Jaguar Health, Inc.
Form 424B5
October 02, 2017

Use these links to rapidly review the document
TABLE OF CONTENTS
TABLE OF CONTENTS

Table of Contents

**Filed Pursuant to Rule 424(b)(5)**
**Registration No. 333-220236**

**PROSPECTUS SUPPLEMENT (TO PROSPECTUS DATED SEPTEMBER 14, 2017)**

# JAGUAR HEALTH, INC.

## 21,250,000 Shares of Common Stock

We are offering 21,250,000 shares of our common stock at a price of $0.20 per share in a firm commitment underwritten public offering. Our common stock is listed on the NASDAQ Capital Market under the symbol "JAGX." On September 28, 2017, the last reported sale price of our common stock on the NASDAQ Capital Market was $0.40 per share.

As of September 28, 2017, the aggregate market value of our outstanding common stock held by non-affiliates, or public float, was $37.6 million, which was calculated based on 67,700,655 shares of outstanding common stock held by non-affiliates and on a price per share of $0.56, the last reported sale price of our common stock on the NASDAQ Capital Market on August 7, 2017. During the 12 calendar month period that ends on, and includes, the date of this prospectus supplement, we have not sold any securities pursuant to General Instruction I.B.6 of Form S-3. In no event will we sell our common stock in a primary public offering with a value exceeding one-third of our public float in any 12-calendar-month period so long as our public float remains below $75.0 million.

**Investing in our common stock involves a high degree of risk. Before deciding whether to invest in our securities, you should consider carefully the risks that we have described on page S-15 of this prospectus supplement under the caption "Risk Factors" and in the documents incorporated by reference into this prospectus supplement and the accompanying prospectus.**

| | Per Share | Total |
|---|---|---|
| Public offering price | $0.20 | $4,250,000 |
| Underwriting discounts and commissions(1) | $0.014 | $297,500 |
| Proceeds, before expenses, to us | $0.186 | $3,952,500 |

(1) We have agreed to reimburse the underwriters for certain expenses. See "Underwriting."

We have granted the underwriters an option for a period of 45 days to purchase up to an additional 3,187,500 shares of our common stock to cover over-allotments, if any. If the underwriters exercise their option in full, the total underwriting discounts and commissions payable by us will be $342,125 and the total proceeds to us, before expenses, will be $4,545,375.

The underwriters expect to deliver shares of common stock to purchasers on October 3, 2017.

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

***Sole Book Running Manager***

## Maxim Group LLC

***Co-Manager***

## WestPark Capital, Inc.

The date of this prospectus supplement is September 29, 2017.

Table of Contents

**TABLE OF CONTENTS**

Table of Contents

## ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement and the accompanying prospectus dated September 14, 2017 are part of a registration statement that we filed with the Securities and Exchange Commission (the "SEC") using a "shelf" registration process. This prospectus supplement and the accompanying prospectus relate to the offer by us of shares of our common stock to certain investors. We provide information to you about this offering of shares of our common stock in two separate documents that are bound together: (1) this prospectus supplement, which describes the specific details regarding this offering; and (2) the accompanying prospectus, which provides general information, some of which may not apply to this offering. Generally, when we refer to this "prospectus," we are referring to both documents combined. If information in this prospectus supplement is inconsistent with the accompanying prospectus, you should rely on this prospectus supplement. However, if any statement in one of these documents is inconsistent with a statement in another document having a later date for example, a document incorporated by reference in this prospectus supplement or the accompanying prospectus the statement in the document having the later date modifies or supersedes the earlier statement as our business, financial condition, results of operations and prospects may have changed since the earlier dates. You should not assume that the information contained or incorporated by reference in this prospectus supplement, the accompanying prospectus or any free-writing prospectus is accurate as of any date other than as of the date of this prospectus supplement, the accompanying prospectus or any related free-writing prospectus, as the case may be, or in the case of the documents incorporated by reference, the date of such documents regardless of the time of delivery of this prospectus supplement and the accompanying prospectus or any sale of our securities. You should read this prospectus supplement, the accompanying prospectus, the documents and information incorporated by reference in this prospectus supplement and the accompanying prospectus and any free writing prospectus that we have authorized for use in connection with this offering when making your investment decision. You should also read and consider the information in the documents to which we have referred you under the captions "Where You Can Find More Information" and "Incorporation of Information by Reference" in this prospectus supplement. We have not, and the underwriters have not, authorized anyone to provide you with information that is in addition to, or different from, that contained or incorporated by reference in this prospectus supplement, the accompanying prospectus or in any free writing prospectuses we have prepared. If anyone provides you with different or inconsistent information, you should not rely on it. We are not, and the underwriters are not, offering to sell securities in any jurisdiction where the offer or sale is not permitted.

Unless the context otherwise requires, references in this prospectus supplement to "Jaguar," the "Company," "we," "us," and "our" refer to Jaguar Health, Inc.

Table of Contents

## PROSPECTUS SUPPLEMENT SUMMARY

*The following is a summary of what we believe to be the most important aspects of our business and the offering of our securities under this prospectus supplement and in the accompanying prospectus. We urge you to read this entire prospectus supplement, the accompanying prospectus and any free writing prospectus that we have authorized for use in connection with this offering, including the section entitled "Risk Factors" and the more detailed financial statements, notes to the financial statements and other information incorporated by reference from our other filings with the SEC.*

### Overview

We are a natural-products pharmaceuticals company focused on the development and commercialization of novel, sustainably derived gastrointestinal products for both human prescription use and animals on a global basis. Our wholly-owned subsidiary, Napo Pharmaceuticals, Inc. ("Napo"), focuses on the development and commercialization of proprietary human gastrointestinal pharmaceuticals for the global marketplace from plants used traditionally in rainforest areas. Our Mytesi (crofelemer) product is approved by the U.S. Food and Drug Administration ("FDA") for the symptomatic relief of noninfectious diarrhea in adults with HIV/AIDS on antiretroviral therapy.

Jaguar was founded in San Francisco, California as a Delaware corporation on June 6, 2013. Napo formed Jaguar to develop and commercialize animal health products. Effective as of December 31, 2013, Jaguar was a wholly-owned subsidiary of Napo, and until May 13, 2015, Jaguar was a majority-owned subsidiary of Napo. On July 31, 2017, the merger of Jaguar Animal Health, Inc. and Napo became effective, at which point Jaguar Animal Health's name changed to Jaguar Health, Inc. and Napo began operating as a wholly-owned subsidiary of Jaguar focused on human health and the ongoing commercialization of, and development of follow-on indications for, Mytesi.

Mytesi is a novel, first-in-class anti-secretory agent which has a basic normalizing effect locally on the gut, and this mechanism of action has the potential to benefit multiple disorders. We believe we control commercial rights for Mytesi for all indications, territories and patient populations globally, and we are pursuing a follow-on indication for Mytesi in chemotherapy-induced diarrhea ("CID"), an important supportive care indication for patients undergoing primary or adjuvant chemotherapy for cancer treatment. Mytesi is also in development for rare disease indications for infants and children with congenital diarrheal disorders and short bowel syndrome ("SBS"); for irritable bowel syndrome ("IBS") (Mytesi has demonstrated benefit to IBS-D patients in published Phase 2 studies); for supportive care for inflammatory bowel disease ("IBD"); and as a second-generation anti-secretory agent for use in cholera patients. Mytesi has received orphan-drug designation for SBS.

To date in 2017, Mytesi net sales are approximately $1.2 million. Napo launched Mytesi in early 2017 with one full-time-equivalent Mytesi sales representative focused on targeting high-decile prescribing HIV doctors. Napo recently significantly expanded its internal national salesforce for Mytesi through the hire in key U.S. markets of six additional full-time sales representatives experienced in the sale of drugs to HIV physicians and gastroenterologists. Napo's new sales representatives are based in and will cover New York, Miami, Atlanta, Los Angeles, Houston, San Francisco, Chicago and St. Louis and the surrounding regions. All of these regions are key markets for HIV-related drug sales. Two of our new territory managers have been calling on HIV physicians for 18 to 19 years, and others possess extensive experience in drug sales to both gastroenterologists and HIV healthcare providers.

This new in-house sales team will replace the external national Mytesi salesforce Napo established as a part-time effort in February of this year. The goal of Napo's internal sales team is to deliver a frequent and consistent selling message to targeted, high-volume prescribers of antiretroviral therapies and to gastroenterologists who see large numbers of HIV patients. With seven sales representatives reporting to our newly hired national sales manager, supported by concomitant marketing, promotional activities, and medical education initiatives such as the poster presentation Napo conducted at the

Table of Contents

July 2017 International Aids Society Conference on HIV Science in Paris we expect a proportional response in the number of patients treated with Mytesi.

Mytesi is currently covered by all of the top 10 commercial insurance plans, representing more than 245 million U.S. lives. In the top 10 Managed Medicare plans, which represent 24 million covered lives, Mytesi is currently covered on 10% of plans. Mytesi is currently covered on Medicaid in all 50 states. We have a copay coupon program to offset the cost of Mytesi so no patient pays more than $25, and the NapoCares Patient Assistance Program assists patients with benefit verification, prior authorization, and claims appeals.

According to a 2017 report from Research and Markets, the combined global market for prescription and OTC gastrointestinal agents is expected to reach $21 billion by 2025.

Our management team has significant experience in gastrointestinal product development for both humans and animals. Napo was founded 28 years ago to perform drug discovery and development by leveraging the knowledge of traditional healers working in rainforest areas. Ten members of the Jaguar and Napo team have been together for more than 15 years. Dr. Steven King, our executive vice president of sustainable supply, ethnobotanical research and intellectual property, and Lisa Conte, our founder, president and CEO, have worked together for more than 28 years. Together, these dedicated personnel successfully transformed crofelemer, which is extracted from trees growing in the rainforest, to Mytesi, which is a natural, sustainably harvested, FDA-approved drug.

The active ingredient in Mytesi is the basis for our eleven different animal health products across eight different species, all of which work by the same mechanism of action, which is highly conserved across all mammals. In the animal health space, we focus on developing and commercializing first-in-class gastrointestinal products for companion and production animals, foals, and high value horses. Portfolio planning for the animal health space is of utmost importance to us, given the wide array of potential species-specific products and because we do not want animal-related research and development activities to divert significant financial resources while we are focusing on growing Mytesi sales and seeking to move the company towards profitability. Canalevia is our lead veterinary prescription drug product candidate, intended for treatment of various forms of diarrhea in dogs. We have received minor use in a minor species ("MUMS") designation for Canalevia for CID in dogs.

We retain commercial responsibility for the CID and EID indications of Canalevia in dogs, while the balance of our companion animal program is fully funded by Elanco US, a wholly-owned subsidiary of Eli Lilly. If Canalevia is approved for CID and EID in dogs, we expect to conduct the commercial launch of Canalevia for these indications in the first half of 2018.

The equine athlete business continues to be a major focus area for the animal health side of our business. The demand, particularly in the Middle East, for a "total gut health" product for high performance equine athletes appears to be quite strong, and we believe this is indicative of an unmet medical need. Based on this demand, and with support from studies we conducted in horses with gastric ulcers a prevalent problem in competing horses and also horses with diarrhea, we have transitioned development of Equilevia to a create a non-prescription, personalized, premium proprietary product for total gut health in equine athletes. Gut health is of critical importance in horses, as conditions such as colic can lead to the death of an otherwise healthy horse in a matter of hours. Although we are still assessing the size of the opportunity represented by this self-funded program, we expect to begin generating revenue from the sale of Equilevia in the fourth quarter of 2017.

We will consider additional animal formulations and additional animal product expenditures from time to time as part of portfolio planning and prioritization in the context of the combined company.

There are significant barriers to entry for Mytesi (crofelemer). Through Napo, we hold an extensive global patent portfolio. At the present time we hold 110 issued worldwide patents, with

Table of Contents

coverage in many cases that extends until 2031. These issued patents cover multiple indications including HIV-AIDS diarrhea, IBS, IBD, manufacturing, enteric protection from gastric juices, among others. We also have 68 pending patent applications worldwide in the human and animal health areas that are being prosecuted.

