional funds by issuing equity securities, our stockholders may experience significant dilution. Any debt financing, if available, may involve restrictive covenants that impact our ability to conduct our business. If we are unable to raise additional capital when required or on acceptable terms, we may have to significantly delay, scale back or discontinue the development and/or commercialization of one or more of our product candidates. We also may be required to:

seek collaborators for our product candidates at an earlier stage than otherwise would be desirable and on terms that are less favorable than might otherwise be available; and/or

relinquish license or otherwise dispose of rights to technologies, product candidates or products that we would otherwise seek to develop or commercialize ourselves on unfavorable terms. If we are unable to fund our operations, we may be forced to discontinue and wind down our business.

We may require additional financing to sustain our operations and without it we may not be able to continue operations.

At December 31, 2014, we had a working capital deficit of \$5,900,000. We have never had positive operating cash flow. For the year ended December 31, 2014, we incurred an operating cash flow deficit of \$11,331,000. We do not currently have sufficient financial resources to fund our operations or those of our subsidiaries. Therefore, we need additional funds to continue these operations.

We may direct Lincoln Park to purchase up to an additional \$17,326,000 worth of shares of our common stock under our agreement generally in amounts up to 1,000,000 shares of our common stock on any such business day, which amounts may be increased to up to 2,500,000, provided the closing price of our common stock exceeds a certain threshold with a maximum limit of up to \$500,000 worth of our common stock on any single business day, plus an additional “accelerated amount” under certain circumstances. However, Lincoln Park shall not purchase any shares of our common stock on any business day that the closing sale price of our common stock is less than \$0.04 per share, subject to adjustment as set forth in the Purchase Agreement. Assuming a purchase price of \$0.0822 per share (the closing sale price of the common stock on December 31, 2014) and the purchase by Lincoln Park of the full 76,500,000 purchase shares under the purchase agreement, proceeds to us would only be \$6,288,300. As of May 1, 2015, the Company had received \$5,493,881 from Lincoln Park in consideration for the issuance of an aggregate of 64,486,921 Company common shares, of which 961,437 shares were for commitment fees.

The extent we rely on Lincoln Park as a source of funding will depend on a number of factors including, the prevailing market price of our common stock and the extent to which we are able to secure working capital from other sources. If obtaining sufficient funding from Lincoln Park were to prove unavailable or prohibitively dilutive, we will need to secure another source of funding in order to satisfy our working capital needs. Even if we sell all \$20,000,000 under the Purchase Agreement to Lincoln Park, we will need additional capital to fully implement our business, operating and development plans. Should the financing we require to sustain our working capital needs be unavailable or prohibitively expensive when we require it, the consequences could be a material adverse effect on our business, operating results, financial condition and prospects.

Risks Associated with Management

If we are unable to hire and retain key personnel, we may not be able to implement our business plan.

Due to the specified nature of our business, having certain key personnel is essential to the development and marketing of the products we plan to sell and thus to the entire business itself. Consequently, the loss of any of those individuals may have a substantial effect on our future success or failure. We may have to recruit qualified personnel with competitive compensation packages, equity participation, and other benefits that may affect the working capital available for our operations. Management may have to seek to obtain outside independent professionals to assist them in assessing the merits and risks of any business proposals as well as assisting in the development and operation of many company projects. No assurance can be given that we will be able to obtain such needed assistance on terms acceptable to us. Our failure to attract additional qualified employees or to retain the services of key personnel could have a material adverse effect on our operating results and financial condition.

Risks Related to Our Common Stock

Our stock price may be volatile.

The stock market, particularly in recent years, has experienced significant volatility particularly with respect to pharmaceutical, biotechnology and other life sciences company stocks. The volatility of pharmaceutical, biotechnology and other life sciences company stocks often does not relate to the operating performance of the companies represented by the stock. Factors that could cause this volatility in the market price of our common stock include:

- results from and any delays in our clinical trials;
- failure or delays in entering additional product candidates into clinical trials;
- failure or discontinuation of any of our research programs;
- research publications that are unfavorable;
- delays in establishing new strategic relationships;
- delays in the development or commercialization of our potential products;
- market conditions in the pharmaceutical and biotechnology sectors and issuance of new or changed securities
- analysts' reports or recommendations;
- actual and anticipated fluctuations in our financial and operating results;
- developments or disputes concerning our intellectual property or other proprietary rights;
- introduction of technological innovations or new commercial products by us or our competitors;
- issues in manufacturing our potential products;
- market acceptance of our potential products;
- third-party healthcare reimbursement policies;
- FDA or other domestic or foreign regulatory actions affecting us or our industry;
- litigation or public concern about the safety of our product candidates; and
- additions or departures of key personnel.

