TIME WARNER INC. Form DEFA14A May 19, 2014

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

SCHEDULE 14A

Proxy Statement Pursuant to Section 14(a) of the

Securities Exchange Act of 1934

	Securities Exchange Act of 1954			
Filed by the Registrant x				
Filed by a Party other than the Registrant "				
Check the appropriate box:				
	Preliminary Proxy Statement			
	Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))			
	Definitive Proxy Statement			
X	Definitive Additional Materials			
	Soliciting Material Pursuant to §240.14a-12 Time Warner Inc.			
	(Name of Registrant as Specified In Its Charter)			
	(Name of Person(s) Filing Proxy Statement, if other than the Registrant)			
Payment of Filing Fee (Check the appropriate box):				
X	No fee required.			
	Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.			
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	(2)	Aggregate number of securities to which transaction applies:
(3) forth the		unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (set on which the filing fee is calculated and state how it was determined):
	(4)	Proposed maximum aggregate value of transaction:
	(5)	Total fee paid:
	Fee paid	previously with preliminary materials:
	the filing	ox if any part of the fee is offset as provided by Exchange Act Rule 0-11(a)(2) and identify for which the offsetting fee was paid previously. Identify the previous filing by registration t number, or the Form or Schedule and the date of its filing.

(1)	Amount Previously Paid:
(2)	Form, Schedule or Registration Statement No.:
(3)	Filing Party:
(4)	Date Filed:
(.)	

Explanatory Note: As part of Time Warner Inc. s regular, ongoing engagement with shareholders, Time Warner is planning to have a number of in-person meetings with shareholders. The attached Proxy Statement Summary is intended to facilitate discussions at those meetings and presents information regarding the Company s businesses, performance, executive compensation programs, and governance practices taken from the Company s 2014 Proxy Statement.

2014 Proxy Statement Summary May 2014

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Executive Summary
Clear Operating Strategy
Sound Corporate &
Compensation Governance

Practices

Use leading scale and brands to create the best content

Lead digital transition of our industry

Expand internationally in faster-growing territories

Focus on operating and capital efficiency

Compensation Program

Closely Aligned With

Performance

Significant emphasis on variable performance-based compensation (93% of total target pay for CEO)

Mix of performance measures across varying time horizons

Challenging financial and strategic goals set at the beginning of each performance period Informed by shareholder perspectives; following long-standing practice of ongoing shareholder engagement, held conversations with shareholders representing > 40% of common stock in late 2013 93% of votes cast by shareholders in 2013 were in favor of named executive officer compensation Focused Business Model Sustained Strong Financial Performance Global leader in media and entertainment with a focus on video content Three ongoing operating divisions: Turner, HBO, and Warner Bros. Time Inc. will be spun-off on June 6, 2014 Adjusted Operating Income 5-year compound annual growth rate of 9.5%; 2013 growth of 7.7% to record \$6.6B Free Cash Flow grew 20% in 2013, to \$3.5B

Board s leadership structure and composition provide effective independent oversight Committee follows strong governance practices to determine executive compensation

Adjusted EPS 5-year compound annual growth rate of 21.6%; 2013 growth of 16.4% to \$3.77

Overview of Our Businesses

4

Owns and operates leading cable television networks and related digital properties in the U.S. and internationally, including TBS, TNT, CNN, Cartoon Network, Adult Swim, truTV and Turner Sports

Turner accounted for 33% of the Company s total revenues in 2013

Operates leading premium pay television services HBO and Cinemax, in the U.S. and internationally

Home Box Office accounted for 17% of the Company s total revenues in 2013 Global leader in entertainment with businesses that produce and distribute feature films, television programming, home entertainment, comic books, and

videogames, and license characters and brands for consumer products

Warner Bros. accounted for 39% of the Company s total revenues in 2013 One of the largest magazine publishers based on readership and print advertising revenues; also operates related websites and operations Time Inc. accounted for 11% of the Company s total revenues in 2013 The Company will spin off Time Inc. to its shareholders on June 6, 2014

Our Operating Strategy 2013 Highlights Lead digital transition of our industry Use leading scale and brands to create the best content Expand internationally in faster-growing territories Turner

o

TBS #1 ad-supported cable network in primetime among adults 18-34 and adults 18-49

Adult Swim #2 among adults 18-34 TNT aired four of the top 15 original series on ad-supported cable Home Box Office More Primetime Emmy awards than any other network for the 12th year in a row Warner Bros. #1 at the worldwide box office, with films grossing over \$5 billion in 2013 #1 producer of primetime broadcast series with > 60 series airing for the 2013-2014 season Continued to lead the development of new digital services and business models, such as TV Everywhere (including HBO GO), UltraViolet, Disc-to-Digital and digital magazines **HBO** GO active users grew over 30% and average monthly usage grew at double digit Increased monetization of content through platforms such as subscription video on demand Turner launched networks in Asia and Latin America, expanding to more than 150 channels over 200 countries Home

Box

Office
launched
premium
services
in
Denmark,
Norway
and
India
and
purchased
its
partners
interests in HBO Asia, HBO South Asia and HBO Nordic

5

Sustained Strong Financial Performance*

Free Cash Flow (\$B)

Return on Invested Capital

1-YR Growth: 7.7% 3-YR CAGR: 6.9%

Adjusted Operating Income (\$B)

Adjusted EPS

1-YR Growth: 16.4% 3-YR CAGR: 15.8%

6

* See Annex A for definitions of non-GAAP financial measures and reconciliations to the most directly comparable GAAP financial measures.