Mytesi is the first oral drug approved by the FDA under botanical guidance, which provides another barrier to entry from potential generic competition. The FDA requires that the manufacturer of crofelemer use a validated proprietary bioassay to release the drug substance and drug product of Mytesi. While most generic products are fashioned to meet chemical release specifications that are in the public domain, the specifics of this assay are not publicly available. In addition, Mytesi is not systemically absorbed, so the classic approach of creating a generic drug by matching pharmakinetic blood levels is not possible. A generic player would have to conduct costly and risky clinical trials.

Crofelemer is extracted from the *Croton lechleri* tree, which we sustainably harvest and manage through programs that we have been developing over the past 28 years. This process has involved working with communities to plant trees, obtaining permits for export, and creating a supply network that is robust and reliable.

We continue to have working relationships with partners that began in the 1990s. Additionally, through the establishment of a nonprofit called the Healing Forest Conservancy (HFC), our team has created a long-term mechanism for benefit sharing that recognizes the intellectual contribution of indigenous populations. This program is intended to contribute to the continued strength and effectiveness of the valued and strategically important relationships we have carefully cultivated over the past 28 years.

**Recent Developments**

***Merger with Napo Pharmaceuticals, Inc.***

On July 31, 2017, we completed the merger with Napo (the "Merger") pursuant to the Agreement and Plan of Merger dated March 31, 2017 by and among Jaguar, Napo, Napo Acquisition Corporation, a wholly-owned subsidiary of Jaguar ("Merger Sub"), and Napo's representative (the "Merger Agreement"). In accordance with the terms of the Merger Agreement, upon the completion of the merger, Merger Sub merged with and into Napo, with Napo surviving as our wholly-owned subsidiary. Immediately following the Merger, we changed our name from "Jaguar Animal Health, Inc." to "Jaguar Health, Inc." Napo now operates as our wholly-owned subsidiary focused on human health and the ongoing commercialization of Mytesi, a Napo drug product approved by the U.S. FDA for the symptomatic relief of noninfectious diarrhea in adults with HIV/AIDS on antiretroviral therapy. Napo provides Jaguar not only with additional revenue streams but also synergies such as the manufacture of crofelemer at a larger volume for both human and animal marketplaces.

In connection with the Merger, (i) each issued and outstanding share of Napo common stock (other than dissenting shares and shares held by us or Napo) was converted into a contingent right to receive (x) up to a whole number of shares of our common stock comprising in the aggregate up to approximately 20.2% of the fully diluted shares of our common stock immediately following the consummation of the merger, which contingent right will vest only if the resale of certain shares of our common stock (the "Tranche A Shares") issued by us to Nantucket Investments Limited ("Nantucket") pursuant to the Napo debt settlement provides Nantucket with specified cash returns over a specified period of time (the "Hurdle Amounts"), and (y) if the applicable Hurdle Amount is achieved before all of the Tranche A Shares are sold, additional shares of our common stock (equal to 50% of the unsold Tranche A Shares), which will be distributed pro rata among holders of contingent rights and holders of Napo restricted stock units, (ii) existing creditors of Napo (inclusive of Nantucket) were issued in the aggregate approximately 42,903,018 shares of our non-voting common stock and 2,282,445 shares of our voting common stock in full satisfaction of all existing indebtedness then owed by Napo to such

Table of Contents

creditors, and (iii) an existing Napo stockholder ("Invesco") was issued an aggregate of approximately 3,243,243 shares of our common stock in return for $3 million of new funds invested in us by such investor, which were immediately loaned to Napo to partially facilitate the extinguishment of the debt that Napo owed to Nantucket. The minimum Hurdle Amount needed for the vesting of the contingent rights will vary depending on the time period over which Nantucket receives specified cash returns in connection with the resale of the Tranche A Shares, and Napo stockholders may not receive any shares of our common stock in certain circumstances (including if the minimum Hurdle Amount is not satisfied).

***Termination, Asset Transfer and Transition Agreement***

On September 19, 2017 (the "Transfer Date"), Napo entered into the Termination, Asset Transfer and Transition Agreement (the "Glenmark Transition Agreement") with Glenmark Pharmaceuticals Ltd. ("Glenmark"). Glenmark is Napo's primary manufacturer of crofelemer, the active pharmaceutical ingredient (API) in Mytesi. The Glenmark Transition Agreement supersedes the Collaboration Agreement, dated July 2, 2005, by and between Napo and Glenmark (the "Glenmark Collaboration Agreement") and returns to Napo certain rights which Napo licensed to Glenmark pursuant to the Glenmark Collaboration Agreement related to the development and commercialization of crofelemer for certain specified human indications in India and 140 other countries largely in developing regions (the "Transferred Assets").

As a result of the execution of the Glenmark Transition Agreement, we, through Napo, now control commercial rights for Mytesi for all indications, territories and patient populations globally, and also hold commercial rights to the existing regulatory approvals for crofelemer in Brazil, Ecuador, Zimbabwe and Botswana.

In consideration for Glenmark's assignment and transfer of the Transferred Assets to Napo, Napo agreed to pay Glenmark in cash, within 45 days after receipt by Napo, 25% of any payment that Napo receives from a third party to whom Napo grants a license or sublicense or with whom Napo partners in respect of, or sells or otherwise transfers any of the Transferred Assets, subject to certain limitations, until Glenmark has received a total of $7 million. As additional consideration for the assignment and transfer of the Transferred Assets, Napo agreed (i) to enter into, within 90 days after the Transfer Date, a manufacturing and supply agreement with Glenmark for crofelemer, which will be manufactured at either or both of Glenmark's facilities in India and (ii) to transfer and assign to Glenmark all right, title and interest in and to certain required dedicated equipment used to manufacture crofelemer located at Glenmark's Ankleshwar facility, subject to certain limitations.

Table of Contents

**Product Pipeline**

***Human Health***

In addition to our Mytesi (crofelemer) product that is approved by the U.S. FDA for the symptomatic relief of noninfectious diarrhea in adults with HIV/AIDS on antiretroviral therapy, we are also developing a pipeline of prescription drug product candidates to address unmet needs in gastrointestinal health through Napo. Mytesi (crofelemer) is a novel, first-in-class anti-secretory agent which has a basic normalizing effect locally on the gut, and this mechanism of action has the potential to benefit multiple disorders. Clinical trials demonstrated that nearly 80 percent of Mytesi users experienced an improvement in their diarrhea over a four-week period. At week 20 of the pivotal trial, over half the patients had no watery stools, or a 100% decrease, and 83% had at least a 50% decrease in watery stools. Initiation on a new antiretroviral therapy has been shown to causes diarrhea 15% of the time. Our Mytesi pipeline currently includes prescription drug product candidates for four follow-on indications, several of which are backed by strong Phase 2 evidence from completed Phase 2 trials. In addition, a second-generation proprietary anti-secretory agent is in development for cholera.

**Napo Prescription Drug Product Candidates**

| Product Candidates | Indication | Completed Milestones | Current Phase of Development | Anticipated Near-Term Milestones |
|---|---|---|---|---|
| Formulation of crofelemer | Chemotherapy-induced diarrhea (CID) | Two investigator-initiated clinical trials funded by Genentech, Roche & Puma | Phase 2 | Protocol development with KOLs for discussions with FDA<br><br>Start pivotal trial in 2018* |
| Formulation of crofelemer | Supportive care for IBD | Safety | Phase 2 | Protocol development for discussions with FDA |
| Formulation of crofelemer | Rare disease indications (SBS & CDD) | Multiple Phase 2 studies completed in various secretory diarrheas (not IBD)<br><br>Phase I study<br><br>Orphan designation for SBS | Phase 2 | Formulation/proof-of-concept 2018, Abu Dhabi<br><br>Pivotal Trial 2018* |

| | | | | |
|---|---|---|---|---|
| | | | | Pursue orphan-drug status for CDD |
| Formulation of crofelemer | Irritable Bowel Syndrome diarrhea predominant (IBS-D) | Phase I study | Phase 2 | |
| | | | | Protocol development with KOLs for discussions with FDA |
| | | Two significant Phase 2 studies completed | | |
| | | | | Publication of additional analysis of Phase 2 data |
| SB-300 | Second-generation anti-secretory agent for multiple indications including cholera | Animal and human studies in secretory diarrheas; successful cholera trial design for anti-secretory mechanism of action with crofelemer | Pre IND | CMC development for SB-300 |
| | | | | Pre-clinical and Phase 1 in 2018* |

* Clinical trials are funding dependent

Table of Contents

**Estimated Size of Mytesi Target Markets**

We believe the medical need for Mytesi is significant, compelling, and unmet, and that doctors are looking for a drug product with a mechanism of action that is distinct from the options currently available to resolve diarrhea. A growing percentage of HIV patients have lived with the virus in their gut for 10+ years, often causing gut enteropathy and chronic or chronic-episodic diarrhea. According to data from the U.S. Centers for Disease Control and Prevention, by 2020 more than 70% of Americans with HIV are expected to be 50 and older.

| Market | Number of Competitors for Mytesi's Approved/ Anticipated Labelled Indication | Market Size/Potential |
|---|---|---|
| HIV-D | 0 | We estimate the U.S. market revenue potential for Mytesi to be approximately $100 million in gross annual sales |
| CID | 0 | An estimated 650,000 U.S. cancer patients receive chemotherapy in an outpatient oncology clinic.(1) Comparable supportive care (i.e. CINV) product sales of ~$620 million in 2013, which is projected to reach $1.0 billion by 2020(2) |
| IBD | 0 | Estimated 1,171,000 Americans have IBD(3) |
| IBS-D | 3 | Most IBS products have estimated revenue potential of greater than $1.0 billion(4) |
| CDD/SBS-Orphan | 0 | Financial benefits of Orphan Designation |
| Cholera (hydration maintenance)<br>PRV (SB-300) | 0 | Priority review vouchers have recently sold for $125 million to $350 million(5) |

(1) Centers for Disease Control and Prevention. Preventing Infections in Cancer Patients: Information for Health Care Providers (cdc.gov/cancer/preventinfections/providers.htm)

(2) Heron Therapeutics, Inc. Form 10-K for the fiscal year ended December 31, 2016

(3) Kappelman, M. et al. Recent Trends in the Prevalence of Crohn's Disease and Ulcerative Colitis in a Commercially Insured US Population. Dig Dis Sci. 2013 Feb; 58(2): 519-525

(4) Merrill Lynch forecasts peak US sales of roughly $1.5 bn for Ironwood's Linzess (http://247wallst.com/healthcare-business/2015/04/27/key-analyst-sees-nearly-30-upside-in-ironwood); Rodman & Renshaw estimate peak annual sales of Synergy Pharmaceuticals' Trulance at $2.3 bn in 2021 (Source: https://www.benzinga.com/analyst-ratings/analyst-color/17/03/9224181/analyst-synergy-pharma-could-achieve-sustainable-profita)

(5) In Aug. 2015, AbbVie Inc. bought a priority review voucher from United Therapeutics Corp for $350 million (http://www.reuters.com/article/us-abbvie-priorityreview/abbvie-buys-special-review-voucher-for-350-million-idUSKCN0QO1LQ20150819). In Feb. 2017 Sarpeta Therapeutics sold a priority review voucher to Gilead Sciences, Inc. for $125 million (http://fortune.com/2017/02/21/sarepta-gilead-review-voucher/).

Table of Contents

***Animal Health***

Our pipeline currently includes prescription drug product candidates and non-prescription products targeting eight species. Neonorm Foal is an antidiarrheal product for newborn horses, which we launched in the United States in early 2016. Neonorm Calf is an antidiarrheal product for preweaned dairy calves, which we launched in the United States at the end of 2014. We are also developing a pipeline of prescription drug product candidates and non-prescription (non-drug) products to address unmet needs in animal health.

