

Use these links to rapidly review the document

[TABLE OF CONTENTS](#)

[Table of Contents](#)

As filed with the Securities and Exchange Commission on May 7, 2018

Registration Statement No. 333-

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

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

AXOGEN, INC.

(Exact name of registrant as specified in its charter)

Minnesota (State or other jurisdiction of incorporation or organization)	41-1301878 (I.R.S. Employer Identification No.)
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**13631 Progress Boulevard, Suite 400
Alachua, Florida 32615
Tel: (386) 462-6800**

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

**Gregory G. Freitag
General Counsel
AxoGen, Inc.
13631 Progress Boulevard, Suite 400
Alachua, Florida 32615
Tel: (386) 462-6800**

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

**Copies to:
Fahd M.T. Riaz, Esq.
Scott A. Cowan, Esq.
DLA Piper LLP (US)
1650 Market Street, Suite 4900
Philadelphia, Pennsylvania 19103
Tel: (215) 656-3300**

**Approximate date of commencement of proposed sale to the public:
As soon as practicable after this registration statement becomes effective.**

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

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

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

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

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box. ☒

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

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

Large accelerated filer ☐

Accelerated filer ☒

Non-accelerated filer ☐
(Do not check if a
smaller reporting company)

Smaller reporting company ☐
Emerging growth company ☐

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

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Amount to be registered(1)	Proposed maximum offering price per unit(1)	Proposed maximum aggregate offering price(1)	Amount of registration fee(2)
Common stock, \$0.01 par value per share	—	—	—	—

- (1) Such information is not required to be included pursuant to General Instruction II.E of Form S-3 under the Securities Act of 1933, as amended (the "Securities Act"). Such indeterminate number or amount of common stock is being registered as may from time to time be offered at indeterminate prices. In addition, pursuant to Rule 416 under the Securities Act, the securities being registered hereunder include such indeterminate number of shares of common stock as may be issuable with respect to the securities being registered hereunder as a result of stock splits, stock dividends or similar transactions.
- (2) Pursuant to Rules 456(b) and 457(r) of the Securities Act, the registrant is deferring payment of all applicable registration fees. Any registration fees will be paid on a pay-as-you-go basis in accordance with Rule 457(r).

PROSPECTUS



Common Stock

We may from time to time offer to sell common stock in amounts, at prices and on terms described in one or more supplements to this prospectus. This prospectus provides a general description of our common stock. Each time we sell shares of our common stock, we will provide the specific terms of the shares in a supplement to this prospectus. We may also authorize one or more free writing prospectuses to be provided to you in connection with such offerings. The prospectus supplement and any related free writing prospectus may add, update or change information contained in this prospectus. You should carefully read this prospectus, the applicable prospectus supplement and any related free writing prospectus, as well as the documents incorporated by reference herein and therein, before you invest in any of our common stock.

We may offer and sell our common stock through underwriters, dealers or agents, or directly to purchasers, or through a combination of these methods. See "Plan of Distribution" beginning on page 10 of this prospectus.

Our common stock is listed on the Nasdaq Capital Market under the symbol "AXGN." The last reported sale price of our common stock on the Nasdaq Capital Market on May 4, 2018 was \$42.50 per share.

Investing in our securities involves risk. See "Risk Factors" on page 5 of this prospectus. You should carefully read this prospectus, the applicable prospectus supplement and any related free writing prospectus, as well as the documents incorporated by reference herein and therein, before you invest in any of 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.

The date of this prospectus is May 7, 2018

TABLE OF CONTENTS

	<u>Page</u>
About this Prospectus	1
Prospectus Summary	2
Risk Factors	5
Special Note Regarding Forward-Looking Statements	6
Description of the Securities We May Offer	7
Use of Proceeds	9
Plan of Distribution	10
Where You Can Find More Information	13
Incorporation of Certain Information by Reference	13
Legal Matters	15
Experts	15

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the U.S. Securities and Exchange Commission (the "SEC") using a "shelf" registration process as a "well-known seasoned issuer," as defined in Rule 405 under the Securities Act of 1933, as amended (the "Securities Act"). Under this shelf registration process, we may offer and sell, from time to time, in one or more offerings the common stock described in this prospectus.

This prospectus provides you with a general description of the securities we may offer. Each time we sell the securities, we will, to the extent required by law, provide a prospectus supplement that will contain specific information about the terms of the offering. We may also authorize one or more free writing prospectuses to be provided to you in connection with the offering. The prospectus supplement and any related free writing prospectus may add, update or change information contained in this prospectus. This prospectus does not contain all of the information included in the registration statement. For a more complete understanding of the offering of the securities, you should refer to the registration statement, including its exhibits. You should carefully read this prospectus, the applicable prospectus supplement, and any applicable free writing prospectus, as well as the information and documents incorporated herein and therein by reference and the additional information under the heading "Where You Can Find More Information," before making an investment decision.

We have not authorized any dealer, salesman or other person to give any information or to make any representation other than those contained in, or incorporated by reference into, this prospectus and the applicable prospectus supplement, and any free writing prospectus we have authorized for use in connection with a specific offering. You must not rely upon any other information or representation.

This prospectus and any accompanying supplement to this prospectus do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the registered securities to which they relate, nor do this prospectus and any accompanying supplement to this prospectus constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction. You should not assume that the information contained in this prospectus, any accompanying prospectus supplement and any applicable free writing prospectus is accurate on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus, any accompanying prospectus supplement or any applicable free writing prospectus is delivered, or securities sold, on a later date.