\$4.2

- \$4.6
- \$5.4
- \$5.9
- \$6.1
- \$6.6
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- \$1.42
- \$1.82
- \$2.43
- \$2.86
- \$3.24
- \$3.77 2009
- 2010
- 2011
- 2012
- 2013
- \$2.9
- \$2.7 \$2.7
- \$2.9
- \$3.5
- 20%
- 19%
- 19%
- 2011
- 2012
- 2013

Commitment to Driving Shareholder Value Direct Returns of Capital (\$B)
Total Shareholder Return
7
~\$19.7B in returns
since 2009
\$2.1
\$3.0
\$5.6
\$4.3
\$4.8
2009

2010

2011

2012

2013

Share Repurchases

Dividends

48.6%

133.1%

282.3%

32.4%

56.8%

128.2%

1-YR

3-YR

5-YR

Time Warner

S&P 500

Compensation Mix Focused on Components that Drive Performance
Chairman / CEO Pay
Pay for Other NEOs
93% Variable
81% Variable
8
7%
36%
57%
13%
19%

43%

25%

Base Salary

Target Annual Cash Bonus

Target Value of Performance Long-Term

Incentive Awards (PSUs & Stock Options)

Base Salary

Target Annual Cash Bonus

Target Value of Performance Long-Term

Incentive Awards (PSUs & Stock Options)

Target Value of Long-Term Incentive

Awards (RSUs)

Performance Measures and 2013 Results

Incentive

Component

Time

Horizon

Performance

Measure

How TWX & NEOs Performed on the Performance Measures

2013 Outcome Linked to

Performance

Annual Cash

Bonus

1-year Adj. Divisional Pre-Tax Income 70% 8% growth in 2013 145% financial performance rating (maximum 150%) Free Cash Flow 20% growth in 2013 Annual progress on key long-term strategic objectives 30% Individual performance achievements described on pages 45-46 of the proxy statement Individual performance ratings ranged from 130% to 140% (maximum 150%) PSUs with a Performance Period Ending in 2013 3-year TSR relative to the S&P 500 130.7% TSR (2011-2013) 91 percentile of the S&P 500 182.2% payout for 2011-2013 PSUs **Stock Options** 4-year vesting period TWX common stock price 1-year increase 45.8% 3-year increase 116.7%

5-year increase

235.7% Value realized determined by long-

```
term stock price
performance
9
For PSUs, (1) TSR is calculated using the average closing price for the 30 trading days ending on the first and last days of the
from
the
S&P
500
Index
during
the
performance
period
due
to
the
decline
of
such
companies
stock
price
below
the
minimum
market
capitalization
standard
only
if
their
stock
is
no
longer
traded
on
national
exchange
Multiple performance measures that are important to investors
Varying time horizons
1
1
st
```

More

Challenging

Financial

Goals

for

2013

*

2013 Adjusted Divisional Pre-Tax Income and Free Cash Flow goals for annual cash bonuses were significantly more challenging than for 2012

Higher growth required to achieve the same rating across entire range of outcomes

Adjusted Divisional Pre-Tax Income Growth

Required for 150% Rating

Free Cash Flow

Required for 150% Rating 10
*
See
Annex
A
for
definitions
of
non-GAAP
financial
measures
and
reconciliations
to
the
most
directly
comparable
GAAP
financial
measures.
6%
9%
2012
2013
\$2,565
\$3,195 2012
2012

CEO Pay

The Company entered into a new five-year employment agreement with Mr. Bewkes in 2012, effective January 1,

2013. Terms disclosed in the proxy statement filed last year

Structure of the agreement reflects input from shareholders

Increase in target compensation consisted only of long-term performance-based incentive opportunity

No increase in base salary or target bonus

No upfront grant of equity awards, and no further grants of time-vested RSUs

Removed exercise tax gross-up

Stock ownership requirement increased to 8x base salary (up from

5x)

2013 CEO compensation reflects the terms of the agreement

Mr. Bewkes

2013 Compensation

Base Salary No change Annual Cash Bonus No change in target bonus Financial criteria:

o

Committee approved a 145% financial performance rating

Individual performance:

Committee approved a 140% individual performance rating

Long-Term Incentive

Awards

Target annual value of long-term incentive awards increased

Awards entirely performance-based, with 50% of target value in PSUs and 50% in stock options

11

Best Practices in Compensation Governance
Regular engagement with shareholders, with input reflected in compensation plan design
Emphasis on variable compensation with multiple performance metrics
Substantial share ownership and retention requirements
Limited personal benefits
Limit on annual equity dilution
No gross-ups, including for change-in-control
Clawback policy
Use of independent compensation consultant
Annual compensation-related risk review and disclosure
12

Sound Corporate Governance

Lead Independent Director

has robust authority, including authority over meeting agendas

Board Leadership Policy requires consideration of Board leadership at least annually, with disclosure to shareholders on factors reviewed (see 2014 report posted at www.timewarner.com/leadership)

Stephen Bollenbach has served as Lead Independent Director since

May 2012

Director

Qualifications:

The

Board

believes

that

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the
Company
is
best
served
by
a
board
of
directors
consisting
of
individuals who have a variety of complementary skills, professional experience, and backgrounds, and who bring
diverse viewpoints and perspectives to the Board
Board Independence:
All directors, other than the CEO, are independent and each Board committee consists solely
of independent directors
Board Refreshment:
The Board believes it is well-served by having non-employee directors with a mix of tenures
and expects that average tenure will generally not exceed 10 years
Director Accountability:
Board is elected annually (no classified board) under a majority-vote standard
Special
Meeting
Rights:
Shareholders
have
the
right
to
request
special
meetings
(15%
threshold)
ESG Disclosure:
The Company keeps the investment community informed on activities relating to environmental,
social and governance matters, including through updates on corporate social responsibility (additional details
at
www.timewarner.com/citizenship)
13

Non-GAAP Financial Measures -Definitions A-1

Annex A

Adjusted Operating Income (Loss) is defined as Operating Income (Loss) excluding the impact of noncash impairments of goodwill, intangible and fixed assets; gains and losses on operating assets (other than deferred gains on sale-leasebacks); gains and losses recognized in connection with pension and other postretirement benefit plan curtailments or settlements; external correlated to mergers, acquisitions or dispositions, as well as contingent consideration related to such transactions, to the extent success are expensed; and amounts related to securities litigation and government investigations.