Neonorm is a standardized botanical extract derived from the *Croton lechleri* tree. The reception among users of Neonorm Calf and Neonorm Foal has been positive. In June 2017 we launched neonorm.com, a commercial website for both Neonorm products. As we announced on June 14, 2017, the Organic Materials Review Institute ("OMRI") has reviewed Neonorm Calf and determined that it is allowed for use in compliance with the U.S. Department of Agriculture National Organic Program. OMRI is an international nonprofit organization that determines which input products are allowed for use in organic production and processing. To date, our non-prescription animal health products have generated approximately $206,805 in net revenue in 2017.

Table of Contents

**Jaguar Animal Prescription Drug Product Candidates**

| Product Candidates | Species | Indication | Recent Developments | Anticipated Near-Term Milestones |
|---|---|---|---|---|
| Canalevia | Dogs | CID | | |
| | | | Completed safety study with commercial formulation in June 2015 | Commercial launch in first half of 2018 |
| | Dogs | EID | Received MUMS designation | Commercial launch in first half of 2018 |
| | | | Completed safety study with commercial formulation in June 2015 | |
| | Dogs | General diarrhea | FDA indicated that use of Canalevia for this indication qualifies as a "minor use" | |
| | | | Concurred protocol | Program specifics funded by Elanco, including initiating development of second generation flavored chew formulation |
| | | | Initiated pivotal field trial to evaluate safety and effectiveness | |
| Species-specific formulations of crofelemer | Cats | General diarrhea | Entered into License, Development, Co-Promotion and Commercialization Agreement with Elanco in January 2017 | |
| | | | INAD opened in 2014 | Program specifics funded by Elanco |

| | | | | |
|---|---|---|---|---|
| Virend (topical) | Cats | Herpes virus | Entered into License, Development, Co-Promotion and Commercialization Agreement with Elanco in January 2017 | |
| Species-specific formulations of NP-500 | Dogs | Obesity-related metabolic dysfunction | INAD opened in 2014 | Subject to future portfolio planning and prioritization |
| | Horses | Metabolic syndrome | INAD opened in 2014 | |
| | Cats | Type II diabetes | INAD opened in 2014 | |
| | | | INAD opened in 2014 | |

Table of Contents

**Jaguar Animal Non-Prescription Products**

| Products | Species | Use | Recent Developments | Anticipated Near-Term Milestones |
|---|---|---|---|---|
| Equilevia | Horses | Total gut health | | |
| | | | Proof-of-concept safety and effectiveness results in January 2016 for gastrointestinal ulcers | Finalize formulation and conduct commercial launch of personalized product in Q4 2017 |
| Neonorm Calf | Dairy & beef calves | Helps proactively retain fluids in calves aiding the animals in avoiding debilitating, dangerous levels of dehydration | Positive racing results | |
| | | | Field study supports beneficial effect on prewean weight gain | Launch second generation formulation for administration in liquid, prophylaxis in Q2 2018 |
| | | | Positive prophylactic results | |
| | | | | Commercial launch and business development activities in selected international geographies in the first half of 2018 |
| Species-specific formulations of Neonorm | Horse foals | Anti-diarrheal for newborn horses | Distribution deal China | |
| | | | Completed proof-of-concept study in November 2015 | Evaluation of Neonorm Horse product |
| | | | Soft-launched product in December 2015 | |
| | Piglets | Normalize fecal formation in piglets | Commercial launch with exclusive Henry Schein distribution deal at AAEP, 2016 | |

| | | | |
|---|---|---|---|
| | | Positive preliminary topline results of two studies by Integrated Animal Nutrition and Health Inc. to evaluate the safety and effectiveness of Neonorm in piglets | Expansion of distribution in China |
| Other farm/production animals | Supports gut health normalizing fecal formation | | |
| | | Selected clinical research | Initiate proof-of-concept studies and partnering discussions, multiple species; multiple geographies, subject to future portfolio planning and prioritization |

Table of Contents

**Business Strategy**

Our goal is to become a leading pharmaceuticals company with first-in-class, sustainably derived products that address significant unmet gastrointestinal medical needs globally. To accomplish this goal, we plan to:

***Expand Mytesi by leveraging our significant gastrointestinal knowledge, experience and intellectual property portfolio.***

Mytesi is a novel, first-in-class anti-secretory agent which has a basic normalizing effect locally on the gut, and this mechanism of action has the potential to benefit multiple disorders. Our Mytesi (crofelemer) product is approved by the U.S. FDA for the symptomatic relief of noninfectious diarrhea in adults with HIV/AIDS on antiretroviral therapy. We believe we control commercial rights for Mytesi for all indications, territories and patient populations globally, and we are pursuing a follow-on indication for Mytesi in CID, an important supportive care indication for patients undergoing primary or adjuvant chemotherapy for cancer treatment. Mytesi is also in development for rare disease indications for infants and children with congenital diarrheal disorders and short bowel syndrome; for IBS (Mytesi has demonstrated benefit to IBS-D patients in published Phase 2 studies); for supportive care for IBD; and as a second-generation anti-secretory agent for use in cholera patients. Mytesi has received orphan-drug designation for SBS.

Our management team collectively has more than 100 years of experience in the development of gastrointestinal prescription drug and non-prescription products. This experience covers all aspects of product development, including discovery, preclinical and clinical development, GMP manufacturing, and regulatory strategy. Key members of this team successfully developed Mytesi.

***Establish and expand commercial capabilities in Mytesi sales and marketing efforts.***

We plan to significantly expand Mytesi sales and marketing efforts in the third quarter of 2017. As announced on August 7, 2017, we appointed Pete Riojas, a 29-year pharmaceutical industry veteran, to lead Mytesi sales nationally. We also significantly expanded our internal national salesforce for Mytesi through the hire in key U.S. markets of six sales representatives experienced in the sale of drugs to HIV physicians and gastroenterologists. Our new sales representatives are based in and will cover New York, Miami, Atlanta, Los Angeles, Houston, San Francisco, Chicago and St. Louis and the surrounding regions. All of these regions are key markets for HIV-related drug sales. Two of our new territory managers have been calling on HIV physicians for 18 to 19 years, and others possess extensive experience in drug sales to both gastroenterologists and HIV healthcare providers.

***Leverage our relationships with key opinion leaders regarding development of human and animal follow-on indications***

To date, we have identified more than 30 key opinion leaders (KOLs) who are recognized specialists in HIV patient care, CID, IBD, IBS, cholera, SBS, CDD and equine gut health, and who are participating in our KOL advisory program in some manner.

***Strategically sequence the development of follow-on indications of Mytesi and seek geographically-focused licensing opportunities.***

Although it is possible that we may enter into corporate partnering relationships related to Mytesi, our intention would be to retain all commercialization and promotional rights in the U.S., so that we do not become primarily a royalty-collecting organization, and we are opposed to entering into any Mytesi partnering relationship that would require splitting indications. We are seeking to put limited geographically-focused partnerships in place in the near term, while also considering possibilities for a

Table of Contents

worldwide partnership with a leading global entity (excluding the US commercial rights) in the field of gastrointestinal care and cancer in the long term.

***Strategically plan our portfolio in the animal health space.***

Portfolio planning for the animal health space is of utmost importance to us, given the wide array of potential species-specific products and because we do not want animal-related research and development activities to divert significant financial resources while we are focusing on growing Mytesi sales and seeking to move our company towards profitability. Additional formulations and additional animal product expenditures will be considered from time to time as part of portfolio planning and prioritization in the context of the combined company. Canalevia is our lead veterinary prescription drug product candidate, intended for treatment of various forms of diarrhea in dogs. Our next expected veterinary product commercial launch will be for Equilevia, a personalized premium proprietary total gut health product for equine athletes, which will be non-prescription.

***Reduce risks relating to product development.***

Risk reduction is a key focus of our product development planning. Mytesi is approved for chronic indication, providing us the ability to leverage this corresponding safety data when seeking approval for planned follow-on indications. Crofelemer manufacturing is being conducted at a new, multimillion-dollar commercial manufacturing facility that has been FDA-inspected and approved. In an effort to reduce risk further, we have implemented the following approach: First, we meet with key opinion leaders, typically at medical conferences as we have already done in 2017 at Digestive Disease Week for IBS and IBD, the American Society of Clinical Oncology annual meeting, and the Multinational Association of Supportive Care and Congress. Next, we confirm unmet medical needs with these key opinion leaders, and discuss the practicality of patient enrollment and trial implementation. We then generate protocols to discuss with the FDA, seeking, when possible, special protocol assessments. Our goal, by the time we start devoting significant funds to a clinical trial, is to have derisked the program as much as we believe we possibly can. We believe this approach will lead to better long-term outcomes for our products in development.

**Risks Related to Our Business**

Our business, and our ability to execute our business strategy, is subject to a number of risks as more fully described in the section titled "Risk Factors." These risks include, among others, the following:

We have a limited operating history, have not yet generated any material revenues, expect to continue to incur significant research and development and other expenses, and may never become profitable. Our independent registered public accounting firm has expressed substantial doubt about our ability to continue as a going concern.

We have never generated any material revenue from operations and may need to raise additional capital to achieve our goals.

We are substantially dependent on the success of our current lead prescription drug product candidates, Mytesi and Canalevia, and our non-prescription products, Equilevia and Neonorm, and cannot be certain that necessary approvals will be received for planned Mytesi follow-on indications or Canalevia or that these product candidates will be successfully commercialized, either by us or any of our partners.

The results of earlier studies may not be predictive of the results of our pivotal trials or other future studies, and we may be unable to obtain any necessary regulatory approvals for our existing or future prescription drug product candidates under applicable regulatory requirements.

Table of Contents

Development of prescription drug products, and, to a lesser extent, non-prescription products, for the human health and animal health market is inherently expensive, time-consuming and uncertain, and any delay or discontinuance of our current or future pivotal trials, or dosage or formulation studies, would harm our business and prospects.

Even if we obtain any required regulatory approvals for our current or future prescription drug product candidates, they may never achieve market acceptance or commercial success.

We are dependent upon contract manufacturers for supplies of our current prescription drug product candidates and non-prescription products and intend to rely on contract manufacturers for commercial quantities of any of our commercialized products.

If we are not successful in identifying, developing and commercializing additional prescription drug product candidates and non-prescription products, our ability to expand our business and achieve our strategic objectives may be impaired.

**Corporate Information**

We were incorporated in the State of Delaware on June 6, 2013. Our principal executive offices are located at 201 Mission Street, Suite 2375, San Francisco, CA 94015 and our telephone number is (415) 371-8300. Our website address is www.jaguar.health. The information contained on, or that can be accessed through, our website is not part of this prospectus supplement. Our common stock is listed on the NASDAQ Capital Market and trades under the symbol "JAGX."

Jaguar Health, our logo, Mytesi, Canalevia, Equilevia and Neonorm and are our trademarks that are used in this prospectus supplement. This prospectus supplement also includes trademarks, tradenames and service marks that are the property of other organizations. Solely for convenience, trademarks and tradenames referred to in this prospectus supplement appear without the ©, ® or symbols, but those references are not intended to indicate that we will not assert, to the fullest extent under applicable law, our rights or that the applicable owner will not assert its rights, to these trademarks and tradenames.

Table of Contents

**THE OFFERING**

| | |
|---|---|
| Common stock offered by us | 21,250,000 shares |
| Public offering price | $0.20 per share |
| Common stock outstanding prior to this offering | 67,700,655 shares |
| Common stock to be outstanding after this offering | 88,950,655 shares (or 92,138,155 shares if the underwriters exercise in full their option to purchase additional shares) |
| Option to purchase additional shares | We have granted the underwriters an option to purchase up to an additional 3,187,500 shares of our common stock. This option is exercisable, in whole or in part, for a period of 45 days from the date of this prospectus supplement. |
| Use of proceeds | We intend to use the net proceeds from this offering for the commercialization of Mytesi and working capital and general corporate purposes. See "Use of Proceeds" on page S-54. |
| Risk factors | You should read the "Risk Factors" section of this prospectus supplement and in the documents incorporated by reference in this prospectus supplement for a discussion of factors to consider before deciding to invest in our common stock. |
| NASDAQ Capital Market symbol | "JAGX" |

We have two classes of common stock: (i) voting common stock, par value $0.0001 per share, and (ii) non-voting common stock, par value $0.0001 per share. The shares offered by us in this offering are voting common stock.