This prospectus may not be used by us to consummate sales of our securities unless it is accompanied by a prospectus supplement. To the extent there are inconsistencies between any prospectus supplement, this prospectus and any documents incorporated by reference, the document with the most recent date will control.

Unless the context otherwise requires, references in this prospectus to "we," "us," "our," or the "Company" refer to AxoGen, Inc. and its wholly owned subsidiaries, AxoGen Corporation and AxoGen Europe GmbH.

This prospectus includes trademarks, tradenames and service marks that are the property of us and of other organizations. Solely for convenience, trademarks, trade names and service marks referred to in this prospectus may appear without the "TM," "®," "©" or "SM" symbols, but such references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensor to these trademarks, trade names and service marks. We do not intend our use or display of other parties' trademarks, trade names or service marks to imply, and such use or display should not be construed to imply, a relationship with, or endorsement or sponsorship of us by, these other parties.

PROSPECTUS SUMMARY

This summary highlights selected information contained elsewhere in this prospectus or incorporated by reference into this prospectus. This summary does not contain all the information that you should consider before investing in our securities. You should carefully read this entire prospectus, the applicable prospectus supplement and any related free writing prospectus, including each of the documents incorporated herein or therein by reference, before making an investment decision.

Overview

We are a global leader in developing and marketing surgical solutions for peripheral nerves. We provide products and education to improve surgical treatment algorithms for peripheral nerve damage or discontinuity. Our portfolio of products includes Avance Nerve Graft, an off-the-shelf processed human nerve allograft for bridging severed peripheral nerves without the comorbidities associated with a second surgical site, AxoGuard Nerve Connector, a porcine submucosa extracellular matrix ("ECM") coaptation aid for tensionless repair of severed peripheral nerves, AxoGuard Nerve Protector, a porcine submucosa ECM product used to wrap and protect damaged peripheral nerves and reinforce the nerve reconstruction while preventing soft tissue attachments, and Avive Soft Tissue Membrane, a minimally processed human umbilical cord membrane that may be used as a resorbable soft tissue covering to separate tissues and modulate inflammation in the surgical bed. Along with these core surgical products, we also offer the AxoTouch Two-Point Discriminator and AcroVal Neurosensory and Motor Testing System. These evaluation and measurement tools assist healthcare professionals in detecting changes in sensation, assessing return of sensory, grip and pinch function, evaluating effective treatment interventions, and providing feedback to patients on peripheral nerve function. Our portfolio of products is available in the United States, Canada, the United Kingdom and several European and other international countries.

We began marketing products in 2008 and our revenues have increased from approximately \$4.8 million in 2011 to approximately \$60.4 million in 2017. Gross profit for the year ended December 31, 2017 was approximately \$51.1 million, while our loss from operations for the year ended December 31, 2017 was approximately \$8.0 million. We have continued to broaden our sales and marketing focus, which we expect to have a continuing positive contribution to our revenue growth in the long term.

Avance Nerve Graft and Avive Soft Tissue Membrane are processed in the United States at our processing facility in Dayton, Ohio. AxoGuard Nerve Connector and AxoGuard Nerve Protector are manufactured in the United States by Cook Biotech Incorporated and are exclusively distributed by us worldwide. The AcroVal Neurosensory and Motor Testing System and AxoTouch Two Point Discriminator are contract manufactured by Viron Technologies, LLC (formerly Cybernetics Research Laboratories) ("Viron") in Tucson, Arizona. Viron supplies the AcroVal Neurosensory and Motor Testing System and AxoTouch Two Point Discriminator unpackaged and they are packaged at our distribution facility in Burleson, Texas.

Peripheral Nerve Regeneration Market Overview

Peripheral nerve damage or discontinuity ("PND") is a major source of physical disability impairing the ability to move muscles or to feel normal sensations. Failure to treat peripheral nerve damage or discontinuity can, in severe cases, lead to full loss of sensation and/or function, pain and, sometimes, amputation. Many peripheral nerve patients who receive treatment do not optimally recover. They may suffer from both reduced, or no, muscle strength, and reduced, or no, sensitivity and pain.

Every day patients suffer traumatic bodily injuries resulting in damage or discontinuity to peripheral nerves severe enough to require surgical treatment, including injuries from motor vehicle

accidents, power tool injuries, gunshot wounds, dislocations, fractures, lacerations, or other forms of penetrating trauma. The peripheral nerves commonly damaged or discontinued from these traumas include the digital, median, ulnar, radial, facial, spinal accessory and brachial plexus nerves. The "Extremity Trauma" portion of the Market (as defined below) encompasses the traumatic PND described above but excludes the OMF, Breast and Carpal Tunnel (as such terms are defined below) portions of the Market.

Beyond the physical damage or discontinuity to peripheral nerves resulting from traumatic bodily injury described above, peripheral nerve damage or discontinuity also occurs due to surgical intervention. Nerve damage or discontinuity can occur during dental and oral surgery procedures such as third molar extractions, placement of dental implants and removal of tumors during which one or more sections of the trigeminal nerve can be damaged or discontinued ("OMF"). This can result in numbness in certain areas of the face and mouth.