These and other external factors may cause the market price and demand for our common stock to fluctuate substantially, which may limit or prevent investors from readily selling their shares of common stock and may otherwise negatively affect the liquidity of our common stock. In the past, when the market price of a stock has been volatile, holders of that stock have instituted securities class action litigation against the company that issued the stock. If any of our stockholders brought a lawsuit against us, we could incur substantial costs defending the lawsuit. Such a lawsuit could also divert the time and attention of our management.

We have not and do not anticipate paying any dividends on our common stock.

We have paid no dividends on our common stock to date and it is not anticipated that any dividends will be paid to holders of our common stock in the foreseeable future. While our future dividend policy will be based on the operating results and capital needs of the business, it is currently anticipated that any earnings will be retained to finance our future expansion and for the implementation of our business plan. As an investor, you should take note of the fact that a lack of a dividend can further affect the market value of our stock, and could significantly affect the value of any investment in our Company.

If we fail to establish and maintain an effective system of internal control, we may not be able to report our financial results accurately or to prevent fraud. Any inability to report and file our financial results accurately and timely could harm our reputation and adversely impact the trading price of our common stock.

Effective internal control is necessary for us to provide reliable financial reports and prevent fraud. We have not performed an in-depth analysis to determine if historical un-discovered failures of internal controls exist, and may in the future discover areas of our internal control that need improvement. 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. As a result, our small size and any current internal control deficiencies may adversely affect our financial condition, results of operation and access to capital.

Our common stock is currently deemed a “penny stock,” which makes it more difficult for our investors to sell their shares.

Our common stock is subject to the “penny stock” rules adopted under Section 15(g) of the Exchange Act. The penny stock rules generally apply to companies whose common stock is not listed on The Nasdaq Stock Market or other national securities exchange and trades at less than \$5.00 per share, other than companies that have had average revenue of at least \$6,000,000 for the last three years or that have tangible net worth of at least \$5,000,000 (\$2,000,000 if the company has been operating for three or more years). These rules require, among other things, that brokers who trade penny stock to persons other than “established customers” complete certain documentation, make

suitability inquiries of investors and provide investors with certain information concerning trading in the security, including a risk disclosure document and quote information under certain circumstances. Many brokers have decided not to trade penny stocks because of the requirements of the penny stock rules and, as a result, the number of broker-dealers willing to act as market makers in such securities is limited. If we remain subject to the penny stock rules for any significant period, it could have an adverse effect on the market, if any, for our securities. If our securities are subject to the penny stock rules, investors will find it more difficult to dispose of our securities.

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.

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, or issued upon the exercise of outstanding options or warrants, it could create a circumstance commonly referred to as an “overhang” and 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, also could make more difficult our ability 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.

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

Our board of directors has the authority to fix and determine the relative rights and preferences of preferred stock and has designated 250,000 preferred shares as Series A Convertible Preferred Stock, 3,000,000 as Series B Convertible Preferred Stock, 750,000 as Series C Convertible Preferred Stock, 1,300 as Series D 8% Convertible Preferred Stock, 13,335 as Series E 12% Convertible Preferred Stock and 10,000 as Series G Preferred Stock. Our board of directors also has the authority to issue additional shares of our preferred stock without further stockholder approval. As a result, our board of directors could authorize the issuance of a series of preferred stock that would grant to holders the preferred right to our assets upon liquidation, the right to receive dividend payments before dividends are distributed to the holders of common stock and the right to the redemption of the shares, together with a premium, prior to the redemption of our common stock. In addition, our board of directors could authorize the issuance of a series of preferred stock that has greater voting power than our common stock or that is convertible into our common stock, which could decrease the relative voting power of our common stock or result in dilution to our existing stockholders.