On a pro forma basis, the number of shares of our common stock to be outstanding after this offering is based on 65,887,640 shares of our common stock outstanding as of June 30, 2017, and excludes the following:

2,984,152 shares of voting common stock issuable upon exercise of outstanding options as of June 30, 2017, with a weighted-average exercise price of $2.47 per share, of which 1,840,890 shares are vested as of such date;

513,537 shares of voting common stock reserved for future issuance under the 2014 Stock Incentive Plan;

7,564,667 shares of voting common stock issuable upon exercise of warrants outstanding as of June 30, 2017, with a weighted-average exercise price of $1.13 per share;

5,914,638 shares of voting common stock issuable upon vesting of outstanding restricted stock unit awards, or RSUs, as of June 30, 2017; and

up to 15,549,070 shares of common stock issuable upon conversion of outstanding convertible promissory notes in the aggregate principal amount of $13,800,627 issued as of June 30, 2017.

Table of Contents

## RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the risks described below, as well as the other information contained in or incorporated by reference in this prospectus supplement, including our financial statements and the related notes and "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our Annual Report on Form 10-K for the fiscal year ended December 31, 2016, as updated in our Quarterly Reports on Form 10-Q, before deciding whether to invest in our common stock. The occurrence of any of the events or developments described below could harm our business, financial condition, results of operations and prospects. In such an event, the market price of our common stock could decline, and you may lose all or part of your investment. Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may harm our business, financial condition, results of operations and prospects.

### Risks Related to Our Business

***We have a limited operating history, expect to incur further losses as we grow and may be unable to achieve or sustain profitability. Our independent registered public accounting firm has expressed substantial doubt about our ability to continue as a going concern.***

Since formation in June 2013, our operations have been primarily limited to the research and development of our animal prescription drug product candidate, Canalevia, to treat various forms of diarrhea in dogs, our non-prescription product, Neonorm Calf, to help dairies and calf farms proactively retain fluid in calves, the ongoing commercialization of Neonorm Foal, our antidiarrheal for newborn horses, and Equilevia, our planned product for total gut health in high-performance equine athletes. Since the consummation of the Merger on July 31, 2017, our operations have also been heavily focused on research, development and the ongoing commercialization of our lead prescription drug product candidate, Mytesi, which is approved by the U.S. FDA for the symptomatic relief of noninfectious diarrhea in adults with HIV/AIDS on antiretroviral therapy. As a result, we have limited meaningful historical operations upon which to evaluate our business and prospects and have not yet demonstrated an ability to broadly commercialize any of our animal health products, obtain any required marketing approval for any of our animal prescription drug product candidates or successfully overcome the risks and uncertainties frequently encountered by companies in emerging fields such as the animal health industry or the gastrointestinal health industry in general. We also have not generated any material revenue to date, and expect to continue to incur significant research and development and other expenses. Our net loss and comprehensive loss for the year ended December 31, 2016 was $14.7 million. As of December 31, 2016, we had total stockholders' deficit of $2.5 million. We expect to continue to incur losses for the foreseeable future, which will increase significantly from historical levels as we expand our product development activities, seek necessary approvals for our human and veterinary drug product candidates, conduct species-specific formulation studies for our non-prescription products and begin commercialization activities. Even if we succeed in developing and broadly commercializing one or more of our products or product candidates, we expect to continue to incur losses for the foreseeable future, and we may never become profitable. If we fail to achieve or maintain profitability, then we may be unable to continue our operations at planned levels and be forced to reduce or cease operations.

As more fully discussed in Note 1 to our financial statements incorporated by reference in this prospectus supplement, we believe there is substantial doubt about our ability to continue as a going concern as we do not currently have sufficient cash resources to fund our operations through February 15, 2018, or one year from the filing date of our Form 10-K. Our financial statements do not include any adjustments that may result from the outcome of this uncertainty. If we are unable to continue as a viable entity, our stockholders may lose their entire investment.

Table of Contents

***We have never generated any material revenue from operations and may not generate any material revenue from our operations in the foreseeable future.***

We are a natural-products pharmaceuticals company focused on the development and commercialization of novel, sustainably derived gastrointestinal products for both human prescription use and animals on a global basis. Since inception in June 2013, we have not generated any material revenue from operations. There is no guarantee that our recent commercial launch of Mytesi for symptomatic relief of noninfectious diarrhea in adults with HIV/AIDS or our ongoing commercialization efforts for Neonorm Calf for preweaned dairy calves in the United States and Neonorm Foal for newborn horses in the United States will be successful or that we will be able to sell any products in the future. Further, in order to commercialize our prescription drug product candidates, we must receive regulatory approval from the FDA in the United States and other regulatory agencies in various jurisdictions. Other than Mytesi, we have not yet received any regulatory approvals for our prescription drug product candidates. In addition, certain of our non-prescription products, such as Neonorm Calf, may be subject to regulatory approval outside the United States prior to commercialization in other countries. Accordingly, until and unless we receive any necessary regulatory approvals, we cannot market or sell our products in many regions. Moreover, even if we receive the necessary approvals, we may not be successful in generating revenue from sales of our products as we do not have any meaningful experience marketing or distributing our products. Accordingly, we may never generate any material revenue from our operations.

***We expect to incur significant additional costs as we continue commercialization efforts for current prescription drug candidates, Neonorm, or other product candidates, and undertake the clinical trials necessary to obtain any necessary regulatory approvals, which will increase our losses.***

We commenced sales of Neonorm for preweaned dairy calves in the United States under the brand name Neonorm Calf at the end of 2014, and Napo commenced sales of Mytesi for adults with HIV/AIDS on antiretroviral therapy in February 2017. We will need to continue to invest in developing our internal and third-party sales and distribution network and outreach efforts to key opinion leaders in the gastrointestinal health industry, including physicians and veterinarians, as applicable. We will also need to conduct clinical trials for Canalevia in order to obtain necessary initial regulatory approvals and to subsequently broaden Mytesi to additional indications and Canalevia to additional indications and additional species. We will also need to conduct species-specific testing with Neonorm to expand to additional animal populations.

We are actively identifying additional products for development and commercialization, and will continue to expend substantial resources for the foreseeable future to develop Mytesi, Equilevia, Canalevia and Neonorm and develop products from Napo's library of over 2,300 medicinal plants. These expenditures will include costs associated with:

identifying additional potential prescription drug product candidates and non-prescription products;

formulation studies;

conducting pilot, pivotal and toxicology studies;

completing other research and development activities;

payments to technology licensors;

maintaining our intellectual property;

obtaining necessary regulatory approvals;

establishing commercial supply capabilities; and

Table of Contents

sales, marketing and distribution of our commercialized products.

We also may incur unanticipated costs in connection with developing and commercializing our products. Because the outcome of our development activities and commercialization efforts is inherently uncertain, the actual amounts necessary to successfully complete the development and commercialization of our current or future products and product candidates may be greater than we anticipate.

Because we anticipate incurring significant costs for the foreseeable future, if we are not successful in broadly commercializing any of our current or future products or product candidates or raising additional funding to pursue our research and development efforts, we may never realize the benefit of our development efforts and our business may be harmed.

***We will need to raise substantial additional capital in the future in the event that we conduct clinical trials for new indications and we may be unable to raise such funds when needed and on acceptable terms, which would force us to delay, limit, reduce or terminate one or more of our product development programs.***

We are forecasting continued losses and negative cash flows as we continue to fund our operating and marketing activities and research and development programs, and we will not have sufficient cash on hand to fund our operating plan through February 2018 and to complete the development of all the current products in our pipeline, or any additional products we may identify. We will need to seek additional funds sooner than planned through public or private equity or debt financings or other sources such as strategic collaborations. Other than the loan and security agreement with Hercules (which provided for an initial loan commitment of $6.0 million), the common stock purchase agreement (the "CSPA"), with Aspire Capital Fund, LLC ("Aspire Capital") (which committed Aspire Capital to purchase up to an aggregate of $15.0 million of our shares of common stock over the term of the CSPA), Napo's Amended and Restated Note Purchase Agreement (the "Kingdon NPA") with Kingdon Associates, M. Kingdon Offshore Master Fund L.P., Kingdon Family Partnership, L.P., and Kingdon Credit Master Fund L.P. (pursuant to which we issued $10.0 million aggregate principal amount of convertible notes in exchange for a cash payment of $8.0 million), and convertible note purchase agreements with three purchasers (pursuant to which we issued approximately $3.5 million aggregate principal amount of convertible notes in exchange for a cash payment of $2.75 million), we have no current agreements or arrangements with respect to any such financings or collaborations, and any such financings or collaborations may result in dilution to our stockholders, the imposition of debt covenants and repayment obligations or other restrictions that may harm our business or the value of our common stock. We may also seek from time to time to raise additional capital based upon favorable market conditions or strategic considerations such as potential acquisitions or potential license arrangements.

Our future capital requirements depend on many factors, including, but not limited to:

the scope, progress, results and costs of researching and developing our current and future prescription drug product candidates and non-prescription products;

the timing of, and the costs involved in, obtaining any regulatory approvals for our current and any future products;

the number and characteristics of the products we pursue;

the cost of manufacturing our current and future products and any products we successfully commercialize;

the cost of commercialization activities for Mytesi, Neonorm, Equilevia and Canalevia, if approved, including sales, marketing and distribution costs;

the expenses needed to attract and retain skilled personnel;

Table of Contents

- the costs associated with being a public company;
- our ability to establish and maintain strategic collaborations, distribution or other arrangements and the financial terms of such agreements; and
- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing possible patent claims, including litigation costs and the outcome of any such litigation.

Additional funds may not be available when we need them on terms that are acceptable to us, or at all. If adequate funds are not available to us on a timely basis, we may be required to delay, limit, reduce or terminate one or more of our product development programs or future commercialization efforts.

***We are substantially dependent on the success of our current lead prescription drug product candidates, Mytesi and Canalevia, and our non-prescription products, Equilevia and Neonorm, and cannot be certain that necessary approvals will be received for planned Mytesi follow-on indications or Canalevia or that these product candidates will be successfully commercialized, either by us or any of our partners.***

Other than Mytesi, we currently do not have regulatory approval for any of our prescription drug product candidates, including Canalevia. Our current efforts are primarily focused on the ongoing commercialization of Mytesi, Neonorm Calf and Neonorm Foal in the United States, and development efforts related to Mytesi, Equilevia, and Canalevia, and on the development of formulations of Neonorm for additional species. With regard to Mytesi, we are focused on the commercial launch of the product in the United States as well as on development efforts related to a follow-on indication for Mytesi in CID, an important supportive care indication for patients undergoing primary or adjuvant chemotherapy for cancer treatment. Mytesi is also in development for rare disease indications for infants and children with congenital diarrheal disorders and short bowel syndrome; for IBS (Mytesi has demonstrated benefit to IBS-D patients in published Phase 2 studies); for supportive care for IBD; and as a second-generation anti-secretory agent for use in cholera patients. Mytesi has received orphan-drug designation for SBS. Accordingly, our near term prospects, including our ability to generate material product revenue, obtain any new financing if needed to fund our business and operations or enter into potential strategic transactions, will depend heavily on the success of Mytesi, Equilevia and Neonorm, as well as on Canalevia, if Canalevia is approved.