Breast reconstruction neurotization ("Breast") is another portion of the Market. Currently, when a woman undergoes autologous breast reconstruction after a mastectomy, she receives the shape of a natural breast but loses sensory feeling. This forfeiture of sensation can have a profound effect contributing to quality of life issues such as depression and other emotional challenges. In certain cases, sensation can be returned to the breast area with the use of the Company's products through an innovative surgical technique called ReSensation. The Company believes that the ideal breast reconstruction should restore size, shape, symmetry, softness and now, sensation—without the potential risks and co-morbidity associated with autograft. The ReSensation technique incorporates the Company's vision into a reproducible and efficient solution for reconstructive plastic surgeons.

Finally, peripheral nerves can also be damaged due to compression injuries. For instance, severe and recurrent carpal tunnel cases may result in complications and damage to the peripheral nerve that requires surgical intervention and protection of the peripheral nerve. PND caused by recurrent carpal tunnel syndrome and cubital tunnel syndrome constitutes the "Carpal Tunnel" portion of the Market.

We estimate the United States PND market for our current product portfolio for Extremity Trauma, OMF, Breast and Carpal Tunnel is \$2.2 billion (the "Market"). From a product prospective, as to the Market, we estimate that Avance Nerve Graft represents \$976 million, AxoGuard Nerve Connector represents \$391 million, AxoGuard Nerve Protector represents \$433 million and Avive Soft Tissue Membrane represents \$439 million.

We estimate that the Extremity Trauma portion of the Market is approximately \$1.5 billion. The estimated size of the Extremity Trauma portion of the market is based upon epidemiological studies regarding the general number of trauma patients, physician interviews and incidence of PND in the population. We believe that each year in the U.S., more than 1.4 million people suffer damage or discontinuity to peripheral nerves resulting in over 700,000 extremity nerve repair procedures.

We estimate that the OMF portion of the Market is approximately \$293 million, based upon research that has indicated approximately 80,350 PND occur in the U.S. each year that are related to benign tumor resections, third molar surgeries, anesthetic injections and dental implants. We have applied the average sales price of the Avance Nerve Graft, AxoGuard Nerve Connector and AxoGuard Nerve Protector that address such PND in order to derive the OMF portion of the Market.

According to market data, there are annually 307,660 breast cancer patients of which 113,834 receive a mastectomy. Of those mastectomy patients, every year, more than 20,000 women choose autologous flap reconstruction as compared to implant based reconstructions. Removing those procedures that are not appropriate for neurotization, and based upon our assumption that 65% of women will elect to have a bilateral procedure, we estimate that the Breast portion of the Market is approximately \$250 million.

We estimate that the Carpal Tunnel portion of the Market is approximately \$188 million, or 118,000 procedures. According to literature, there are approximately 500,000 primary carpal tunnel and 53,000 primary cubital tunnel relief surgeries performed annually in the U.S. For carpal tunnel, we estimate that our addressable market is the 20% of carpal tunnel surgeries that require revision procedures to address the recurrence of symptoms. From the 53,000 primary cubital tunnel surgeries, we estimate that our addressable market is 18,000 of such surgeries comprised of revision and primary interventions. As a result, we estimate that approximately 100,000 carpal tunnel revision surgeries and 18,000 total cubital tunnel procedures are addressable each year in the U.S. to mitigate the recurrence of symptoms. These revision and primary surgeries are required due to compression of the peripheral nerve due to soft tissue attachments from the surrounding tissue or tissue infiltration entrapping the nerve. To prevent additional recurrences, surgeons will opt to use a nerve protection product such as the AxoGuard Nerve Protector. In order to derive the Carpal Tunnel portion of the Market, we multiplied the average sales price of our AxoGuard Nerve Protector by the number of estimated procedures.

Market Expansion Opportunities

Although distribution and sales of products in the Extremity Trauma, OMF, Breast and Carpal Tunnel portions of the Market constitute our prime revenue sources today, market expansion opportunities in lower extremity surgery, head and neck surgery, urology and the surgical intervention for pain offer us new and expanded revenue opportunities. For example, we have developed the AxoGuard NerveCap which is designed to protect a peripheral nerve end and separate the nerve from the surrounding environment to reduce the development of asymptomatic or painful neuromas ("Neuroma Management"). A neuroma is a tangled mass of disorganized nerve and fibrous tissue which, if not properly diagnosed and addressed, can require long term pharmacologic treatment and pain management. An example of the use of the AxoGuard Nerve Cap is in the situation of a digital amputation whereby the nerves that are cut in the amputation may form a neuroma if the nerve end is not properly terminated or capped. In 2018, we intend to conduct clinical evaluation and user preference studies of the AxoGuard Nerve Cap and define our marketing plan for Neuroma Management.

Lower limb/total joint replacement is another market opportunity. In the United States there are approximately 700,000 total knee replacements ("TKR") per year and 310,000 total hip replacements ("THR") per year. We estimate that 6% of patients have neuropathic pain with TKR and THR and more than 60,000 have neuropathic pain post joint replacement. We believe if we proceed with entering this area in the future it would increase the market for our products by approximately \$125 million.

Corporate Information

We were incorporated in Minnesota in 1977. Our principal offices are located at 13631 Progress Boulevard, Suite 400, Alachua, Florida 32615. Our telephone number is (386) 462-6800. We have two wholly owned subsidiaries, AxoGen Corporation, a Delaware corporation, and AxoGen Europe GmbH, a limited liability corporation with its corporate seat in Vienna, Austria. Our web address is www.axogeninc.com. Information contained in, or accessible through, our website does not constitute a part of this prospectus or any accompanying prospectus supplement.