Future sales or issuances of our securities may dilute the ownership of existing stockholders and cause the market price of our common stock to decline.

Pursuant to a stock purchase agreement, we have issued and sold to Discover Growth Fund, or the selling stockholder, 1,087 shares of Series G Preferred Stock. Such shares of Series G Preferred Stock are convertible into a total of 90,583,333 shares of our common stock, and upon the conversion of such shares, we also will be required to issue to the selling stockholder shares of common stock as a Conversion Premium and pay the selling stockholder, dividends, at our sole and absolute discretion, either in cash or in shares of our common stock. The number of shares of our common stock that may be issued pursuant to the Conversion Premium and if we elect to pay such dividends in shares may be significant, but cannot be determined at this time because the applicable calculations are based on our stock price during a period surrounding the date of the conversion. Any such issuances of our common stock as a result of the conversion of Series G Preferred Stock will dilute the proportionate ownership and voting power of existing stockholders and may cause the market price for our common stock to decline.

The sale or issuance of our common stock to Lincoln Park may cause dilution and the sale of the shares of common stock acquired by Lincoln Park, or the perception that such sales may occur, could cause the price of our common stock to fall

On March 7, 2014, we entered into the Purchase Agreement with Lincoln Park, pursuant to which Lincoln Park has committed to purchase up to \$20,000,000 of our common stock. Concurrently with the execution of the Purchase Agreement on March 7, 2014, we issued 4,000,000 shares of our common stock to Lincoln Park for a total purchase price of \$400,000 in the Initial Purchase under the Purchase Agreement and 6,000,000 Initial Commitment Shares to Lincoln Park as a fee for its commitment to purchase additional shares of our common stock under the Purchase Agreement. The additional shares that may be sold pursuant to the Purchase Agreement may be sold by us to Lincoln Park at our discretion from time to time over a 30-month period commencing June 17, 2014.

Other than with respect to the Initial Purchase by Lincoln Park under the Purchase Agreement, the purchase price for the shares that we may sell to Lincoln Park under the Purchase Agreement will fluctuate based on the market price of our common stock. Depending on market liquidity at the time, sales of such shares may cause the market price of our common stock to fall.

We generally have the right to control the timing and amount of any sales of our shares to Lincoln Park, except that, pursuant to the terms of our agreements with Lincoln Park, we would be unable to sell shares to Lincoln Park if and when the closing sale price of our common stock is below \$0.04 per share, subject to adjustment as set forth in the Purchase Agreement. Additional sales of our common stock, if any, to Lincoln Park will depend upon market conditions and other factors to be determined by us. As such, other than the Initial Purchase, Lincoln Park may ultimately purchase all, some or none of the shares of our common stock that may be sold pursuant to the Purchase Agreement and, after it has acquired shares, Lincoln Park may sell all, some or none of those shares. Therefore, sales to Lincoln Park by us could result in substantial dilution to the interests of other holders of our common stock. Additionally, the sale of a substantial number of shares of our common stock to Lincoln Park, or the anticipation of such sales, could make it more difficult for us to sell equity or equity-related securities in the future at a time and at a price that we might otherwise wish to effect sales.

DISCLOSURE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and any accompanying prospectus supplement, including the documents that we incorporate by reference, contains forward-looking statements. Such forward-looking statements include those that express plans, anticipation, intent, contingency, goals, targets or future development and/or otherwise are not statements of historical fact. These forward-looking statements are based on our current expectations and projections about future events and they are subject to risks and uncertainties known and unknown that could cause actual results and developments to differ materially from those expressed or implied in such statements.

In some cases, you can identify forward-looking statements by terminology, such as “expects,” “anticipates,” “intends,” “estimates,” “plans,” “believes,” “seeks,” “may,” “should”, “could” or the negative of such terms or other similar expressions. Accordingly, these statements involve estimates, assumptions and uncertainties that could cause actual results to differ materially from those expressed in them. Any forward-looking statements are qualified in their entirety by reference to the factors discussed throughout this prospectus.