Substantial time and capital resources have been previously devoted by third parties in the development of crofelemer, the active pharmaceutical ingredient, or API, in Mytesi and Canalevia, and the development of the botanical extract used in Equilevia and Neonorm. Both crofelemer and the botanical extract used in Equilevia and Neonorm were originally developed at Shaman Pharmaceuticals, Inc. ("Shaman"), by certain members of our management team, including Lisa A. Conte, our chief executive officer and president, and Steven R. King, Ph.D., our executive vice president of sustainable supply, ethnobotanical research and intellectual property and secretary. Shaman spent significant development resources before voluntarily filing for bankruptcy in 2001 pursuant to Chapter 11 of the U.S. Bankruptcy Code. The rights to crofelemer and the botanical extract used in Equilevia and Neonorm, as well as other intellectual property rights, were subsequently acquired by Napo from Shaman in 2001 pursuant to a court approved sale of assets. Ms. Conte founded Napo in 2001 and was the current interim chief executive officer of Napo and a member of Napo's board of directors prior to the Merger. While at Napo, certain members of our management team, including Ms. Conte and Dr. King, continued the development of crofelemer. In 2005, Napo entered into license agreements with Glenmark and Luye Pharma Group Limited for rights to various human indications of crofelemer in certain territories as defined in the respective license agreements with these licensees. Subsequently, after expending significant sums developing crofelemer, including trial design and on-going patient enrollment in the final pivotal Phase 3 trial for crofelemer for non-infectious diarrhea in adults with HIV/AIDS on antiretroviral therapy, in late 2008, Napo entered into a collaboration

Table of Contents

agreement with Salix Pharmaceuticals, Inc., or Salix, for development and commercialization rights to certain indications worldwide and certain rights in North America, Europe, and Japan, to crofelemer for human use. In January 2014, Jaguar entered into the Napo License Agreement pursuant to which Jaguar acquired an exclusive worldwide license to Napo's intellectual property rights and technology, including crofelemer and the botanical extract used in Equilevia and Neonorm, for all veterinary treatment uses and indications for all species of animals. In February 2014, most of the executive officers of Napo, and substantially all Napo's employees, became Jaguar's employees. Following the Merger in July 2017, Napo became Jaguar's wholly-owned subsidiary. If we are not successful in the development and commercialization of Mytesi, Neonorm, Equilevia and Canalevia, our business and our prospects will be harmed.

The successful development and commercialization of Mytesi, Equilevia and Neonorm, and, if approved, Canalevia will depend on a number of factors, including the following:

- the successful completion of the pivotal trials and toxicology studies for Canalevia, which may take significantly longer than we currently anticipate and will depend, in part, upon the satisfactory performance of third-party contractors;
- our ability to demonstrate to the satisfaction of the FDA and any other regulatory bodies, the safety and efficacy of Canalevia;
- our ability and that of our contract manufacturers to manufacture supplies of Mytesi, Neonorm, Equilevia and Canalevia and to develop, validate and maintain viable commercial manufacturing processes that are compliant with current good manufacturing practices, or cGMP, if required;
- the success of Neonorm field studies and acceptance of their results by dairy producers;
- our ability to successfully launch Mytesi and Neonorm, whether alone or in collaboration with others;
- our ability to successfully launch Canalevia, assuming approval is obtained, and Equilevia, whether alone or in collaboration with others;
- the availability, perceived advantages, relative cost, relative safety and relative efficacy of our prescription drug product candidates and non-prescription products compared to alternative and competing treatments;
- the acceptance of our prescription drug product candidates and non-prescription products as safe and effective by physicians, veterinarians, patients, animal owners and the human and animal health community, as applicable;
- our ability to achieve and maintain compliance with all regulatory requirements applicable to our business; and
- our ability to obtain and enforce our intellectual property rights and obtain marketing exclusivity for our prescription drug product candidates and non-prescription products, and avoid or prevail in any third-party patent interference, patent infringement claims or administrative patent proceedings initiated by third parties or the U.S. Patent and Trademark Office ("USPTO").

Many of these factors are beyond our control. Accordingly, we may not be successful in developing or commercializing Mytesi, Neonorm, Equilevia, Canalevia or any of our other potential products. If we are unsuccessful or are significantly delayed in developing and commercializing Mytesi, Neonorm, Equilevia, Canalevia or any of our other potential products, our business and prospects will be harmed and you may lose all or a portion of the value of your investment in our common stock.

Table of Contents

***If we are not successful in identifying, licensing, developing and commercializing additional product candidates and products, our ability to expand our business and achieve our strategic objectives could be impaired.***

Although a substantial amount of our efforts is focused on the commercial performance of Mytesi, Equilevia and Neonorm and the continued development and potential approval of Canalevia, a key element of our strategy is to identify, develop and commercialize a portfolio of products to serve the gastrointestinal health market. Most of our potential products are based on our knowledge of medicinal plants. Our current focus is primarily on product candidates whose active pharmaceutical ingredient or botanical extract has been successfully commercialized or demonstrated to be safe and effective in human or animal trials. In some instances, we may be unable to further develop these potential products because of perceived regulatory and commercial risks. Even if we successfully identify potential products, we may still fail to yield products for development and commercialization for many reasons, including the following:

- competitors may develop alternatives that render our potential products obsolete;
- an outside party may develop a cure for any disease state that is the target indication for any of our planned or approved drug products;
- potential products we seek to develop may be covered by third-party patents or other exclusive rights;
- a potential product may on further study be shown to have harmful side effects or other characteristics that indicate it is unlikely to be effective or otherwise does not meet applicable regulatory criteria;
- a potential product may not be capable of being produced in commercial quantities at an acceptable cost, or at all; and
- a potential product may not be accepted as safe and effective by physicians, veterinarians, patients, animal owners, key opinion leaders and other decision-makers in the gastrointestinal health market, as applicable.

While we are developing specific formulations, including flavors, methods of administration, new patents and other strategies with respect to our current potential products, we may be unable to prevent competitors from developing substantially similar products and bringing those products to market earlier than we can. If such competing products achieve regulatory approval and commercialization prior to our potential products, our competitive position may be impaired. If we fail to develop and successfully commercialize other potential products, our business and future prospects may be harmed and we will be more vulnerable to any problems that we encounter in developing and commercializing our current potential products.

***The Elanco Agreement is important to our business. If we or Elanco fail to adequately perform under the Elanco Agreement, or if we or Elanco terminate the Elanco Agreement, the development and commercialization of Canalevia and any other Licensed Products would be delayed or terminated and our business would be adversely affected.***

On January 27, 2017, we entered into a licensing, development, co-promotion and commercialization agreement (the "Elanco Agreement") with Elanco US Inc. ("Elanco") to license, develop and commercialize Canalevia and other drug product formulations of crofelemer for treatment of gastrointestinal diseases, conditions and symptoms in cats and other companion animals (collectively, "Licensed Products"). The Elanco Agreement is important to our business, and our ability to develop and commercialize Canalevia and any other Licensed Product is dependent upon this agreement.

Table of Contents

The Elanco Agreement may be terminated by Elanco on a voluntary basis upon completion of the dose ranging study. The Elanco Agreement may also be terminated:

- by either party, for the other party's material breach, where such breach is not cured within the timeframe specified by the agreement;
- by either party, upon the bankruptcy, insolvency or dissolution of the other party; or
- by us, for certain activities involving the challenge of certain patents licensed by us to Elanco.

Upon Elanco's voluntary termination or termination for Elanco's breach, among other things, all licenses and rights granted to Elanco will terminate and revert to us, and Elanco has agreed to assign to us all registrations and trademarks obtained in connection with the products covered by the agreement. Upon expiration of the term of the Elanco Agreement or termination for our breach, among other things, we have agreed to assign to Elanco all registrations and trademarks obtained in connection with the products covered by the agreement.

Termination of the Elanco Agreement could cause significant delays in our product development and commercialization efforts that could prevent us from commercializing our Licensed Products, including Canalevia, without first expanding our internal capabilities, securing additional financing or entering into another agreement with a third party. Any alternative collaboration or license could also be on less favorable terms to us.

Under the Elanco Agreement, among other things, we are responsible for the manufacture and supply of all of Elanco's reasonable requirements of the products covered by the agreement. If we are unable to meet our manufacture and supply obligations, Elanco may claim that we have materially breached the Elanco Agreement and terminate such agreement, which could adversely affect our business and our ability to successfully develop and commercialize any products covered by the agreement, including Canalevia.

Under the Elanco Agreement, Elanco has agreed to provide funding for certain clinical development activities. If the Elanco Agreement were terminated, we may need to seek additional financing to support the research and development of any terminated products or discontinue any terminated products, which could adversely affect our business. In addition, Elanco is solely responsible for commercializing products outside the United States. We cannot directly control Elanco's commercialization activities or the resources it allocates to our product candidates. Our interests and Elanco's interests may differ or conflict from time to time, or we may disagree with Elanco's level of effort or resource allocation. Elanco may internally prioritize our product candidates differently than we do or it may not allocate sufficient resources to effectively or optimally commercialize them. If these events were to occur, our business would be adversely affected.

***Mytesi faces significant competition from other pharmaceutical companies, both for its currently approved indication and for planned follow-on indications, and our operating results will suffer if we fail to compete effectively.***

The development and commercialization of products for human gastrointestinal health is highly competitive and our success depends on our ability to compete effectively with other products in the market. During the ongoing commercialization of Mytesi for its currently approved indication, and during the future commercialization of Mytesi for any planned follow-on indications, if such follow-on indications receive regulatory approval, we expect to compete with major pharmaceutical and biotechnology companies that operate in the gastrointestinal space, such as Sucampo AG, Takeda Pharmaceuticals, Allergan, Inc., Ironwood Pharmaceuticals, Inc., Synergy Pharmaceuticals Inc., Heron Therapeutics, Inc., Sebela Pharmaceuticals, Inc. and Salix Pharmaceuticals.

Table of Contents

Many of our competitors and potential competitors in the human gastrointestinal space have substantially more financial, technical and human resources than we do. Many also have more experience in the development, manufacture, regulation and worldwide commercialization of human gastrointestinal health products.

For these reasons, we cannot be certain that we and Mytesi can compete effectively.

***Our animal health products face significant competition from other pharmaceutical companies and our operating results will suffer if we fail to compete effectively.***

The development and commercialization of animal health products is highly competitive and our success depends on our ability to compete effectively with other products in the market. We expect to compete with the animal health divisions of major pharmaceutical and biotechnology companies such as Merck Animal Health, Merial Inc., Elanco Animal Health, Bayer Animal Health GmbH, Novartis Animal Health Inc. and Boehringer Ingelheim Animal Health, as well as specialty animal health medicines companies such as Zoetis Inc., Phibro Animal Health Corporation and, in Europe, Virbac S.A., Vétoquinol S.A., Ceva Animal Health S.A. and Dechra Pharmaceuticals PLC. We are also aware of several early-stage companies that are developing products for use in the animal health market, including Aratana Therapeutics, Inc., Kindred Biosciences, Inc., Parnell Pharmaceuticals Holdings Ltd, Nexvet Biopharma and ImmuCell Corporation. We also compete with academic institutions, governmental agencies and private organizations that are conducting research in the field of animal health products.

Although there are currently no FDA-approved anti-secretory products to treat chemotherapy-induced diarrhea (CID) in dogs, we anticipate that Canalevia, if approved, may face competition from various products, including products approved for use in humans that are used extra-label in animals. Extra-label use is the use of an approved drug outside of its cleared or approved indications in the animal context. All of our potential products could also face competition from new products in development. These and other potential competing products may benefit from greater brand recognition and brand loyalty than our products and product candidates may achieve.

Many of our competitors and potential competitors have substantially more financial, technical and human resources than we do. Many also have more experience in the development, manufacture, regulation and worldwide commercialization of animal health products, including animal prescription drugs and non-prescription products.

For these reasons, we cannot be certain that we and our products can compete effectively.