Our reports that have been filed with the SEC are available on our website free of charge, including our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, Forms 3, 4 and 5 filed on behalf of directors and executive officers and any amendments to such reports filed pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Copies of this prospectus and the applicable prospectus supplement may also be obtained without charge electronically or by paper by contacting Investor Relations, c/o AxoGen, Inc., 13631 Progress Boulevard, Suite 400, Alachua, Florida 32615 or by calling (386) 462-6800.

RISK FACTORS

An investment in our common stock involves risks. Prior to making a decision about investing in our common stock, you should carefully consider the specific risks discussed under "Risk Factors" in our annual report on Form 10-K for our most recent fiscal year, as updated by our quarterly reports on Form 10-Q and other SEC filings subsequent thereto, pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, and in any applicable prospectus supplement. The risks and uncertainties described in any applicable prospectus supplement and in our SEC filings are not the only ones facing us. Each of these risks could materially and adversely affect our business, results of operations and financial condition, resulting in a decline in the trading price of our common stock and a complete or partial loss of your investment.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, any accompanying prospectus supplement or related free writing prospectus, and the documents incorporated by reference herein and therein may contain "forward-looking statements" within the meaning of the safe harbor provisions of Section 27A of the Securities Act, Section 21E of the Exchange Act, and the Private Securities Litigation Reform Act of 1995. These forward-looking statements only provide our current expectations or forecasts of future events and financial performance and may be identified by the use of forward-looking terminology, including the terms "believes," "estimates," "anticipates," "expects," "plans," "intends," "may," "will," "should," "could," "predicts," or the negative thereof, or other variations or comparable terminology, though the absence of these words does not necessarily mean that a statement is not forward-looking. Forward-looking statements include all matters that are not historical facts and include, without limitation, statements concerning our business strategy, outlook, objectives, future milestones, plans, intentions, goals, and future financial condition, including the period of time for which our existing resources will enable us to fund our operations.

You should read carefully the risks described in the section entitled "Risk Factors" beginning on page 5 of this prospectus, and in any accompanying prospectus supplement or related free writing prospectus, together with all information incorporated by reference herein and therein, to better understand the significant risks and uncertainties inherent in our business and underlying any forward-looking statements. As a result of these risks, actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements in this prospectus or in any accompanying prospectus supplement or related free writing prospectus, or incorporated by reference herein and therein, and you should not place undue reliance on any forward-looking statements.

Any forward-looking statements that we make in this prospectus speak only as of the date of such statements and we undertake no obligation to publicly update any forward-looking statements or to publicly announce revisions to any of the forward-looking statements, whether as a result of new information, future events or otherwise.

DESCRIPTION OF THE SECURITIES WE MAY OFFER

The following description of our capital stock is not complete and may not contain all the information you should consider before investing in our capital stock. This description is summarized from, and qualified in its entirety by reference to, our Amended and Restated Articles of Incorporation ("Articles") and our Bylaws ("Bylaws"), in each case as amended to the date of this prospectus, which have been publicly filed with the SEC. See "Where You Can Find More Information" and "Incorporation of Certain Information by Reference." In addition, please refer to our other publicly filed documents incorporated herein by reference which describe our outstanding registration rights, equity incentive plans and other securities.

COMMON STOCK

Under our Articles, we are authorized to issue up to 50,000,000 shares of common stock, par value \$0.01 per share. As of May 4, 2018, 34,697,845 shares of common stock were issued and outstanding.

Dividends, Voting Rights and Liquidation

The holders of shares of our common stock: (i) have equal, ratable rights to dividends from funds legally available therefor, when, as and if declared by the Board of Directors, (ii) are entitled to share ratably in all assets available for distribution to holders of shares of common stock upon liquidation, dissolution or winding up of our affairs, (iii) do not have preemptive, subscription or conversion rights and there are no redemption or sinking fund provisions applicable thereto and (iv) are entitled to one vote per share on all matters which shareholders may vote on at all meetings of shareholders. Except as otherwise required by statute, our Articles or our Bylaws, all matters are decided by a majority vote of the number of shares entitled to vote at the time of the vote.

Transfer Agent and Registrar

Broadridge Corporate Issuer Solutions, Inc. is the transfer agent and registrar for our common stock.

Minnesota Anti-Takeover Laws

We are governed by the provisions of Sections 302A.671, 302A.673 and 302A.675 of the MBCA. These provisions may discourage a negotiated acquisition or unsolicited takeover of us and deprive our shareholders of an opportunity to sell their common stock at a premium over the market price.

In general, Section 302A.671 of the MBCA provides that a corporation's shares acquired in a control share acquisition have no voting rights unless voting rights are approved in a prescribed manner. A "control share acquisition" is a direct or indirect acquisition of beneficial ownership of shares that would, when added to all other shares beneficially owned by the acquiring person, entitle the acquiring person to have voting power of 20% or more in the election of directors.

In general, Section 302A.673 of the MBCA prohibits a public Minnesota corporation from engaging in a business combination with an interested shareholder for a period of four years after the date of the transaction in which the person became an interested shareholder, unless the business combination is approved in a prescribed manner. The term "business combination" includes mergers, asset sales and other transactions resulting in a financial benefit to the interested shareholder. An "interested shareholder" is a person who is the beneficial owner, directly or indirectly, of 10% or more of a corporation's voting stock or who is an affiliate or associate of the corporation, and who, at any time within four years before the date in question, was the beneficial owner, directly or indirectly, of 10% or more of the corporation's voting stock. Section 302A.673 does not apply if a committee of our Board of Directors consisting of all of its disinterested directors (excluding current and former officers)

approves the proposed transaction or the interested shareholder's acquisition of shares before the interested shareholder becomes an interested shareholder.