You should read this prospectus and any accompanying prospectus supplement and the documents that we reference herein and therein and have filed as exhibits to the registration statement, of which this prospectus is part, completely and with the understanding that our actual future results may be materially different from what we expect. You should assume that the information appearing in this prospectus and any accompanying prospectus supplement is accurate as of the date on the front cover of this prospectus or such prospectus supplement only. Because the risk factors referred to above, could cause actual results or outcomes to differ materially from those expressed in any forward-looking statements made by us or on our behalf, you should not place undue reliance on any forward-looking statements. Further, any forward-looking statement speaks only as of the date on which it is made, and we undertake no obligation to update any forward-looking statement to reflect events or circumstances after the date on which the statement is made or to reflect the occurrence of unanticipated events. New factors emerge from time to time, and it is not possible for us to predict which factors will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. We qualify all of the information presented in this prospectus and any accompanying prospectus supplement, and particularly our forward-looking statements, by these cautionary statements.

USE OF PROCEEDS

Except as otherwise provided in the applicable prospectus supplement, we intend to use the net proceeds from the sale of the securities offered by this prospectus for general corporate purposes, which may include working capital, capital expenditures, research and development expenditures, regulatory affairs expenditures, acquisitions of new technologies and investments, and the repayment, refinancing, redemption or repurchase of future indebtedness or capital stock.

The intended application of proceeds from the sale of any particular offering of securities using this prospectus will be described in the accompanying prospectus supplement relating to such offering. The precise amount and timing of the application of these proceeds will depend on our funding requirements and the availability and costs of other funds.

THE SECURITIES WE MAY OFFER

The descriptions of the securities contained in this prospectus, together with the applicable prospectus supplements, summarize all the material terms and provisions of the various types of securities that we may offer. We will describe in the applicable prospectus supplement relating to any securities the particular terms of the securities offered by that prospectus supplement. If we indicate in the applicable prospectus supplement, the terms of the securities may differ from the terms we have summarized below. We will also include in the prospectus supplement information, where applicable, about material United States federal income tax considerations relating to the securities, and the securities exchange, if any, on which the securities will be listed.

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

- shares of our common stock;

- shares of our preferred stock;
- warrants to purchase any of the securities listed above; and/or
- units consisting of any of the securities listed above.

The terms of any securities we offer will be determined at the time of sale. We may issue securities that are exchangeable for or convertible into common stock or any of the other securities that may be sold under this prospectus. When particular securities are offered, a supplement to this prospectus will be filed with the SEC, which will describe the terms of the offering and sale of the offered securities.

DESCRIPTION OF CAPITAL STOCK

General

The following description of common stock and preferred stock, together with the additional information we include in any applicable prospectus supplements, summarizes the material terms and provisions of the common stock and preferred stock that we may offer under this prospectus but is not complete. For the complete terms of our common stock and preferred stock, please refer to our articles of incorporation, as amended, which may be further amended from time to time, any certificates of designation for our preferred stock, and our amended and restated bylaws, as amended from time to time. The Nevada Revised Statutes may also affect the terms of these securities. 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 particular terms of any series of these securities in more detail in the applicable prospectus supplement. If we so indicate in a prospectus supplement, the terms of any common stock or preferred stock we offer under that prospectus supplement may differ from the terms we describe below.

As of May 1, 2015, our authorized capital stock consisted of 2,000,000,000 shares of common stock, \$0.001 par value per share, and 10,000,000 shares of preferred stock, \$0.001 par value per share, of which 250,000 are designated Series A Convertible Preferred Stock, 3,000,000 are designated Series B Convertible Preferred Stock, 750,000 are designated Series C Convertible Preferred Stock, 1,300 are designated Series D Convertible Preferred Stock, 13,335 are designated Series E Convertible Preferred Stock and 10,000 are designated Series G Preferred Stock. Our board of directors may establish the rights and preferences of the preferred stock from time to time. As of May 1, 2015, there are 1,049,280,268 shares of our common stock issued and outstanding and 750,000 shares of Series C Convertible Preferred Stock, 550 shares of Series D Convertible Preferred Stock, 7,722.9 shares of Series E Convertible Preferred Stock and 1,087 shares of Series G Preferred Stock issued and outstanding.