***We may be unable to obtain, or obtain on a timely basis, regulatory approval for our existing or future human or animal prescription drug product candidates under applicable regulatory requirements, which would harm our operating results.***

The research, testing, manufacturing, labeling, approval, sale, marketing and distribution of human and animal health products are subject to extensive regulation. We are typically not permitted to market our prescription drug product candidates in the United States until we receive approval of the product from the FDA through the filing of an NDA or NADA, as applicable. To gain approval to market a prescription drug, we must provide the FDA with safety and efficacy data from pivotal trials that adequately demonstrate that our prescription drug product candidates are safe and effective for the intended indications. Likewise, to gain approval to market an animal prescription drug for a particular species, we must provide the FDA with safety and efficacy data from pivotal trials that adequately demonstrate that our prescription drug product candidates are safe and effective in the target species (*e.g.* dogs, cats or horses) for the intended indications. In addition, we must provide manufacturing data evidencing that we can produce our product candidates in accordance with cGMP. For the FDA, we must also provide data from toxicology studies, also called target animal safety

Table of Contents

studies, and in some cases environmental impact data. In addition to our internal activities, we will partially rely on contract research organizations ("CROs"), and other third parties to conduct our toxicology studies and for certain other product development activities. The results of toxicology studies, other initial development activities, and/or any previous studies in humans or animals conducted by us or third parties may not be predictive of future results of pivotal trials or other future studies, and failure can occur at any time during the conduct of pivotal trials and other development activities by us or our CROs. Our pivotal trials may fail to show the desired safety or efficacy of our prescription drug product candidates despite promising initial data or the results in previous human or animal studies conducted by others. Success of a prescription drug product candidate in prior animal studies, or in the treatment of humans, does not ensure success in subsequent studies. Clinical trials in humans and pivotal trials in animals sometimes fail to show a benefit even for drugs that are effective because of statistical limitations in the design of the trials or other statistical anomalies. Therefore, even if our studies and other development activities are completed as planned, the results may not be sufficient to obtain a required regulatory approval for a product candidate.

Regulatory authorities can delay, limit or deny approval of any of our prescription drug product candidates for many reasons, including:

- if they disagree with our interpretation of data from our pivotal studies or other development efforts;
- if we are unable to demonstrate to their satisfaction that our product candidate is safe and effective for the target indication and, if applicable, in the target species;
- if they require additional studies or change their approval policies or regulations;
- if they do not approve of the formulation, labeling or the specifications of our current and future product candidates; and
- if they fail to approve the manufacturing processes of our third-party contract manufacturers.

Further, even if we receive a required approval, such approval may be for a more limited indication than we originally requested, and the regulatory authority may not approve the labeling that we believe is necessary or desirable for successful commercialization.

Any delay or failure in obtaining any necessary regulatory approval for the intended indications of our human or animal product candidates would delay or prevent commercialization of such product candidates and would harm our business and our operating results.

***The results of our earlier studies of Mytesi and Neonorm may not be predictive of the results in any future clinical trials and species-specific formulation studies, respectively, and we may not be successful in our efforts to develop or commercialize line extensions of Mytesi and Neonorm.***

Our human and animal product pipeline includes a number of potential indications of Mytesi, our lead prescription product, and a number of species-specific formulations of Neonorm, our commercially available non-prescription product. The results of our studies and other development activities and of any previous studies in humans or animals conducted by us or third parties may not be predictive of future results of these clinical studies and formulation studies, respectively. Failure can occur at any time during the conduct of these trials and other development activities. Even if our formulation/clinical studies and other development activities are completed as planned, the results may not be sufficient to pursue a particular line extension for Mytesi or Neonorm, respectively. Further, even if we obtain promising results from our clinical trials or species-specific formulation studies, as applicable, we may not successfully commercialize any line extension. Because line extensions are developed for a particular market, we may not be able to leverage our experience from the commercial launch of Mytesi, Neonorm Calf and Neonorm Foal in new markets. If we are not successful in developing and successfully commercializing these line extension products, we may not be able to grow our revenue and our business may be harmed.

Table of Contents

***Development of prescription drug products is inherently expensive, time-consuming and uncertain, and any delay or discontinuance of our current or future pivotal trials would harm our business and prospects.***

Development of prescription drug products for human and animal gastrointestinal health remains an inherently lengthy, expensive and uncertain process, and our development activities may not be successful. We do not know whether our current or planned pivotal trials for any of our product candidates will begin or conclude on time, and they may be delayed or discontinued for a variety of reasons, including if we are unable to:

address any safety concerns that arise during the course of the studies;

complete the studies due to deviations from the study protocols or the occurrence of adverse events;

add new study sites;

address any conflicts with new or existing laws or regulations; or

reach agreement on acceptable terms with study sites, which can be subject to extensive negotiation and may vary significantly among different sites.

Further, we may not be successful in developing new indications for Mytesi and/or species-specific formulations for Neonorm, and Neonorm may be subject to the same regulatory regime as prescription drug products in jurisdictions outside the United States. Any delays in completing our development efforts will increase our costs, delay our development efforts and approval process and jeopardize our ability to commence product sales and generate revenue. Any of these occurrences may harm our business, financial condition and prospects. In addition, factors that may cause a delay in the commencement or completion of our development efforts may also ultimately lead to the denial of regulatory approval of our product candidates which, as described above, would harm our business and prospects.

***We will partially rely on third parties to conduct our development activities. If these third parties do not successfully carry out their contractual duties, we may be unable to obtain regulatory approvals or commercialize our current or future human or animal product candidates on a timely basis, or at all.***

We will partially rely upon CROs to conduct our toxicology studies and for other development activities. We intend to rely on CROs to conduct one or more of our planned pivotal trials. These CROs are not our employees, and except for contractual duties and obligations, we have limited ability to control the amount or timing of resources that they devote to our programs or manage the risks associated with their activities on our behalf. We are responsible for ensuring that each of our studies is conducted in accordance with the development plans and trial protocols presented to regulatory authorities. Any deviations by our CROs may adversely affect our ability to obtain regulatory approvals, subject us to penalties or harm our credibility with regulators. The FDA and foreign regulatory authorities also require us and our CROs to comply with regulations and standards, commonly referred to as good clinical practices ("GCPs"), or good laboratory practices ("GLPs"), for conducting, monitoring, recording and reporting the results of our studies to ensure that the data and results are scientifically valid and accurate.

Agreements with CROs generally allow the CROs to terminate in certain circumstances with little or no advance notice. These agreements generally will require our CROs to reasonably cooperate with us at our expense for an orderly winding down of the CROs' services under the agreements. If the CROs conducting our studies do not comply with their contractual duties or obligations, or if they experience work stoppages, do not meet expected deadlines, or if the quality or accuracy of the data they obtain is compromised, we may need to secure new arrangements with alternative CROs, which could be difficult and costly. In such event, our studies also may need to be extended, delayed or

Table of Contents

terminated as a result, or may need to be repeated. If any of the foregoing were to occur, regulatory approval, if required, and commercialization of our product candidates may be delayed and we may be required to expend substantial additional resources.

***Even if we obtain regulatory approval for planned follow-on indications of Mytesi, or for Canalevia or our other product candidates, they may never achieve market acceptance. Further, even if we are successful in the ongoing commercialization of Mytesi and Neonorm, we may not achieve commercial success.***

If we obtain necessary regulatory approvals for planned follow-on indications of Mytesi or for Canalevia or our other product candidates, such products may still not achieve market acceptance and may not be commercially successful. Market acceptance of Mytesi, Canalevia, Neonorm and any of our other products depends on a number of factors, including:

- the safety of our products as demonstrated in our target animal studies;
- the indications for which our products are approved or marketed;
- the potential and perceived advantages over alternative treatments or products, including generic medicines and competing products currently prescribed by physicians or veterinarians, as applicable, and, in the case of animal products, products approved for use in humans that are used extra-label in animals;
- the acceptance by physicians, veterinarians, companion animal owners and production animal owners, including in the dairy industry, as applicable, of our products as safe and effective;
- the cost in relation to alternative treatments and willingness on the part of physicians, veterinarians, patients and animal owners, as applicable, to pay for our products;
- the prevalence and severity of any adverse side effects of our products;
- the relative convenience and ease of administration of our products; and
- the effectiveness of our sales, marketing and distribution efforts.

Any failure by Mytesi, Canalevia, Equilevia, Neonorm or any of our other products to achieve market acceptance or commercial success would harm our financial condition and results of operations.

***The dairy industry is subject to conditions beyond our control and the occurrence of any such conditions may harm our business and impact the demand for our products.***

The demand for production animal health products, such as Neonorm Calf, is heavily dependent on factors that affect the dairy market that are beyond our control, including the following, any of which may harm our business:

- cost containment measures within the dairy industry, in response to international, national and local general economic conditions, which may affect the market adoption of our products;
- state and federal government policies, including government-funded programs or subsidies whose discontinuance or modification could erode the demand for our products;

a decline in demand for dairy products due to changes in consumer diets away from dairy products, which could adversely affect the demand for production animal health products;

adverse weather conditions and natural disasters, such as floods, droughts, and pestilence, which can lower dairy yields; and

disease or other conditions beyond our control.

Table of Contents

***Human and animal gastrointestinal health products are subject to unanticipated post-approval safety or efficacy concerns, which may harm our business and reputation.***

The success of our commercialization efforts will depend upon the perceived safety and effectiveness of human and animal gastrointestinal health products, in general, and of our products, in particular. Unanticipated safety or efficacy concerns can subsequently arise with respect to approved prescription drug products, such as Mytesi, or non-prescription products, such as Neonorm, which may result in product recalls or withdrawals or suspension of sales, as well as product liability and other claims. Any safety or efficacy concerns, or recalls, withdrawals or suspensions of sales of our products could harm our reputation and business, regardless of whether such concerns or actions are justified.

***Future federal and state legislation may result in increased exposure to product liability claims, which could result in substantial losses.***

Under current federal and state laws, companion and production animals are generally considered to be the personal property of their owners and, as such, the owners' recovery for product liability claims involving their companion and production animals may be limited to the replacement value of the animal. Companion animal owners and their advocates, however, have filed lawsuits from time to time seeking non-economic damages such as pain and suffering and emotional distress for harm to their companion animals based on theories applicable to personal injuries to humans. If new legislation is passed to allow recovery for such non-economic damages, or if precedents are set allowing for such recovery, we could be exposed to increased product liability claims that could result in substantial losses to us if successful. In addition, some horses can be worth millions of dollars or more, and product liability for horses may be very high. While we currently have product liability insurance, such insurance may not be sufficient to cover any future product liability claims against us.

***If we fail to retain current members of our senior management, or to identify, attract, integrate and retain additional key personnel, our business will be harmed.***

Our success depends on our continued ability to attract, retain and motivate highly qualified management and scientific personnel. We are highly dependent upon our senior management, particularly Lisa A. Conte, our president and Chief Executive Officer. The loss of services of any of our key personnel would cause a disruption in our ability to develop our current or future product pipeline and commercialize our products and product candidates. Although we have offer letters with these key members of senior management, such agreements do not prohibit them from resigning at any time. For example, the resignation of our former Chief Financial Officer, Charles O. Thompson, in September 2014, and the mutually agreed departure of our former Chief Veterinary Officer, Serge Martinod, D.V.M., Ph.D. in February 2015, caused us to incur additional expenses and expend resources to ensure a smooth transition with their respective successors, which diverted management attention away from executing our operational plan during this period. We currently do not maintain "key man" life insurance on any of our senior management team. The loss of Ms. Conte or other members of our current senior management could adversely affect the timing or outcomes of our current and planned studies, as well as the prospects for commercializing our products.

In addition, competition for qualified personnel in the human and animal gastrointestinal health fields is intense, because there are a limited number of individuals who are trained or experienced in the field. Further, our headquarters are located in San Francisco, California, and the dairy and agriculture industries are not prevalent in urban areas such as San Francisco. We will need to hire additional personnel as we expand our product development and commercialization activities. Even if we are successful in hiring qualified individuals, as we are a growing organization, we do not have a track record for integrating and retaining individuals. If we are not successful in identifying, attracting, integrating or retaining qualified personnel on acceptable terms, or at all, our business will be harmed.