If a tender offer is made for our common stock, Section 302A.675 of the MBCA precludes the offeror from acquiring additional shares of stock (including in acquisitions pursuant to mergers, consolidations or statutory share exchanges) within two years following the completion of the tender offer, unless shareholders selling their shares in the later acquisition are given the opportunity to sell their shares on terms that are substantially the same as those contained in the earlier tender offer. Section 302A.675 does not apply if a committee of our Board of Directors consisting of all of its disinterested directors (excluding its current and former officers) approves the proposed acquisition before any shares are acquired pursuant to the earlier tender offer.

Registration Rights

In connection with that certain Securities Purchase Agreement, dated as of August 26, 2015, between us and EW Healthcare Partners L.P., formerly named Essex Woodlands Fund IX, L.P. ("Essex"), we also entered into a Registration Rights Agreement with Essex, pursuant to which we granted Essex certain demand and "piggy-back" registration rights with respect to its shares of our common stock. The resale of all of Essex's shares has been registered pursuant to the Registration Rights Agreement.

USE OF PROCEEDS

Unless the applicable prospectus supplement states otherwise, we anticipate that the net proceeds from the sale of our securities will be used for general corporate purposes, and we will retain broad discretion with respect to the allocation thereof.

PLAN OF DISTRIBUTION

We may offer securities under this prospectus from time to time pursuant to underwritten public offerings, negotiated transactions, block trades or a combination of these methods or through underwriters or dealers, through agents and/or directly to one or more purchasers. The securities may be distributed from time to time in one or more transactions:

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

We may also sell equity securities covered by this registration statement in an "at the market offering" as defined in Rule 415(a)(4) under the Securities Act. Such offering may be made into an existing trading market for such securities in transactions at other than a fixed price on or through the facilities of Nasdaq or any other securities exchange or quotation or trading service on which such securities may be listed, quoted or traded at the time of sale.

Such at the market offerings, if any, may be conducted by underwriters acting as principal or agent.

Each time that securities covered by this prospectus are sold, we will provide a prospectus supplement or supplements that will describe the method of distribution and set forth the terms and conditions of the offering of such securities, including the offering price of the securities and the proceeds to us, if applicable.

Offers to purchase the securities being offered by this prospectus may be solicited directly. Agents may also be designated to solicit offers to purchase the securities from time to time. Any agent involved in the offer or sale of our securities will be identified in a prospectus supplement.

If a dealer is utilized in the sale of the securities being offered by this prospectus, the securities will be sold 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.

If an underwriter is utilized in the sale of the securities being offered by this prospectus, an underwriting agreement will be executed with the underwriter at the time of sale and the name of any underwriter will be provided in the prospectus supplement that the underwriter will use to make resales of the securities to the public. In connection with the sale of the securities, we, or the purchasers of securities for whom the underwriter may act as agent, may compensate the underwriter in the form of underwriting discounts or commissions. The underwriter 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 and/or commissions from the purchasers for which they may act as agent. Unless otherwise indicated in a prospectus supplement, an agent will be acting on a best efforts basis and a dealer will purchase securities as a principal, and may then resell the securities at varying prices to be determined by the dealer.

Any compensation paid to underwriters, dealers or agents in connection with the offering of the securities, and any discounts, concessions or commissions allowed by underwriters to participating dealers will be provided in the applicable prospectus supplement. Underwriters, dealers and agents participating in the distribution of the securities may be deemed to be underwriters within the meaning of the Securities Act, and any discounts and commissions received by them and any profit realized by them on resale of the securities may be deemed to be underwriting discounts and commissions. We

[Table of Contents](#)

may enter into agreements to indemnify underwriters, dealers and agents against civil liabilities, including liabilities under the Securities Act, or to contribute to payments they may be required to make in respect thereof and to reimburse those persons for certain expenses.

To facilitate the offering of securities, certain persons participating in the offering may engage in transactions that stabilize, maintain or otherwise affect the price of the securities. This may include over-allotments or short sales of the securities, which involve the sale by persons participating in the offering of more securities than were sold to them. In these circumstances, these persons would cover such over-allotments or short positions by making purchases in the open market or by exercising their over-allotment option, if any. In addition, these 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 dealers participating in the 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. These transactions may be discontinued at any time.

If indicated in the applicable prospectus supplement, underwriters or other persons acting as agents may be authorized to solicit offers by institutions or other suitable purchasers to purchase the securities at the public offering price set forth in the prospectus supplement, pursuant to delayed delivery contracts providing for payment and delivery on the date or dates stated in the prospectus supplement. These purchasers may include, among others, commercial and savings banks, insurance companies, pension funds, investment companies and educational and charitable institutions. Delayed delivery contracts will be subject to the condition that the purchase of the securities covered by the delayed delivery contracts will not at the time of delivery be prohibited under the laws of any jurisdiction in the United States to which the purchaser is subject. The underwriters and agents will not have any responsibility with respect to the validity or performance of these contracts.

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

The specific terms of any lock-up provisions in respect of any given offering will be described in the applicable prospectus supplement.