Adjusted Divisional Pre-Tax Income is defined as Adjusted Operating Income plus Income (loss) from equity method investments.

Adjusted EPS is defined as Diluted Income per Common Share from Continuing Operations attributable to Time Warner I common shareholders excluding noncash impairments of goodwill, intangible and fixed assets and investments; gains and loss

operating assets (other than deferred gains on sale-leasebacks), liabilities and investments; gains and losses recognized in connection with pension and other postretirement benefit plan curtailments or settlements; external costs related to mergers, acquisitions, investments or dispositions, as well as contingent consideration related to such transactions, to the extent such consideration related to such transactions, to the extent such consideration related to such transactions, to the extent such consideration related to such transactions, to the extent such consideration related to such transactions, to the extent such consideration related to such transactions, to the extent such consideration related to such transactions, to the extent such consideration related to such transactions, to the extent such consideration related to such transactions, to the extent such consideration related to such transactions, to the extent such consideration related to such transactions. are expensed; amounts related to securities litigation and government investigations; and amounts attributable to businesses classified as discontinued operations, as well as the impact of taxes and noncontrolling interests on the above items. For periods ending on or after July 1, 2012, Free Cash Flow is defined as Cash Provided by Operations from Continuing Operations plus payments related to securities litigation and government investigations (net of any insurance recoveries), exter costs related to mergers, acquisitions, investments or dispositions, to the extent such costs are expensed, contingent considerations payments made in connection with acquisitions, and excess tax benefits from equity instruments, less capital expenditures, prin payments on capital leases and partnership distributions, if any. For periods ending prior to that date, Free Cash Flow is det Cash Provided by Operations from Continuing Operations plus payments related to securities litigation and government investigations (net of any insurance recoveries), external costs related to mergers, acquisitions, investments or dispositions, to extent such costs are expensed, and excess tax benefits from equity instruments, less capital expenditures, principal payments of capital leases and partnership distributions, if any. A change to the definition of Free Cash Flow for periods prior to July 1, 20 adjust for contingent consideration payments made in connection with acquisitions would have had no impact on the reported Cash Flow for such periods.

Year Ended December 31, 2013 2012 2011 2010 2009 2008 Adjusted Operating Income \$ 6,599

6,126

```
5,864
$
5,400
4,618
4,193
Asset impairments
(140)
(186)
(44)
(20)
(85)
(7,213)
Gain (loss) on operating assets, net
142
9
7
70
(33)
(3)
Other
(1)
4
(31)
(22)
(22)
(30)
(21)
Operating Income
6,605
5,918
5,805
$
5,428
4,470
(3,044)
Non-GAAP Financial Measures -
Reconciliations
A-2
Reconciliation of Adjusted Operating Income to Operating Income
(In millions; Unaudited)
(1)
For 2013 and 2012, the definition of Other includes gains and losses recognized in connection with pension and other postretir
```

Edgar I ling. Time With territor. Tom Berittint
mergers,
acquisitions
or
dispositions;
and
amounts
related
to
securities
litigation
and
government
investigations.
For
2011,
the
definition
of
Other
includes
external
costs
related
to
mergers,
acquisitions or dispositions; and amounts related to securities litigation and government investigations. There were no pension
2011. For
2010, 2009 and 2008,
the
definition
of
Other
includes
only
amounts
related
to
securities
litigation
and
government
investigations.
Reconciliation of Adjusted EPS to Diluted Income Per Common Share from Continuing Operations
(Unaudited)
Year Ended December
31,
2013
2012
2011
2010

```
2009
2008
Diluted income per common share from continuing operations
$
3.77
$
3.00
$
2.71
$
2.27
1.74
$
(4.27)
Less Impact of items affecting comparability on diluted income
per common share from continuing operations
(0.24)
(0.15)
(0.16)
(0.08)
(5.69)
Adjusted diluted income per common share from continuing
operations
$
3.77
$
3.24
$
2.86
$
2.43
$
1.82
1.42
```

```
A-3
Reconciliation of Cash Provided by Operations from Continuing Operations to Free Cash Flow (In millions; Unaudited)
Year Ended December
31,
2013
2012
2011
2010
2009
Cash provided by operations from continuing operations
$
```

3,716

```
3,476
$
3,448
3,314
$
3,386
Add payments related to securities litigation and government
investigations
3
8
22
30
Add
external
costs
related
to
mergers,
acquisitions,
investments
or
dispositions and contingent consideration payments
232
33
14
21
Add excess tax benefits from equity instruments
179
83
22
7
1
Less capital expenditures
(602)
(643)
(772)
(631)
(547)
Less principal payments on capital leases
(9)
(11)
(12)
(14)
(18)
Free Cash Flow
$
```

3,516 \$
2,941 \$
2,708 \$
2,698 \$
2,873
Non-GAAP Financial Measures - Reconciliations

```
A-4
Non-GAAP Financial Measures -
Reconciliations
Reconciliation of Return on Invested Capital (ROIC)
(In millions; Unaudited)
Reconciliation of Operating Income to NOPAT
Year Ended December 31,
2013
2012
2011
Operating Income
$
6,605
```

```
5,918
$
5,805
Asset impairments
140
186
44
Loss on Operating Assets
(142)
(9)
(7)
Other operating income items
(4)
31
22
Adjusted Operating Income
6,599
6,126
5,864
Add Amortization expense
251
248
269
Adjusted Operating Income before amortization expense
6,850
6,374
6,133
Less
Income
taxes
(1)
(2,261)
(2,167)
(2,024)
Add equity loss, net of taxes
(152)
(183
)
(79)
Adjust for items affecting comparability relating to equity
method investments
30
94
NOPAT
(2)
$
4,467
```