Table of Contents

***We are dependent on two suppliers for the raw material used to produce the active pharmaceutical ingredient in Mytesi and Canalevia and the botanical extract in Neonorm and Equilevia. The termination of either of these contracts would result in a disruption to product development and our business will be harmed.***

The raw material used to manufacture Mytesi, Canalevia, Neonorm and Equilevia is crude plant latex ("CPL"), derived from the *Croton lechleri* tree, which is found in countries in South America, principally Peru. The ability of our contract suppliers to harvest CPL is governed by the terms of their respective agreements with local government authorities. Although CPL is available from multiple suppliers, we only have contracts with two suppliers to obtain CPL and arrange the shipment to our contract manufacturer. Accordingly, if our contract suppliers do not or are unable to comply with the terms of our respective agreements, and we are not able to negotiate new agreements with alternate suppliers on terms that we deem commercially reasonable, it may harm our business and prospects. The countries from which we obtain CPL could change their laws and regulations regarding the export of the natural products or impose or increase taxes or duties payable by exporters of such products. Restrictions could be imposed on the harvesting of the natural products or additional requirements could be implemented for the replanting and regeneration of the raw material. Such events could have a significant impact on our cost and ability to produce Mytesi, Canalevia, Neonorm, Equilevia and anticipated line extensions.

***We are dependent upon third-party contract manufacturers, both for the supply of the active pharmaceutical ingredient in Mytesi and Canalevia and the botanical extract in Neonorm and Equilevia, as well as for the supply of finished products for commercialization.***

We have contracted with third parties for the formulation of API and botanical extract into finished products for our studies. We have also entered into memorandums of understanding with Indena S.p.A. for the manufacture of CPL received from our suppliers into the API in Canalevia to support our regulatory filings, as well as the botanical extract in Neonorm and agreed to negotiate a commercial supply agreement. Indena S.p.A. has never manufactured either such ingredient to commercial scale. As a second supplier situation, we have entered into a four-year manufacturing and supply agreement with Glenmark for the supply of the API in Canalevia. Glenmark is the current manufacturer of crofelemer, the active API in Canalevia, for Mytesi, and the manufacturer on file for the NADA to which we have a right of reference. As announced in October of 2015, we have entered an agreement with Patheon, a provider of drug development and delivery solutions, under which Patheon provides enteric-coated tablets to us for use in animals. We also may contract with additional third parties for the formulation and supply of finished products, which we will use in our planned studies and commercialization efforts.

We will be dependent upon our contract manufacturers for the supply of the API in Mytesi and Canalevia. We currently have sufficient quantities of the botanical extract used in Neonorm and Equilevia to support initial commercialization of Neonorm and Equilevia. However, we will require additional quantities of the botanical extract if our ongoing commercial launch of Neonorm or our commercial launch of and Equilevia is successful. If we are not successful in reaching agreements with third parties on terms that we consider commercially reasonable for manufacturing and formulation, or if our contract manufacturer and formulator are not able to produce sufficient quantities or quality of API, botanical extract or finished product under their agreements, it could delay our plans and harm our business prospects.

The facilities used by our third-party contractors are subject to inspections, including by the FDA, and other regulators, as applicable. We also depend on our third-party contractors to comply with cGMP. If our third-party contractors do not maintain compliance with these strict regulatory requirements, we and they will not be able to secure or maintain regulatory approval for their facilities, which would have an adverse effect on our operations. In addition, in some cases, we also are dependent on our third-party contractors to produce supplies in conformity to our specifications and

Table of Contents

maintain quality control and quality assurance practices and not to employ disqualified personnel. If the FDA or a comparable foreign regulatory authority does not approve the facilities of our third-party contractors if so required, or if it withdraws any such approval in the future, we may need to find alternative manufacturing or formulation facilities, which could result in delays in our ability to develop or commercialize our human and animal products, if at all. We and our third-party contractors also may be subject to penalties and sanctions from the FDA and other regulatory authorities for any violations of applicable regulatory requirements. The USDA and the European Medicines Agency (the "EMA"), employ different regulatory standards than the FDA, so we may require multiple manufacturing processes and facilities for the same human or animal product candidate or any approved product. We are also exposed to risk if our third-party contractors do not comply with the negotiated terms of our agreements, or if they suffer damage or destruction to their facilities or equipment.

***If we are unable to establish sales capabilities on our own or through third parties, we may not be able to market and sell our current or future human or animal products and product candidates, if approved, and generate product or other revenue.***

We currently have limited sales, marketing or distribution capabilities, and prior to Napo's launch of Mytesi for the symptomatic relief of noninfectious diarrhea in adults with HIV/AIDS on antiretroviral therapy, and our launch of Neonorm for preweaned dairy calves, we had no experience in the sale, marketing and distribution of human or animal health products. There are significant risks involved in building and managing a sales organization, including our potential inability to attract, hire, retain and motivate qualified individuals, generate sufficient sales leads, provide adequate training to sales and marketing personnel and effectively oversee a geographically dispersed sales and marketing team. Any failure or delay in the development of our internal sales, marketing and distribution capabilities and entry into adequate arrangements with distributors or other partners would adversely impact the commercialization of Mytesi, Neonorm, Equilevia and, if approved, Canalevia. If we are not successful in commercializing Mytesi, Neonorm, Equilevia, Canalevia or any of our other line extension products, either on our own or through one or more distributors, or in generating upfront licensing or other fees, we may never generate significant revenue and may continue to incur significant losses, which would harm our financial condition and results of operations.

***Changes in distribution channels for animal health prescription drugs may make it more difficult or expensive to distribute our animal health prescription drug products.***

In the United States, animal owners typically purchase their animal health prescription drugs from their local veterinarians who also prescribe such drugs. There is a trend, however, toward increased purchases of animal health prescription drugs from Internet-based retailers, "big-box" retail stores and other over-the-counter distribution channels, which follows an emerging shift in recent years away from the traditional veterinarian distribution channel. It is also possible that animal owners may come to rely increasingly on Internet-based animal health information rather than on their veterinarians. We currently expect to market our animal health prescription drugs directly to veterinarians, so any reduced reliance on veterinarians by animal owners could harm our business and prospects by making it more difficult or expensive for us to distribute our animal health prescription drug products.

Legislation has been or may be proposed in various states that would require veterinarians to provide animal owners with written prescriptions and disclosures that the animal owner has the right to fill the prescriptions through other means. If enacted, such legislation could lead to a reduction in the number of animal owners who purchase their animal health pharmaceuticals directly from veterinarians, which also could harm our business.

Table of Contents

***Consolidation of our customers could negatively affect the pricing of our animal health products.***

Veterinarians will be our primary customers for our prescription animal health drug products, as well as, to some extent, our non-prescription animal health products, such as Neonorm and Equilevia. In recent years, there has been a trend towards the consolidation of veterinary clinics and animal hospitals. If this trend continues, these large clinics and hospitals could attempt to leverage their buying power to obtain favorable pricing from us and other animal health product companies. Any downward pressure on the prices of any of our animal health products could harm our operating results and financial condition.

***We will need to increase the size of our organization and may not successfully manage such growth.***

As of August 31, 2017, we had 25 full-time equivalent (FTE) employees. Our ability to manage our growth effectively will require us to hire, train, retain, manage and motivate additional employees and to implement and improve our operational, financial and management systems. These demands also may require the hiring of additional senior management personnel or the development of additional expertise by our senior management personnel. If we fail to expand and enhance our operational, financial and management systems in conjunction with our potential future growth, it could harm our business and operating results.

***Research and development with respect to our animal health products and product candidates relies on evaluations in animals, which is controversial and may become subject to bans or additional regulations.***

The evaluation of our animal health products and product candidates in target animals is required to develop, formulate and commercialize our animal health products and product candidates. Although our animal testing will be subject to GLPs and GCPs, as applicable, animal testing in the human pharmaceutical industry and in other industries continues to be the subject of controversy and adverse publicity. Some organizations and individuals have sought to ban animal testing or encourage the adoption of additional regulations applicable to animal testing. To the extent that such bans or regulations are imposed, our research and development activities with respect to animal health products, and by extension our operating results and financial condition, could be harmed. In addition, negative publicity about animal practices by us or in our industry could harm our reputation among potential customers.

***If approved, our animal health prescription drug product candidates may be marketed in the United States only in the target animals and for the indications for which they are approved, and if we want to expand the approved animals or indications, it will need to obtain additional approvals, which may not be granted.***

If our animal health prescription drug product candidates are approved by regulatory authorities, we may market or advertise them only in the specific species and for treatment of the specific indications for which they were approved, which could limit use of the products by veterinarians and animal owners. We intend to develop, promote and commercialize approved products for other animals and new treatment indications in the future, but we cannot be certain whether or at what additional time and expense we will be able to do so. If we do not obtain marketing approvals for other species or for new indications, our ability to expand our animal health business may be harmed.

Under the Animal Medicinal Drug Use Clarification Act of 1994, veterinarians are permitted to prescribe extra-label uses of certain approved animal drugs and approved human drugs for animals under certain conditions. While veterinarians may in the future prescribe and use human-approved products or use our products for extra-label uses, we may not promote our animal health products for extra-label uses. We note that extra-label uses are uses for which the product has not received approval. If the FDA determines that any of our marketing activities constitute promotion of an extra-label use, we could be subject to regulatory enforcement, including seizure of any misbranded or mislabeled

Table of Contents

drugs, and civil or criminal penalties, any of which could have an adverse impact on our reputation and expose us to potential liability. We will continue to spend resources ensuring that our promotional claims for our animal health products and product candidates remain compliant with applicable FDA laws and regulations, including materials we post or link to on our website. For example, in 2012, our Chief Executive Officer received an "untitled letter" from the FDA while at Napo regarding preapproval promotion statements constituting misbranding of crofelemer, which was then an investigational drug. These statements were included in archived press releases included on Napo's website. Napo was required to expend time and resources to revise its website to remove the links in order to address the concerns raised in the FDA's letter.

***If our human or animal prescription drug product candidates are approved by regulatory authorities, the misuse or extra-label use of such products may harm our reputation or result in financial or other damages.***

If our human or animal prescription drug product candidates are approved by regulatory authorities, there may be increased risk of product liability if physicians, veterinarians, patients, animal owners or others, as applicable, attempt to use such products extra-label, including the use of our products for indications or in species for which they have not been approved. Furthermore, the use of an approved human or animal drug for indications other than those indications for which such products have been approved may not be effective, which could harm our reputation and lead to an increased risk of litigation. If we are deemed by a governmental or regulatory agency to have engaged in the promotion of any approved human or animal product for extra-label use, such agency could request that we modify our training or promotional materials and practices and we could be subject to significant fines and penalties, and the imposition of these sanctions could also affect our reputation and position within the gastrointestinal health industry. Any of these events could harm our reputation and our operating results.

***We may not maintain the benefits associated with MUMS designation, including market exclusivity.***

Although we have received MUMS designation for Canalevia for the treatment of CID in dogs, we may not maintain the benefits associated with MUMS designation. MUMS designation is a status similar to "orphan drug" status for human drugs. When we were granted MUMS designation for Canalevia for the indication of CID in dogs, we became eligible for incentives to support the approval or conditional approval of the designated use. This designation does not allow us to commercialize a product until such time as we obtain approval or conditional approval of the product.

Because Canalevia has received MUMS designation for the identified particular intended use, we are eligible to obtain seven years of exclusive marketing rights upon approval (or conditional approval) of Canalevia for that intended use and become eligible for grants to defray the cost of our clinical work. Each designation that is granted must be unique, *i.e.*, only one designation can be granted for a particular API in a particular dosage form for a particular intended use. The intended use includes both the target species and the disease or condition to be treated.