Common Stock

Holders of our common stock are entitled to one vote per share. Our Certificate of Incorporation does not provide for cumulative voting. Holders of our common stock are entitled to receive ratably such dividends, if any, as may be declared by our board of directors (the "Board") out of legally available funds. However, the current policy of our Board is to retain earnings if any, for the operation and expansion of the Company. Upon liquidation, dissolution or winding-up, the holders of our common stock are entitled to share ratably in all of our assets which are legally available for distribution, after payment of or provision for all liabilities. The holders of our common stock have no preemptive, subscription, redemption or conversion rights.

Preferred Stock

Our Certificate of Incorporation provides that our Board may by resolution, without further vote or action by the stockholders, establish one or more classes or series of preferred stock having the number of shares and relative voting rights, designation, dividend rates, liquidation, and other rights, preferences, and limitations as may be fixed by them without further stockholder approval. Once designated by our Board, each series of preferred stock will 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 the Board may adopt. Prior to the issuance of shares of each series of preferred stock, the Board is required by the Nevada Revised Statutes and the Certificate of Incorporation to adopt resolutions and file a certificate of designation with the Secretary of State of the State of Nevada. 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 distinctive designation of such series and the number of shares which shall constitute such series, which (a) number may be increased (except where otherwise provided by the Board in creating such series) or decreased (but not below the number of shares thereof then outstanding) from time to time by resolution of the Board;

The rate and manner of payment of dividends payable on shares of such series, including the dividend rate, date of (b) declaration and payment, whether dividends shall be cumulative, and the conditions upon which and the date from which such dividends shall be cumulative;

Whether shares of such series shall be redeemed, the time or times when, and the price or prices at which, shares (c) of such series shall be redeemable, the redemption price, the terms and conditions of redemption, and the sinking fund provisions, if any, for the purchase or redemption of such shares;

(d) The amount payable on shares of such series and the rights of holders of such shares in the event of any voluntary or involuntary liquidation, dissolution or winding up of the affairs of the Company;

The rights, if any, of the holders of shares of such series to convert such shares into, or exchange such shares for, (e) shares of common stock, other securities, or shares of any other class or series of preferred stock and the terms and conditions of such conversion or exchange;

(f) The voting rights, if any, and whether full or limited, of the shares of such series, which may include no voting rights, one vote per share, or such higher number of votes per share as may be designated by the Board; and

The preemptive or preferential rights, if any, of the holders of shares of such series to subscribe for, purchase, (g) receive, or otherwise acquire any part of any new or additional issue of stock of any class, whether now or hereafter authorized, or of any bonds, debentures, notes, or other securities of the Company, whether or not convertible into shares of stock with the Company.

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 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.

Anti-Takeover Provisions

Nevada Revised Statutes

Acquisition of Controlling Interest Statutes . Nevada’s “acquisition of controlling interest” statutes contain provisions governing the acquisition of a controlling interest in certain Nevada corporations. These “control share” laws provide generally that any person that acquires a “controlling interest” in certain Nevada corporations may be denied certain voting rights, unless a majority of the disinterested stockholders of the corporation elects to restore such voting rights. These statutes provide that a person acquires a “controlling interest” whenever a person acquires shares of a subject corporation that, but for the application of these provisions of the Nevada Revised Statutes, would enable that person to exercise (1) one-fifth or more, but less than one-third, (2) one-third or more, but less than a majority or (3) a majority or more, of all of the voting power of the corporation in the election of directors. Once an acquirer crosses one of these thresholds, shares which it acquired in the transaction taking it over the threshold and within the 90 days immediately preceding the date when the acquiring person acquired or offered to acquire a controlling interest become “control shares” to which the voting restrictions described above apply. Our articles of incorporation and bylaws currently contain no provisions relating to these statutes, and unless our articles of incorporation or bylaws in effect on the tenth day after the acquisition of a controlling interest were to provide otherwise, these laws would apply to us if we were to (i) have 200 or more stockholders of record (at least 100 of which have addresses in the State of Nevada appearing on our stock ledger) and (ii) do business in the State of Nevada directly or through an affiliated corporation. As of January 15, 2013, we have over 200 record stockholders, but do not have 100 stockholders of records with Nevada addresses appearing on our stock ledger. If these laws were to apply to us, they might discourage companies or persons interested in acquiring a significant interest in or control of the Company, regardless of whether such acquisition may be in the interest of our stockholders.