4,118

\$

4,031

A-5

Reconciliation of Total Assets to Capital Employed

Non-GAAP Financial Measures -

Reconciliations

(1)

Calculated

using

the

Company s adjusted

effective

tax

rate

```
33%
for
2013,
34%
for
2012
and
33%
for
2011.
The
Company s
adjusted
effective
tax
rate
reflects
the
impact
of
the
items
affecting
comparability on the Company s Income from continuing operations as set forth as set forth below.
2013
2012
2011
Actual
Adjustments
As Adjusted
Actual
Adjustments
As Adjusted
Actual
Adjustments
As Adjusted
Income from continuing
operations before
income taxes
5,303
       39
   5,264
4,448
    (335)
4,783
4,359
```

```
(201)
4,560
Income tax provision
(1,749)
      (34)
             (1,715)
(1,526)
     100
 (1,626)
(1,477)
      43
 (1,520)
Effective Tax rate
      33%
      87%
     33%
    34%
     30%
34%
    34%
     21%
33%
Year Ended December
31,
2013
2012
2011
2010
Total Assets
$
67,994
68,089
67,801
66,732
Less:
Deferred tax assets
(447)
(474
(663
)
(581)
Total current liabilities of continuing
operations less debt due within one year
(8,317)
(9,050)
```

(8,899

```
(8,800
Excess cash
(3)
(362)
(1,341)
(1,976
)
(2,163)
Capital employed
58,868
57,224
56,263
55,188
Less Purchase Price Adjustments
(34,888)
(35,060)
(35,292)
(35,528)
Capital employed excluding PPA
$
23,980
$
22,164
20,971
$
19,660
Average Capital Employed
(5)
$
58,046
56,744
$
55,726
Average Capital Employed excluding PPA
(5)
$
23,072
$
21,568
20,316
ROIC
(6)
8%
7%
```

7%

ROIC excluding PPA

(6)

19%

19%

20%

(4)

A-6
Non-GAAP Financial Measures Reconciliations
Year
Ended
December
31,
2013
2012
2011
Items Affecting Comparability
Asset impairments
\$

```
(140)
(186)
(44)
Gains on operating assets, net
142
9
7
Other
operating
income
items
(a)
4
(31)
(22)
Gains (losses) on investments
(30)
(136)
Other
Amounts related to separation of Time Warner Cable Inc.
3
4
(5)
Amounts related to separation of Warner Music Group
(1)
(7)
Items affecting comparability relating to equity method investments
(30)
(94)
(1)
Total other
(28)
(97)
(6)
Total of above items affecting comparability
(335)
(201)
Income
tax
impact
of
above
items
(b)
```

(34)

100 43 Impact of items affecting comparability on income attributable to Time Warner Inc. shareholders 5 \$ (235)\$ (158)(a) For 2013 and 2012, the definition of Other operating income items includes gains and losses recognized in connection with per settlements; external costs related to mergers, acquisitions or dispositions; and amounts related to securities litigation and gove operating income items includes external costs related to mergers, acquisitions or dispositions; and amounts related to securities For the year ended December 31, 2012, includes \$42 million that reflects the reversal of a valuation allowance related to the us 2013 sale of the Company s investment in a joint venture in Japan. The sale of such investment closed in the first quarter of 2 Net operating profit after taxes (NOPAT) represents the Adjusted Operating Income before amortization expense, net of tax (loss), net of taxes from investments accounted for under the equity method adjusted for the Company s share of items affecting comparability relating to such equity method investments. Excess cash represents the amount of cash in excess of \$1.5 billion. Purchase Price Adjustments (PPA) reflect the net outstanding goodwill and intangible assets recognized in connection with America Online, Inc. (now

Lugar Filling. Filvic WARNER INC Form Del ATAA
known
as
Historic
AOL
LLC)
in
2001
and
the
restructuring
of
Time
Warner
Entertainment
Company, L.P.
in 2002
2003.
Average Capital Employed and Average Capital Employed excluding PPA are calculated using the respective amounts at Dec
(6)
Return
on .
Invested
Capital
(ROIC)
is
calculated
as
NOPAT
divided
by
Average
Capital
Employed
and
ROIC
excluding
PPA
is
calculated
as
NOPAT
divided
by
Average
Capital
Employed
excluding
PPA.

atents issued on applications filed on or after March 16, 2013, and the implementation of such reform laws presents uncertainty regarding the outcome of any challenges to our future patents, if any, and to patents we have in licensed. In addition to possible infringement claims against us, we may be subject to third-party pre-issuance submission of prior art to the USPTO, or become involved in opposition, derivation, reexamination, inter partes review, post-grant review, or other patent office proceedings or litigation in the United States or elsewhere, challenging our patent rights or the patent rights of others. For applications filed before March 16, 2013 or patents issuing from such applications, if third parties have prepared and filed patent applications in the United States that also claim technology to which we have rights, we may have to participate in interference proceedings in the USPTO to determine the priority of invention. Because patent applications in the United States and most other countries are confidential for a period of time after filing, we cannot be certain that we were the first to either file patent applications on or invent any of the inventions claimed in our patent applications. Because of a lower evidentiary standard in USPTO proceedings compared to the evidentiary standard in United States federal court necessary to invalidate a patent claim, a third party could potentially provide evidence in a USPTO proceeding sufficient for the USPTO to hold a claim invalid even though the same evidence would be insufficient to invalidate the claim if first presented in a district court action. We may also become involved in opposition or similar proceedings in patent offices in other jurisdictions regarding our intellectual property rights with respect to our prescription drug or non-prescription products and technology. An adverse determination in any such submission, proceeding or litigation could reduce the scope of, or invalidate, our future patent rights, if any, allow third parties to commercialize our technology or products and compete directly with us, without payment to us, or result in our inability to manufacture or commercialize products without infringing third-party patent rights.