In compliance with the guidelines of the Financial Industry Regulatory Authority, Inc. ("FINRA"), the maximum consideration or discount to be received by any FINRA member or independent broker dealer may not exceed 8% of the aggregate proceeds of the offering.

The underwriters, dealers and agents may engage in transactions with us, or perform services for us, in the ordinary course of business for which they receive compensation.

General Information

Underwriters, dealers and agents that participate in the distribution of our securities may be underwriters as defined in the Securities Act, and any discounts or commissions they receive and any profit they make on the resale of the offered securities may be treated as underwriting discounts and commissions under the Securities Act. Any underwriters or agents will be identified and their compensation described in a prospectus supplement. We may indemnify agents, underwriters, and dealers against certain civil liabilities, including liabilities under the Securities Act, or make contributions to payments they may be required to make relating to those liabilities. Our agents, underwriters, and dealers, or their affiliates, may be customers of, engage in transactions with, or perform services for us in the ordinary course of business.

Representatives of the underwriters through whom our securities are sold for public offering and sale may engage in over-allotment, stabilizing transactions, syndicate short covering transactions and penalty bids in accordance with Regulation M under the Exchange Act. Over-allotment involves syndicate sales in excess of the offering size, which creates a syndicate short position. Stabilizing transactions permit bids to purchase the offered securities so long as the stabilizing bids do not exceed a specified maximum.

Syndicate covering transactions involve purchases of the offered securities in the open market after the distribution has been completed in order to cover syndicate short positions. Penalty bids permit the representative of the underwriters to reclaim a selling concession from a syndicate member when the offered securities originally sold by such syndicate member are purchased in a syndicate covering transaction to cover syndicate short positions. Such stabilizing transactions, syndicate covering transactions and penalty bids may cause the price of the offered securities to be higher than it would otherwise be in the absence of such transactions. These transactions may be effected on a national securities exchange and, if commenced, may be discontinued at any time.

Underwriters, dealers and agents may be customers of, engage in transactions with or perform services for, us and our subsidiaries in the ordinary course of business.

We will bear all costs, expenses and fees in connection with the registration of the securities as well as the expense of all commissions and discounts, if any, attributable to the sales of any of our securities by us.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy any document we file with the SEC at the SEC's public reference room at 100 F Street, N.E., Washington, D.C. 20549 on official business days during the hours of 10:00am and 3:00pm. Please call the SEC at 1-800-SEC-0330 for further information on the public reference room. The SEC maintains a website at <http://www.sec.gov> that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC. In addition, we maintain a website at <http://www.axogeninc.com> and make available free of charge on this website our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. Information contained in, or accessible through, our website does not constitute a part of this prospectus or any accompanying prospectus supplement.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" much of the information we file with it, which means that we can disclose important information to you by referring you to those publicly available documents. All of the information that we incorporate by reference is considered to be part of this prospectus, and any of our subsequent filings with the SEC will automatically update and supersede this information. This prospectus incorporates by reference the documents listed below and any future filings made by AxoGen with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, except for information furnished under Items 2.02 or 7.01 of our current reports on Form 8-K, or exhibits related thereto, between the date of this prospectus and the termination of the offering of the securities:

- our annual report on Form 10-K for the fiscal year ended December 31, 2017, filed with the SEC on February 28, 2018;
- the information specifically incorporated by reference into our annual report from our definitive proxy statement on Schedule 14A, filed with the SEC on March 29, 2018, as amended and supplemented by the Definitive Additional Materials on Schedule 14A that we filed with the SEC on March 29, 2018 and March 30, 2018;
- our quarterly report on Form 10-Q for the quarter ended March 31, 2018, filed with the SEC on April 30, 2018;
- our current reports on Form 8-K, filed with the SEC on January 5, 2018, March 13, 2018, and April 13, 2018; and
- the description of our common stock contained in our registration statement on Form 8-A filed with the SEC on August 6, 2013, including any amendment or report filed for the purpose of updating such description.

Any statement contained in any document incorporated by reference herein will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or any additional prospectus supplements modifies or supersedes such statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

We will provide, upon written or oral request, at no cost, to each person, including any beneficial owner, to whom a prospectus is delivered, a copy of any or all of the information that has been incorporated by reference in the prospectus but not delivered with the prospectus. You may request a

[Table of Contents](#)

copy of these filings by writing us at Investor Relations, c/o AxoGen, Inc., 13631 Progress Boulevard, Suite 400, Alachua, Florida 32615. Our telephone number is (386) 462-6800.

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

LEGAL MATTERS

Legal matters with respect to the securities offered hereby are being passed upon for us by DLA Piper LLP (US), Short Hills, New Jersey.

EXPERTS

The consolidated financial statements and schedule of AxoGen, Inc. and its subsidiaries as of December 31, 2017 and 2016, and the related consolidated statements of operations, shareholders' equity and cash flows for each of the years in the three-year period ended December 31, 2017, and management's assessment of the effectiveness of internal control over financial reporting as of December 31, 2017, have been incorporated by reference herein in reliance upon the reports of Lurie, LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.



Common Stock

Prospectus

May 7, 2018

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

The following table sets forth fees and expenses payable by the registrant, other than underwriting discounts and commissions, in connection with the issuance and distribution of the securities being registered hereby. Except as to the amount set forth below, the registrant is deferring payment of the registration fee in reliance on Rule 456(b) and Rule 457(r) under the Securities Act. All amounts set forth below are estimates. All of such expenses are being borne by the registrant.