Combinations with Interested Stockholders Statutes . Nevada’s “combinations with interested stockholders” statutes prohibit certain business “combinations” between certain Nevada corporations and any person deemed to be an “interested stockholder” for two years after the such person first becomes an “interested stockholder” unless (i) the corporation’s board of directors approves the combination (or the transaction by which such person becomes an “interested stockholder”) in advance, or (ii) the combination is approved by the board of directors and sixty percent of the corporation’s voting power not beneficially owned by the interested shareholder, its affiliates and associates. Furthermore, in the absence of prior approval certain restrictions may apply even after such two-year period. For purposes of these statutes, an “interested stockholder” is any person who is (x) the beneficial owner, directly or indirectly, of ten percent or more of the voting power of the outstanding voting shares of the corporation, or (y) an affiliate or associate of the corporation and at any time within the two previous years was the beneficial owner, directly or indirectly, of ten percent or more of the voting power of the then outstanding shares of the corporation. The definition of the term “combination” is sufficiently broad to cover most significant transactions between the corporation and an “interested stockholder”. Subject to certain timing requirements set forth in the statutes, a corporation may elect not to be governed by these statutes. We have not included any such provision in our articles of incorporation.

The effect of these statutes may be to potentially discourage parties interested in taking control of the Company from doing so if it cannot obtain the approval of our board of directors.

Transfer Agent and Registrar

The Transfer Agent and Registrar for our common stock is VStock Transfer, LLC, 18 Lafayette Place, Woodmere, NY 11598.

DESCRIPTION OF WARRANTS

The following description, together with the additional information we may include in any applicable prospectus supplements, summarizes the material terms and provisions of the warrants that we may offer under this prospectus and the related warrant agreements and warrant certificates. While the terms summarized below will apply generally to any warrants that we may offer, we will describe the particular terms of any series of warrants in more detail in the applicable prospectus supplement. If we indicate in the prospectus supplement, the terms of any warrants offered under that prospectus supplement may differ from the terms described below. If there are differences between that prospectus supplement and this prospectus, the prospectus supplement will control. Thus, the statements we make in this section may not apply to a particular series of warrants. Specific warrant agreements will contain additional important terms and provisions and will be incorporated by reference as an exhibit to the registration statement which includes this prospectus.

General

We may issue warrants for the purchase of common stock and/or preferred stock in one or more series. We may issue warrants independently or together with common stock and/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 the warrant agreement with a warrant agent. Each warrant agent may be a bank that we select which has its principal office in the United States and a combined capital and surplus of at least \$100,000,000. 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;
- the currency for which the warrants may be purchased;
- if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each such security or each principal amount of such security;
- if applicable, the date on and after which the warrants and the related securities will be separately transferable; in the case of warrants to purchase common stock or preferred stock, the number 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 these shares may be purchased upon such exercise;
- 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; 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 on the expiration date that we set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

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

Until the warrant is properly exercised, no holder of any warrant will be entitled to any rights of a holder of the securities purchasable upon exercise of the warrant.

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

Enforceability of Rights By Holders of Warrants

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

Calculation Agent

Calculations relating to warrants may be made by a calculation agent, an institution that we appoint as our agent for this purpose. The prospectus supplement for a particular warrant will name the institution that we have appointed to act as the calculation agent for that warrant as of the original issue date for that warrant. We may appoint a different institution to serve as calculation agent from time to time after the original issue date without the consent or notification of the holders.

The calculation agent's determination of any amount of money payable or securities deliverable with respect to a warrant will be final and binding in the absence of manifest error.

DESCRIPTION OF UNITS

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

The applicable prospectus supplement will describe:

- the designation and terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- any 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.

The applicable prospectus supplement will describe the terms of any units. The preceding description and any description of units in the applicable prospectus supplement does not purport to be complete and is subject to and is qualified in its entirety by reference to the unit agreement and, if applicable, collateral arrangements and depositary arrangements relating to such units.