Our proprietary position depends upon patents that are formulation or method-of-use patents, which do not prevent a competitor from using the same drug candidate for another use.

Composition-of-matter patents on the API in prescription drug products are generally considered to be the strongest form of intellectual property protection because such patents provide protection without regard to any particular method of use or manufacture or formulation of the API used. The composition-of-matter patents for crofelemer, the API in Canalevia, have expired, and we have licensed from Napo patents and applications covering formulations and methods of use for crofelemer and the botanical extract in Neonorm.

Method-of-use patents protect the use of a product for the specified method and formulation patents cover formulations of the API or botanical extract. These types of patents do not prevent a competitor from developing or marketing an identical product for an indication that is outside the scope of the patented method or from developing a different formulation that is outside the scope of the patented formulation. Moreover, with respect to method-of-use patents, even if competitors do not actively promote their product for our targeted indications or uses for which we may obtain patents, veterinarians may recommend that animal owners use these products extra-label, or animal owners may do so themselves. Although extra-label use may infringe or contribute to the infringement of method-of-use patents, the practice is common and such infringement is difficult to prevent or prosecute.

Table of Contents

If our efforts to protect intellectual property are not adequate, we may not be able to compete effectively in our markets.

We intend to rely upon a combination of regulatory exclusivity periods, patents, trade secret protection, confidentiality agreements, and license agreements to protect the intellectual property related to our current prescription drug product candidates and non-prescription products and our development programs.

If the breadth or strength of protection provided by any patents, patent applications or future patents we may own, license, or pursue with respect to any of our current or future product candidates or products is threatened, it could threaten our ability to commercialize any of our current or future product candidates or products. Further, if we encounter delays in our development efforts, the period of time during which we could market any of our current or future product candidates or products under any patent protection we obtain would be reduced.

Given the amount of time required for the development, testing and regulatory review of new product candidates or products, patents protecting such candidates might expire before or shortly after such product candidates or products are commercialized. Patent term extensions have been applied for US 7,323,195 and US 7,341,744 to account for regulatory delays in obtaining human marketing approval for crofelemer, however, only one patent may be extended per marketed compound. If such extensions are received, then US 7,323,195 may be extended to June 2021 or US 7,341,744 may be extended to December 2020. However, the applicable authorities, including the USPTO and the FDA, and any equivalent regulatory authority in other countries, may not agree with our assessment of whether such extensions are available, and may refuse to grant extensions to patents, or may grant more limited extensions than requested. If this occurs, our competitors may take advantage of our investment in development and trials by referencing our clinical and preclinical data and launch their product earlier than might otherwise be the case.

Even where laws provide protection or we are able to obtain patents, costly and time-consuming litigation may be necessary to enforce and determine the scope of our proprietary rights, and the outcome of such litigation would be uncertain. Moreover, any actions we may bring to enforce our intellectual property against our competitors could provoke them to bring counterclaims against us, and some of our competitors have substantially greater intellectual property portfolios than we have.

If we are unable to prevent disclosure of our trade secrets or other confidential information to third parties, our competitive position may be impaired.

We also rely on trade secret protection and confidentiality agreements to protect proprietary know-how that is not patentable or for which we have not filed patent applications, processes for which patents are difficult to enforce and other elements of our product development processes that involve proprietary know-how, information or technology that is not covered by patents. Although we require all of our employees to assign their inventions to us, and endeavor to execute confidentiality agreements with all of our employees, consultants, advisors and any third parties who have access to our proprietary know-how, information or technology, we cannot be certain that we have executed such agreements with all parties who may have helped to develop our intellectual property or had access to our proprietary information, or that our agreements will not be breached. We cannot guarantee that our trade secrets and other confidential proprietary information will not be disclosed or that competitors will not otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. If we are unable to prevent disclosure of our intellectual property to third parties, we may not be able to maintain a competitive advantage in our market, which would harm our business.

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Any disclosure to or misappropriation by third parties of our confidential proprietary information could enable competitors to quickly duplicate or surpass our technological achievements, and erode our competitive position in our market.

We may be involved in lawsuits to protect or enforce any future patents issued to us, which could be expensive, time-consuming and unsuccessful.

Competitors may infringe upon any patents that may issue to us, or any patents that we may license. To counter infringement or unauthorized use of any patents we may obtain, we may be required to file infringement claims or request that our licensor file an infringement claim, which can be expensive and time-consuming to litigate. In addition, if we or one of our future collaborators were to initiate legal proceedings against a third party to enforce a patent covering our current product candidates, or one of our future products, the defendant could counterclaim that the patent is invalid or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness, non-enablement or lack of statutory subject matter. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant material information from the USPTO, or made a materially misleading statement, during prosecution. Third parties may also raise similar validity claims before the USPTO in post-grant proceedings such as ex parte reexaminations, inter partes review, or post-grant review, or oppositions or similar proceedings outside the United States, in parallel with litigation or even outside the context of litigation. The outcome following legal assertions of invalidity and unenforceability is unpredictable. If a defendant were to prevail on a legal assertion of invalidity or unenforceability, we would lose at least part, and perhaps all, of any future patent protection on our current or future product candidates. Such a loss of patent protection could harm our business. We cannot be certain that there is no invalidating prior art, of which we and the patent examiner were unaware during prosecution. For the patents and patent applications that we have licensed, we may have limited or no right to participate in the defense of any licensed patents against challenge by a third party.