SEC Registration Fee	\$	(1)
Printing and Engraving Fees		(2)
Legal Fees and Expenses		(2)
Accounting Fees and Expenses		(2)
Transfer Agent and Registrar Fees		(2)
Miscellaneous		(2)
Total	\$	(2)

- (1) Omitted because the registration fee is being deferred pursuant to Rule 456(b) and Rule 457(r) under the Securities Act.
- (2) These fees and expenses depend on the securities offered and the number of issuances, and accordingly cannot be estimated at this time.

Item 15. Indemnification of Directors and Officers

Section 302A.521, subd. 2 of the MBCA requires the Company to indemnify a person made or threatened to be made a party to a proceeding by reason of the former or present official capacity of the person with respect to the Company, against judgments, penalties, fines, settlements, and reasonable expenses, including attorneys' fees and disbursements, incurred by the person in connection with the proceeding if certain statutory standards are met, unless the Company amends its Articles of Incorporation or Bylaws to prohibit or condition such indemnification rights. In addition, Section 302A.521, subd. 3 of the MBCA requires payment by the Company, upon written request, of reasonable expenses in advance of final disposition of the proceeding in certain circumstances unless the Company amends its Articles of Incorporation or Bylaws to prohibit or condition such expense advancement rights. Under Section 302A.521, subd. 4, the Company may amend the Articles of Incorporation or the Bylaws to prohibit or condition such indemnification or expense advancement rights. A decision as to required indemnification shall be made (i) by a disinterested majority of the Company's Board of Directors present at a meeting at which a disinterested quorum is present, (ii) by a designated committee of the Board of Directors consisting of two or more disinterested directors, (iii) by special legal counsel selected by the board or a committee by vote pursuant to clause (i) or (ii) above, (iv) by an affirmative vote of the Company's shareholders, in which the shares held by parties to the proceeding is not counted in determining the presence of a quorum and are not considered to be present and entitled to vote, or (v) by a court in Minnesota. For purposes of clauses (i) and (ii) above, a director is disinterested if he or she is not a party to the proceeding for which indemnification or expense advancement is at issue. Section 302A.521 of the MBCA contains detailed terms regarding such right of indemnification and reference is made thereto for a complete statement of such indemnification rights.

Article 7 of the Company's Articles of Incorporation provides that, to the fullest extent permitted by the MBCA as the same exists or may hereafter be amended, a director of the Company shall not be personally liable to the Company or its shareholders for monetary damages for breach of fiduciary duty

as a director; provided, however, that Article 7 shall not eliminate or limit the liability of a director to the extent provided by applicable law (i) for any breach of the director's duty of loyalty to the corporation or its shareholders, (ii) for acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law, (iii) under Section 302A.559 or 80A.76 of the MBCA, (iv) for any transaction from which the director derived an improper personal benefit, or (v) for any act or omission occurring prior to the effective date of Article 7 or any predecessor of the provision. Neither the amendment, modification or repeal of Article 7 nor the adoption of any provision in the Articles of Incorporation inconsistent with Article 7 shall adversely affect any right or protection of a director or officer of the Company with respect to any act or omission that occurred prior to the time of such amendment, modification, repeal or adoption.

The Bylaws provide that the directors and officers of the Company shall have the right to indemnification provided by Section 302A.521 of the MBCA, as now enacted or hereafter amended. Under Section 302A.521, subd. 2, indemnification will be available only where an officer, director or employee can establish that he or she: (i) has not been indemnified by another organization with respect to the same acts or omissions; (ii) acted in good faith; (iii) received no improper personal benefits; (iv) in the case of a criminal proceeding, had no reasonable cause to believe the conduct was unlawful; and (v) reasonably believed the conduct was in the best interests of the Company or, in certain circumstances, reasonably believed that the conduct was not opposed to the best interests of the Company.

The Company maintains, on behalf of its directors and officers, insurance protection against certain liabilities arising out of the discharge of their duties, as well as insurance covering the Company for indemnification payments made to its directors and officers for certain liabilities. The premiums for such insurance are paid by the Company.

Any underwriting agreements that the Company may enter into will likely provide for the indemnification of the Company, its controlling persons, its directors and certain of its officers by the underwriters against certain liabilities, including liabilities under the Securities Act.

Item 16. Exhibits

The exhibits to this registration statement are listed in the Exhibit Index to this registration statement, which Exhibit Index is hereby incorporated by reference.

Item 17. Undertakings

(a) The undersigned registrant hereby undertakes:

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

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

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

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

provided, however, that paragraphs(a)(1) (i), (ii) and (iii) above do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in this registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

- 2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- 3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
- 4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:

(i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5) or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii) or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which the prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

- 5) That, for the purpose of determining liability of the registrant under the Securities Act to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

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

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

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

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

- (b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- (c) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant, the registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

EXHIBIT INDEX

Exhibit No.	Description
1.1	Form of Underwriting Agreement*
4.1	Registration Rights Agreement, dated as of August 26, 2015, between the Company and EW Healthcare Partners L.P., formerly named Essex Woodlands Fund IX, L.P. (incorporated by reference to Exhibit 4.2 to the annual report on Form 10-K filed on February 28, 2018).
5.1	Opinion of DLA Piper LLP (US)†
12.1	Statement of Computation of Ratios of Earnings to Fixed Charges*
23.1	Consent of Lurie, LLP †
23.2	Consent of DLA Piper LLP (US) (included in Exhibit 5.1)†
24.1	Power of Attorney (included on signature page to this Registration Statement)
†	Filed herewith.
*	To be filed by amendment or as an exhibit to a document incorporated by reference or deemed to be incorporated by reference in this registration statement, including a current report on Form 8-K, in connection with the offering of any securities, as appropriate.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized in the City of Alachua, in the State of Florida on May 7, 2018.