PLAN OF DISTRIBUTION

We or the selling stockholder may sell the securities being offered pursuant to this prospectus through underwriters or dealers, through agents, or directly to one or more purchasers or through a combination of these methods. The applicable prospectus supplement will describe the terms of the offering of the securities, including:

- the name or names of any underwriters, if any, and if required, any dealers or agents;
- the purchase price of the securities and the proceeds we will receive from the sale;

- any underwriting discounts and other items constituting underwriters' compensation;
- any discounts or concessions allowed or reallocated or paid to dealers; and
- any securities exchange or market on which the securities may be listed.

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

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

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

If underwriters are used in an offering, we will execute an underwriting agreement with such underwriters and will specify the name of each underwriter and the terms of the transaction (including any underwriting discounts and other terms constituting compensation of the underwriters and any dealers) in a prospectus supplement. The securities may be offered to the public either through underwriting syndicates represented by managing underwriters or directly by one or more investment banking firms or others, as designated. If an underwriting syndicate is used, the managing underwriter(s) will be specified on the cover of the prospectus supplement. If underwriters are used in the sale, the offered securities will be acquired by the underwriters for their own accounts and may be resold from time to time in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. Any public offering price and any discounts or concessions allowed or reallocated or paid to dealers may be changed from time to time. Unless otherwise set forth in the prospectus supplement, the obligations of the underwriters to purchase the offered securities will be subject to conditions precedent and the underwriters will be obligated to purchase all of the offered securities if any are purchased.

We may grant to the underwriters options to purchase additional securities to cover over-allotments, if any, at the public offering price, with additional underwriting commissions or discounts, as may be set forth in a related prospectus supplement. The terms of any over-allotment option will be set forth in the prospectus supplement for those securities.

If we use a dealer in the sale of the securities being offered pursuant to this prospectus or any prospectus supplement, we will sell the securities to the dealer, as principal. The dealer may then resell the securities to the public at varying prices to be determined by the dealer at the time of resale. The names of the dealers and the terms of the transaction will be specified in a prospectus supplement.

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

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

In connection with the sale of the securities, underwriters, dealers or agents may receive compensation from us or from purchasers of the common stock for whom they act as agents in the form of discounts, concessions or commissions. Underwriters may sell the securities to or through dealers, and those dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters or commissions from the purchasers for whom they may act as agents. Underwriters, dealers and agents that participate in the distribution of the securities, and any institutional investors or others that purchase common stock directly and then resell the securities, may be deemed to be underwriters, and any discounts or commissions received by them from us and any profit on the resale of the common stock by them may be deemed to be underwriting discounts and commissions under the Securities Act.

We may provide agents and underwriters with indemnification against particular civil liabilities, including liabilities under the Securities Act, or contribution with respect to payments that the agents or underwriters may make with respect to such liabilities. Agents and underwriters may engage in transactions with, or perform services for, us in the ordinary course of business.

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

identified in the applicable prospectus supplement or in a post-effective amendment.

To facilitate an offering of a series of securities, persons participating in the offering may engage in transactions that stabilize, maintain, or otherwise affect the market price of the securities. This may include over-allotments or short sales of the securities, which involves the sale by persons participating in the offering of more securities than have been sold to them by us. In those circumstances, such persons would cover such over-allotments or short positions by purchasing in the open market or by exercising the over-allotment option granted to those persons. In addition, those persons may stabilize or maintain the price of the securities by bidding for or purchasing securities in the open market or by imposing penalty bids, whereby selling concessions allowed to underwriters or dealers participating in any such offering may be reclaimed if securities sold by them are repurchased in connection with stabilization transactions. The effect of these transactions may be to stabilize or maintain the market price of the securities at a level above that which might otherwise prevail in the open market. Such transactions, if commenced, may be discontinued at any time. We make no representation or prediction as to the direction or magnitude of any effect that the transactions described above, if implemented, may have on the price of our securities.

Any common stock sold pursuant to a prospectus supplement will be eligible for quotation and trading on the OTC QB. Any underwriters to whom securities are sold by us for public offering and sale may make a market in the securities, but such underwriters will not be obligated to do so and may discontinue any market making at any time without notice.