Litigation proceedings may fail and, even if successful, may result in substantial costs and distract our management and other employees. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be unsuccessful, it could have an adverse effect on the price of our common stock. Finally, we may not be able to prevent, alone or with the support of our licensors, misappropriation of our trade secrets or confidential information, particularly in countries where the laws may not protect those rights as fully as in the United States.

Changes in U.S. patent law could diminish the value of patents in general, thereby impairing our ability to protect our products.

As is the case with other animal health product companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the animal health industry involves both technological and legal complexity. Therefore, obtaining and enforcing patents is costly, time-consuming and inherently uncertain. In addition, the United States has recently enacted and implemented wide-ranging patent reform legislation. The U.S. Supreme Court has ruled on several patent cases in recent years, either narrowing the scope of patent protection available in certain circumstances or weakening the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on decisions by the

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U.S. Congress, the federal courts, and the USPTO, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce patents that we have licensed or that we might obtain in the future.

We may not be able to protect our intellectual property rights throughout the world, which could impair our business.

Filing, prosecuting and defending patents on prescription drug products, product candidates and non-prescription products throughout the world would be prohibitively expensive. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and, further, may export otherwise infringing products to territories where we may obtain patent protection, but where patent enforcement is not as strong as that in the United States. These products may compete with our products in jurisdictions where we do not have any issued or licensed patents and any future patent claims or other intellectual property rights may not be effective or sufficient to prevent them from so competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents and other intellectual property protection, particularly those relating to animal health products, which could make it difficult for us to stop the infringement of our future patents, if any, or patents we have in licensed, or marketing of competing products in violation of our proprietary rights generally. Further, the laws of some foreign countries do not protect proprietary rights to the same extent or in the same manner as the laws of the United States. As a result, we may encounter significant problems in protecting and defending our intellectual property both in the United States and abroad. Proceedings to enforce our future patent rights, if any, in foreign jurisdictions could result in substantial cost and divert our efforts and attention from other aspects of our business.

Our business could be harmed if we fail to obtain certain registered trademarks in the United States or in other countries.

In October 2014, our trademark applications for Canalevia and Neonorm were approved for publication. Although we have filed a trademark application for our company name and our logo in the United States, our applications have not been granted and the corresponding marks have not been registered in the United States. We have not filed for these or other trademarks in any other countries. During trademark registration proceedings, we may receive rejections of our trademark applications. If so, we will have an opportunity to respond, but we may be unable to overcome such rejections. In addition, the USPTO and comparable agencies in many foreign jurisdictions may permit third parties to oppose pending trademark applications and to seek to cancel registered trademarks. If opposition or cancellation proceedings are filed against any of our trademark applications or any registered trademarks, our trademarks may not survive such proceedings. Moreover, any name we propose to use with our prescription drug product candidates in the United States, including Canalevia, must be approved by the FDA, regardless of whether we have registered or applied to register as a trademark. The FDA typically conducts a review of proposed prescription drug product names, including an evaluation of potential for confusion with other product names. If the FDA objects to any of our proposed proprietary product names, we may be required to expend significant additional resources in an effort to identify a suitable substitute name that would qualify under applicable trademark laws, not infringe the existing rights of third parties and be acceptable to the FDA.

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We may be subject to claims that our employees, consultants or independent contractors have wrongfully used or disclosed confidential information of third parties.

We have received confidential and proprietary information from third parties. In addition, we employ individuals who were previously employed at other biotechnology, pharmaceutical or animal health companies. We may be subject to claims that we or our employees, consultants or independent contractors have inadvertently or otherwise improperly used or disclosed confidential information of these third parties or our employees' former employers. Litigation may be necessary to defend against any such claims. Even if we are successful in defending against any such claims, such litigation could result in substantial cost and be a distraction to our management and employees.

Risks Related to Government Regulation

Even if we receive any required regulatory approvals for our current or future prescription drug product candidates and non-prescription products, we will be subject to ongoing obligations and continued regulatory review, which may result in significant additional expense.

If the FDA or any other regulatory body approves any of our current or future prescription drug product candidates, or if necessary, our non-prescription products, the manufacturing processes, clinical development, labeling, packaging, distribution, adverse event reporting, storage, advertising, promotion and recordkeeping for the product may be subject to extensive and ongoing regulatory requirements. These requirements could include, but are not limited to, submissions of efficacy and safety and other post-marketing information and reports, establishment registration, and product listing, compliance with new rules promulgated under the FSMA, as well as continued compliance with cGMP, GLP and GCP for any studies that we conduct post-approval. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with our contract manufacturers or manufacturing processes, or failure to comply with regulatory requirements, are reportable events to the FDA and may result in, among other things:

restrictions on the marketing or manufacturing of the product, withdrawal of the product from the market, revised labeling, or voluntary or involuntary product recalls;

additional clinical studies

fines, warning letters or holds on target animal studies;

refusal by the FDA, or other regulators to approve pending applications or supplements to approved applications filed by us or our strategic collaborators related to the unknown problems, or suspension or revocation of the problematic product's license approvals;

product seizure or detention, or refusal to permit the import or export of products; and

injunctions or the imposition of civil or criminal penalties.

The FDA or other regulatory agency's policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates or require certain changes to the labeling or additional clinical work concerning safety and efficacy of the product candidates. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability, which would harm our business. In addition, failure to comply with these regulatory requirements could result in significant penalties.

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In addition, from time to time, we may enter into consulting and other financial arrangements with veterinarians, who prescribe or recommend our products, once approved. As a result, we may be subject to state, federal and foreign healthcare and/or veterinary medicine laws, including but not limited to anti-kickback laws. If our financial relationships with veterinarians are found to be in violation of such laws that apply to us, we may be subject to penalties.