AxoGen, Inc.

By: /s/ KAREN ZADEREJ

May 7, 2018

Name: Karen Zaderej
Title: *Chief Executive Officer*

II-6

SIGNATURES AND POWER OF ATTORNEY

Each person whose individual signature appears below hereby authorizes and appoints Karen Zaderej and Gregory G. Freitag, and each of them, with full power of substitution and resubstitution and full power to act without the other, as his or her true and lawful attorney in fact and agent to act in his or her name, place and stead and to execute in the name and on behalf of each person, individually and in each capacity stated below, and to file any and all amendments to this registration statement, including any and all post-effective amendments and amendments thereto, and any registration statement relating to the same offering filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the U.S. Securities and Exchange Commission, granting unto said attorneys in fact and agents, and each of them, full power and authority to do and perform each and every act and thing, ratifying and confirming all that said attorneys in fact and agents or any of them or their or his substitute or substitutes may lawfully do or cause to be done by virtue thereof.

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

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ KAREN ZADEREJ</u> Karen Zaderej	Chief Executive Officer and Director (Principal Executive Officer)	May 7, 2018
<u>/s/ PETER J. MARIANI</u> Peter J. Mariani	Chief Financial Officer (Principal Financial and Accounting Officer)	May 7, 2018
<u>/s/ GREGORY G. FREITAG</u> Gregory G. Freitag	General Counsel, SVP Business Development and Director	May 7, 2018
<u>/s/ JAMIE M. GROOMS</u> Jamie M. Grooms	Director	May 7, 2018
<u>/s/ ROBERT J. RUDELIUS</u> Robert J. Rudelius	Director	May 7, 2018
<u>/s/ MARK GOLD, M.D.</u> Mark Gold, M.D.	Director	May 7, 2018
<u>/s/ GUIDO J. NEELS</u> Guido J. Neels	Director	May 7, 2018
<u>/s/ AMY WENDELL</u> Amy Wendell	Director	May 7, 2018

DLA Piper LLP (US)
51 John F. Kennedy Parkway, Suite 120
Short Hills, New Jersey 07078
www.dlapiper.com

T: 973-520-2550
F: 973-520-2551

Attorneys Responsible for Short Hills Office:
Andrew P. Gilbert
Michael E. Helmer

May 7, 2018

AxoGen, Inc.
13631 Progress Boulevard, Suite 400
Alachua, Florida 32615

RE: AxoGen, Inc. Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as counsel to AxoGen, Inc., a Minnesota corporation (the “Company”), in connection with the filing by the Company of the referenced Registration Statement (the “Registration Statement”) under the Securities Act of 1933, as amended (the “Act”) with the Securities and Exchange Commission (the “SEC”) pursuant to Rule 415 under the Act. The Registration Statement relates to the proposed offering and sale of an indeterminate number of shares of Common Stock, par value \$0.01 per share (the “Common Stock”), of the Company (the “Shares”).

In connection with this opinion letter, we have examined the Registration Statement and originals, or copies certified or otherwise identified to our satisfaction, of the Articles of Incorporation, as amended and restated, of the Company as filed with the Secretary of State of the State of Minnesota, the Bylaws of the Company, as amended and restated, and the minutes of meetings of the shareholders and the Board of Directors of the Company as provided to us by the Company and such other documents, records and other instruments as we have deemed appropriate for purposes of the opinion set forth herein.

We have assumed the genuineness of all signatures, the legal capacity of all natural persons, the authenticity of the documents submitted to us as originals, the conformity with the originals of all documents submitted to us as certified, facsimile or photostatic copies and the authenticity of the originals of all documents submitted to us as copies.

Based upon the foregoing, we are of the opinion that the Shares have been duly authorized by the Company and when issued and sold by the Company and delivered by the Company against receipt of the purchase price therefor, in the manner as the Board of Directors of the Company

AxoGen, Inc.
May 7, 2018
Page 2

(or a duly authorized committee thereof) may determine, will be validly issued, fully paid and non-assessable.

The opinion expressed herein is limited to the Minnesota Business Corporation Act.

We hereby consent to the use of this opinion as Exhibit 5.1 to the Registration Statement and to the reference to us under the caption “Legal Matters” in the prospectus included in the Registration Statement. In giving such consent, we do not hereby admit that we are acting within the category of persons whose consent is required under Section 7 of the Act or the rules or regulations of the SEC thereunder.

Very truly yours,

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement on Form S-3 of our report dated February 28, 2018, with respect to the consolidated financial statements and effectiveness of internal control over financial reporting of AxoGen, Inc. and Subsidiaries, included in the Annual Report on Form 10-K as of and for the year ended December 31, 2017, filed with the Securities and Exchange Commission.

We also consent to the reference to our firm under the caption “Experts” in the Prospectus, which is part of this Registration Statement.

/s/ Lurie, LLP
Minneapolis, Minnesota

May 7, 2018