At some point, we could lose MUMS designation. The basis for a lost designation can include but is not limited to, our failure to engage with due diligence in moving forward with a non-conditional approval, or a competing product has received conditional approval or approval prior to our product candidate for the same indication or species. In addition, MUMS designation may be withdrawn for a variety of reasons such as where the FDA determines that the request for designation was materially defective, or if the manufacturer is unable to assure sufficient quantity of the prescription drug product to meet the needs of animals with the rare disease or condition. If this designation is lost, it could have a negative impact on the product and us, which includes but is not limited to, market exclusivity related to MUMS designation, or eligibility for grants as a result of MUMS designation.

Table of Contents

***The market for our human or animal products, and the gastrointestinal health market as a whole, is uncertain and may be smaller than we anticipate, which could lead to lower revenue and harm our operating results.***

It is very difficult to estimate the commercial potential of any of our human or animal products because the gastrointestinal health market continues to evolve and it is difficult to predict the market potential for our products. The market will depend on important factors such as safety and efficacy compared to other available treatments, changing standards of care, preferences of physicians and veterinarians, as applicable, the willingness of patients and companion and production animal owners, as applicable, to pay for such products, and the availability of competitive alternatives that may emerge either during the product development process or after commercial introduction. If the market potential for our human or animal products is less than we anticipate due to one or more of these factors, it could negatively impact our business, financial condition and results of operations. Further, the willingness of patients and companion and production animal owners to pay for our products may be less than we anticipate, and may be negatively affected by overall economic conditions. Moreover, with respect to our animal health products, the current penetration of animal insurance in the United States is low, animal owners are likely to have to pay out-of-pocket, and such owners may not be willing or able to pay for our products.

***Insurance coverage for Mytesi for its current approved indication could decrease or end, or Mytesi might not receive insurance coverage for any approved follow-on indications, which could lead to lower revenue and harm our operating results.***

For its current approved indication, Mytesi is currently covered by all of the top 10 commercial insurance plans, representing more than 245 million U.S. lives. In 50% of these plans it is currently on Tier 3 with no restrictions, and in 50% it is currently on Tier 3 with a prior authorization required. In the top 10 Managed Medicare plans, which represent 24 million covered lives, Mytesi is currently covered on 10% of plans. Mytesi is currently covered on Medicaid in all 50 states. However, the nature or extent of coverage for Mytesi by any of these plans or programs could change or be terminated, or Mytesi might not receive insurance coverage for any approved follow-on indications. Either outcome could lead to significantly lower revenue and significantly harm our operating results.

***If we fail to maintain effective internal control over financial reporting in the future, the accuracy and timing of our financial reporting may be adversely affected.***

Our management is responsible for establishing and maintaining adequate internal control over our financial reporting, as defined in Rule 13a-15(f) under the Securities Exchange Act of 1934, as amended (the "Exchange Act").

Preparing our consolidated financial statements involves a number of complex manual and automated processes, which are dependent upon individual data input or review and require significant management judgment. One or more of these elements may result in errors that may not be detected and could result in a material misstatement of our consolidated financial statements. If we fail to maintain the adequacy of our internal controls over financial reporting, our business and operating results may be harmed and we may fail to meet our financial reporting obligations. If material weaknesses in our internal control are discovered or occur, our consolidated financial statements may contain material misstatements and we could be required to restate our financial results.

Our internal control over financial reporting may not prevent or detect misstatements because of its inherent limitations, including the possibility of human error, the circumvention or overriding of controls, or fraud. Even effective internal controls can provide only reasonable assurance with respect to the preparation and fair presentation of financial statements. Any failure of our internal controls could adversely affect the results of the periodic management evaluations regarding the effectiveness of

Table of Contents

our internal control over financial reporting. If we cannot provide reliable financial reports or prevent fraud, our business and results of operations could be harmed, investors could lose confidence in our reported financial information, and the trading price of our stock may decline.

***We may engage in future acquisitions that increase our capital requirements, dilute our stockholders, cause us to incur debt or assume contingent liabilities and subject us to other risks.***

We may evaluate various strategic transactions, including licensing or acquiring complementary products, technologies or businesses. Any potential acquisitions may entail numerous risks, including increased operating expenses and cash requirements, assimilation of operations and products, retention of key employees, diversion of our management's attention and uncertainties in our ability to maintain key business relationships of the acquired entities. In addition, if we undertake acquisitions, we may issue dilutive securities, assume or incur debt obligations, incur large one-time expenses and acquire intangible assets that could result in significant future amortization expense. Moreover, we may not be able to locate suitable acquisition opportunities and this inability could impair our ability to grow or obtain access to technology or products that may be important to the development of our business.

***Certain of the countries in which we plan to commercialize our products in the future are developing countries, some of which have potentially unstable political and economic climates.***

We may commercialize our products in jurisdictions that are developing and emerging countries. This may expose us to the impact of political or economic upheaval, and we could be subject to unforeseen administrative or fiscal burdens. At present, we are not insured against the political and economic risks of operating in these countries. Any significant changes to the political or economic climate in any of the developing countries in which we operate or plan to sell products either now or in the future may have a substantial adverse effect on our business, financial condition, trading performance and prospects.

***Fluctuations in the exchange rate of foreign currencies could result in currency transactions losses.***

As we expand our operations, we expect to be exposed to risks associated with foreign currency exchange rates. We anticipate that we will commercialize Neonorm for preweaned dairy calves and its line extensions, as well as possibly Canalevia and its line extensions in jurisdictions outside the United States. As a result, we will also be further affected by fluctuations in exchange rates in the future to the extent that sales are denominated in currencies other than U.S. dollars. We do not currently employ any hedging or other strategies to minimize this risk, although we may seek to do so in the future.

***The unaudited pro forma combined condensed financial statements incorporated by reference in this document are preliminary and the actual financial condition and results of operations after the Merger may differ materially.***

The unaudited pro forma combined condensed financial statements incorporated by reference in this prospectus supplement are presented for illustrative purposes only and are not necessarily indicative of what our actual financial condition or results of operations would have been had the Merger been completed on the dates indicated. The unaudited pro forma combined condensed financial statements reflect adjustments to illustrate the effect of the Merger had it been completed on the dates indicated, which are based upon preliminary estimates, to record the Napo identifiable assets acquired and liabilities assumed at fair value and the resulting goodwill recognized. The purchase price allocation for the Merger reflected in the pro forma combined financial statements is preliminary, and final allocation of the purchase price will be based upon the actual purchase price and the fair value of the assets and liabilities of Napo as of the date of the completion of the Merger. Accordingly, the final acquisition accounting adjustments may differ materially from the pro forma adjustments reflected in financial statements incorporated by reference in this document.

Table of Contents

***There are other gastrointestinal-focused human pharmaceutical companies, and we face competition in the marketplaces in which we operate or plan to operate.***

Our commercial success in the human drug arena remains dependent on maintaining or establishing a competitive position in the market for the current, approved specialty indication of Mytesi as well as for planned Mytesi follow-on indications. In the IBS-D market in particular, several competitors have commercially available products approved for our planned IBS-D indication. The availability of our competitors' products could limit the demand, and the price we are able to charge, for any drug candidate we develop. The inability to compete with existing or subsequently introduced drug candidates would have a material adverse impact on our business, financial condition and prospects.

***Our obligations to Hercules, and subject to certain events, to CVP, are secured by a security interest in substantially all of our veterinary related assets, so if we default on those obligations, Hercules or CVP could foreclose on our assets.***

Our obligations under the loan and security agreement with Hercules Capital, Inc. (f/k/a Hercules Technology Growth Capital, Inc.) ("Hercules") are secured by a security interest in substantially all of our veterinary related assets, including intellectual property. As a result, if we default on our obligations under the loan and security agreement (the "Hercules Debt"), Hercules could foreclose on its security interests and liquidate some or all of these assets, which would harm our veterinary related business, financial condition and results of operations and could require us to reduce or cease operations. In addition, Chicago Venture Partners, L.P. ("CVP") may acquire a security interest in substantially all of our veterinary related assets upon the earlier of CVP purchasing Hercules Debt or the repayment in full of the Hercules Debt, as provided in the Security Agreement, dated June 29, 2017, between us and CVP and the Subordination Agreement and Right to Purchase Debt, dated June 29, 2017, by and among us, CVP and Hercules.

***Napo's obligations to the holders of the Kingdon Notes are secured by a security interest in substantially all of Napo's assets, so if we default on those obligations, the convertible note holders could foreclose on Napo's assets.***

Napo's obligations under the convertible promissory notes (the "Kingdon Notes") issued pursuant to the Amended and Restated Note Purchase Agreement, dated March 31, 2017, by and among Kingdon Associates, M. Kingdon Offshore Master Fund L.P., Kingdon Family Partnership, L.P. and Kingdon Credit Master Fund L.P. (collectively, the "Kingdon Purchasers") and Napo and the related transaction documents are secured by a security interest in substantially all of Napo's assets, including Napo intellectual property. As a result, if we default under our obligations under the Kingdon Notes or the transaction documents, the holders of such Kingdon Notes, acting through their appointed agent, could foreclose on their security interests and liquidate some or all of these assets, which would harm our business, financial condition and results of operations and could require us to reduce or cease operations.

**Risks Related to Intellectual Property**

***We cannot be certain that our patent strategy will be effective to protect against competition***

Our commercial success depends in large part on obtaining and maintaining patent, trademark and trade secret protection of our human or animal products, both prescription and non-prescription, our current human or animal product candidates and any future human or animal product candidates, and their respective components, formulations, methods used to manufacture them and methods of treatment, as well as successfully defending our patents and other intellectual property rights against third-party challenges. Our ability to stop unauthorized third parties from making, using, selling,

Table of Contents

offering to sell or importing our products or our product candidates is dependent upon the extent to which we have rights under valid and enforceable patents, trade secrets and other similar intellectual property that cover these activities. The patent prosecution process is expensive and time-consuming, and we may not be able to prepare, file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. It is also possible that we will fail to identify patentable aspects of inventions made in the course of development and commercialization activities in time to obtain patent protection on them.

We have a portfolio of United States and foreign issued patents and pending applications related to our products and product candidates. We have five issued United States patents listed in the FDA's Orange Book for Mytesi. We plan to rely on certain of these issued patents as protection for Canalevia. The strength of patents in the field of pharmaceuticals and animal health involves complex legal and scientific questions and can be uncertain. We cannot be certain that pending applications will issue as patents. For those patents that are already issued and even if other patents do successfully issue, third parties may challenge their validity, enforceability or scope, which may result in such patents being narrowed, invalidated or held unenforceable. Furthermore, even if they are unchallenged, our patents may not adequately protect our intellectual property or prevent others from designing around their claims. If the patents we have are not maintained or their scope is significantly narrowed or if we are not able to obtain issued patents from pending applications, our business and prospects would be harmed.

Recent patent reform legislation could increase the uncertainties and costs surrounding the prosecution of any patent applications and the enforcement or defense of any patents that issue. On September 16, 2011, the Leahy-Smith America Invents Act, or the Leahy-Smith Act, was signed into law. The Leahy-Smith Act includes a number of significant changes to U.S. patent law. These include provisions that affect the way patent applications are prosecuted, redefine prior art, may affect patent litigation, and switch the U.S. patent system from a "first-to-invent" system to a "first-to-file" system. Under a "first-to-file" system, assuming the other requirements for patentability are met, the first inventor to file a patent application generally will be entitled to the patent on an invention regardless of whether another inventor had made the invention earlier. The USPTO has developed new regulations and procedures to govern administration of the Leahy-Smith Act, and many of the substantive changes to patent law associated with the Leahy-Smith Act, and in particular, the first-to-file provisions, became effective on March 16, 2013. Among some of the other changes to the patent laws are changes that limit where a patentee may file a patent infringement suit and that provide opportunities for third parties to challenge any issued patent in the USPTO. The Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our patents and any other patents that issue, all of which could harm our business and financial condition.