The issuance by the FDA of protocol concurrences for our pivotal studies does not guarantee ultimate approval of our NADA.

We intend to seek protocol concurrences from the FDA for the pivotal trial of Canalevia that we have initiated for acute diarrhea in dogs and for future pivotal trials in other indications. A pivotal study protocol is submitted to the FDA by a drug sponsor for purposes of obtaining FDA review of the protocol. Prior FDA review of the protocol for a pivotal study makes it more likely that the study will generate information the sponsor needs to demonstrate whether the drug is safe and effective for its intended use. It creates an expectation by the sponsor that the FDA should not later alter its perspectives on these issues unless public or animal health concerns appear that were not recognized at the time of protocol assessment. Even if the FDA issues a protocol concurrence, ultimate approval of an NADA by the FDA is not guaranteed because a final determination that the agreed-upon protocol satisfies a specific objective, such as the demonstration of efficacy, or supports an approval decision, will be based on a complete review of all the data submitted to the FDA. Even if we were to obtain protocol concurrence such concurrence does not guarantee that the results of the study will support a particular finding or approval of the new drug.

Any of our current or future prescription drug product candidates or non-prescription products may cause or contribute to adverse medical events that we would be required to report to regulatory authorities and, if we fail to do so, we could be subject to sanctions that would harm our business.

If we are successful in commercializing any of our current or future prescription drug product candidates or non-prescription products, certain regulatory authorities will require that we report certain information about adverse medical events if those products may have caused or contributed to those adverse events. The timing of our obligation to report would be triggered by the date we become aware of the adverse event as well as the nature of the event. We may fail to report adverse events we become aware of within the prescribed timeframe. We may also fail to appreciate that we have become aware of a reportable adverse event, especially if it is not reported to us as an adverse event or if it is an adverse event that is unexpected or removed in time from the use of our products. If we fail to comply with our reporting obligations, the regulatory authorities could take action including, but not limited to, criminal prosecution, seizure of our products, facility inspections, removal of our products from the market, recalls of certain lots or batches, or cause a delay in approval or clearance of future products.

Legislative or regulatory reforms with respect to animal health may make it more difficult and costly for us to obtain regulatory clearance or approval of any of our current or future product candidates and to produce, market, and distribute our products after clearance or approval is obtained.

From time to time, legislation is drafted and introduced in the U.S. Congress or other jurisdictions in which we intend to operate that could significantly change the statutory provisions governing the testing, regulatory clearance or approval, manufacture, and marketing of regulated products. In addition, the FDA's regulations and guidance are often revised or reinterpreted by the FDA and such other regulators in ways that may significantly affect our business and our products and product candidates. Similar changes in laws or regulations can occur in other countries. Any new regulations or revisions or reinterpretations of existing regulations in the United States or in other countries may impose additional costs or lengthen review times of any of our current or future products and product candidates. We cannot determine what effect changes in regulations, statutes, legal interpretation or policies, when and if promulgated, enacted or adopted may have on our business in the future. Such changes could, among other things, require:

changes to manufacturing methods;

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additional clinical trials or testing;

new requirements related to approval to enter the market;

recall, replacement, or discontinuance of certain products; and

additional record keeping or the development of certain regulatory required hazard identification plans.

Each of these would likely entail substantial time and cost and could harm our financial results. In addition, delays in receipt of or failure to receive regulatory clearances or approvals for any future products would harm our business, financial condition, and results of operations.

We believe that our non-prescription products are not subject to regulation by regulatory agencies in the United States, but there is a risk that regulatory bodies may disagree with our interpretation, or may redefine the scope of its regulatory reach in the future, which would result in additional expense and could delay or prevent the commercialization of these products.

The FDA retains jurisdiction over all animal prescription drug products however, in many instances, the Federal Trade Commission will exercise primary or concurrent jurisdiction with FDA on non-prescription products as to post marketing claims made regarding the product. On April 22, 1996, the FDA published a statement in the Federal Register, 61 FR 17706, that it believes that the Dietary Supplement and Health Education Act, or DSHEA, does not apply to animal health supplement products, such as our non-prescription products. Accordingly, the FDA's Center for Veterinary Medicine only regulates those animal supplements that fall within the FDA's definition of an animal drug, animal food or animal feed additive. The Federal Food Drug and Cosmetic Act defines food as "articles used for food or drink for man or other animals and articles used as components of any such article." Animal foods are not subject to pre-market approval and are designed to provide a nutritive purpose to the animals that receive them. Feed additives are defined as those articles that are added to an animal's feed or water as illustrated by the guidance documents. Our non-prescription products are not added to food, are not ingredients in food nor are they added to any animal's drinking water. Therefore, our non-prescription products do not fall within the definition of a food or feed additive. In light of the pronouncement by the FDA that the DSHEA was not intended to apply to animals, the FDA seeks to regulate such supplements as food or food additives depending on the intended use of the product. The intended use is demonstrated by how the article is included in a food, or added to the animals' intake (i.e., through its drinking water). If the intended use of the product does not fall within the proscribed use making the product a food, it cannot be regulated as a food. There is no intent to make our non-prescription products a component of an animal food, either directly or indirectly. A feed additive is a product that is added to a feed for any reason including the top dressing of an already prepared feed. Some additives, such as certain forage, are deemed to be Generally Recognized as Safe, or GRAS, and therefore, not subject to a feed Additive Petition approval prior to use. However, the substances deemed GRAS are generally those that are recognized as providing nutrients as a food does. We do not believe that our non-prescription products fit within this framework either. Finally, a new animal drug refers to drugs intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease in animals. Our non-prescription Neonorm Foal and Neonorm Calf products are not intended to diagnose, cure, mitigate, treat or prevent disease and therefore, do not fit within the definition of an animal drug. Additionally, because a previously marketed human formulation of the botanical extract in our non-prescription products was regulated as a human dietary supplement subject to the DSHEA (and not regulated as a drug by the FDA), we do not believe that the FDA would regulate the animal formulation used in our non-prescription products in a different manner. We do not believe that our non-prescription products fit the definition of an animal drug, food or food additive and therefore are not regulated by the FDA at this time.