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

In compliance with guidelines of the Financial Industry Regulatory Authority, or FINRA, the maximum consideration or discount to be received by any FINRA member or independent broker dealer may not exceed 8% of the aggregate amount of the securities offered pursuant to this prospectus and any applicable prospectus supplement.

LEGAL MATTERS

The validity of the issuance of the securities offered hereby will be passed upon for us by Sichenzia Ross Friedman Ference LLP, New York, New York.

EXPERTS

The consolidated financial statements of Amaranthus BioScience Holdings, Inc. as of and for the years ended December 31, 2014 and 2013 incorporated in this prospectus by reference to the Annual Report on Form 10-K of Amaranthus BioScience Holdings, Inc. for the year ended December 31, 2014 have been so incorporated in reliance on the report (which contains an explanatory paragraph related to the Company's ability to continue as a going concern) of Marcum LLP, Independent Registered Public Accounting Firm, given on the authority of said firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus constitutes a part of a registration statement on Form S-3 filed under the Securities Act. As permitted by the SEC's rules, this prospectus and any prospectus supplement, which form a part of the registration statement, do not contain all the information that is included in the registration statement. You will find additional information about us in the registration statement. Any statements made in this prospectus or any prospectus supplement concerning legal documents are not necessarily complete and you should read the documents that are filed as exhibits to the registration statement or otherwise filed with the SEC for a more complete understanding of the document or matter.

We file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read, without charge, and copy the documents we file at the SEC's public reference rooms in Washington, D.C. at 100 F Street, NE, Room 1580, Washington, DC 20549, or in New York, New York and Chicago, Illinois. You can request copies of these documents by writing to the SEC and paying a fee for the copying cost. Please call the SEC at 1-800-SEC-0330 for further information on the public reference rooms. Our SEC filings are also available to the public at no cost from the SEC's website at <http://www.sec.gov>.

INCORPORATION OF DOCUMENTS BY REFERENCE

We have filed a registration statement on Form S-3 with the Securities and Exchange Commission under the Securities Act. This prospectus is part of the registration statement but the registration statement includes and incorporates by reference additional information and exhibits. The Securities and Exchange Commission permits us to “incorporate by reference” the information contained in documents we file with the Securities and Exchange Commission, which means that we can disclose important information to you by referring you to those documents rather than by including them in this prospectus. Information that is incorporated by reference is considered to be part of this prospectus and you should read it with the same care that you read this prospectus. Information that we file later with the Securities and Exchange Commission will automatically update and supersede the information that is either contained, or incorporated by reference, in this prospectus, and will be considered to be a part of this prospectus from the date those documents are filed. We have filed with the Securities and Exchange Commission, and incorporate by reference in this prospectus:

- Annual Report on Form 10-K for the year ended December 31, 2014 filed with the SEC on April 6, 2015;
- Quarterly Reports on Form 8-K or 8-K/A filed with the SEC on January 12, 2015, January 13, 2015, January 14, 2015, January 15, 2015, February 13, 2015, February 25, 2015, February 26, 2015, March 3, 2015, March 25, 2015, March 31, 2015, April 2, 2015, April 28, 2015 and April 29, 2015; and
- The description of our common stock contained in our Form 8-A filed with the SEC on August 2, 2013.

We also incorporate by reference all additional documents that we file with the Securities and Exchange Commission under the terms of Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act that are made after the initial filing date of the registration statement of which this prospectus is a part until the offering of the particular securities covered by a prospectus supplement or term sheet has been completed. All filings from the date of the initial registration statement and prior to effectiveness of the registration statement shall be deemed to be incorporated by reference into the prospectus. We are not, however, incorporating, in each case, any documents or information that we are deemed to furnish and not file in accordance with Securities and Exchange Commission rules.

You may request, and we will provide you with, a copy of these filings, at no cost, by calling us at (415) 688-4484 or by writing to us at the following address:

Amarantus BioScience Holdings, Inc.

655 Montgomery Street, Suite 900

San Francisco, CA 94111

Attn.: Corporate Secretary