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However, despite many such unregulated animal supplements currently on the market, the FDA may choose in the future to exercise jurisdiction over animal supplement products in which case, we may be subject to unknown regulations thereby inhibiting our ability to launch or to continue marketing our non-prescription products. In the past, the FDA has redefined or attempted to redefine some non-prescription non-feed products as falling within the definition of drug, feed or feed additive and therefore subjected those products to the relevant regulations. We have not discussed with the FDA our belief that the FDA currently does not exercise jurisdiction over our non-prescription products. Should the FDA assert regulatory authority over our non-prescription products, we would take commercially reasonable steps to address the FDA's concerns, potentially including but not limited to, seeking registration for such products, reformulating such products to further distance such products from regulatory control, or ceasing sale of such products. Further, the Animal and Plant Health Inspection Service, an agency of the USDA, may at some point choose to exercise jurisdiction over certain non-prescription products that are not intended for production animals. We do not believe we are currently subject to such regulation, but could be in the future. If the FDA or other regulatory agencies, such as the USDA, try to regulate our non-prescription products, we could be required to seek regulatory approval for our non-prescription products, which would result in additional expense and could delay or prevent the commercialization of these products.

Risks Related to Our Common Stock

Our failure to meet the continued listing requirements of The NASDAQ Capital Market could result in a delisting of our common stock.

On August 22, 2016 we received a notice from NASDAQ of non-compliance with its continuing listing rules, namely that our stockholders' equity at June 30, 2016 of \$1,565,316, as reported in our Form 10-Q for the quarter then ended, was less than \$2,500,000 minimum. The failure to meet continuing compliance standards subjects our common stock to delisting. Based on the plan submitted by the Company to regain compliance, the Securities and Exchange Commission, or the SEC, granted the Company an extension until February 21, 2017 to regain compliance.

The delisting of our common stock from NASDAQ may make it more difficult for us to raise capital on favorable terms in the future. Such a delisting would likely have a negative effect on the price of our common stock and would impair your ability to sell or purchase our common stock when you wish to do so. Further, if we were to be delisted from The NASDAQ Capital Market, our common stock would cease to be recognized as covered securities and we would be subject to regulation in each state in which we offer our securities.

While we presented a plan to regain compliance, there can be no assurance that NASDAQ will grant our request for continued listing on The NASDAQ Capital Market, or that our plan to comply with the required minimum shareholders' equity will be successful. Moreover, there is no assurance that any actions that we take to restore our compliance with NASDAQ's listing requirements would stabilize the market price or improve the liquidity of our common stock, prevent our common stock from dropping below the NASDAQ minimum bid price requirement or prevent future non-compliance with NASDAQ's listing requirements.

The price of our common stock could be subject to volatility related or unrelated to our operations, and purchasers of our common stock could incur substantial losses.

The trading price of our common stock could be subject to wide fluctuations in response to various factors, some of which are beyond our control. These factors include those discussed previously in this "Risk Factors" section of this prospectus and others, such as:

delays in the commercialization of Neonorm, Canalevia, Equilevia or our other current or future prescription drug product candidates and non-prescription products;

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any delays in, or suspension or failure of, our current and future studies;

announcements of regulatory approval or disapproval of any of our current or future product candidates or of regulatory actions affecting us or our industry;

manufacturing and supply issues that affect product candidate or product supply for our studies or commercialization efforts;

quarterly variations in our results of operations or those of our competitors;

changes in our earnings estimates or recommendations by securities analysts;

the payment of licensing fees or royalties in shares of our common stock;

announcements by us or our competitors of new prescription drug products or product candidates or non-prescription products, significant contracts, commercial relationships, acquisitions or capital commitments;

announcements relating to future development or license agreements including termination of such agreements;

adverse developments with respect to our intellectual property rights or those of our principal collaborators;

commencement of litigation involving us or our competitors;

any major changes in our board of directors or management;

new legislation in the United States relating to the prescription, sale, distribution or pricing of animal health products;

product liability claims, other litigation or public concern about the safety of our prescription drug product candidates and non-prescription products or any such future products;

market conditions in the animal industry, in general, or in the animal health sector, in particular, including performance of our competitors; and

general economic conditions in the United States and abroad.

In addition, the stock market, in general, or the market for stocks in our industry, in particular, may experience broad market fluctuations, which may adversely affect the market price or liquidity of our common stock. Any sudden decline in the market price of our common stock could trigger securities class-action lawsuits against us. If any of our stockholders were to bring such a lawsuit against us, we could incur substantial costs defending the lawsuit and the time and attention of our management would be diverted from our business and operations. We also could be subject to damages claims if we are found to be at fault in connection with a decline in our stock price.

No active market for our common stock exists or may develop, and you may not be able to resell your common stock at or above the public offering price.

Prior to our initial public offering in May 2015, there was no public market for shares of our common stock. The listing of our common stock on The NASDAQ Capital Market does not assure that a meaningful, consistent and liquid trading market exists. Although our common stock is listed on The NASDAQ Capital Market, trading volume in our common stock has been limited and an active trading market for our shares my never develop or be sustained. If an active market for our common stock does not develop, you may be unable to sell your shares when you wish to sell them or at a price that you consider attractive or satisfactory. The lack of an active market may also adversely affect our ability to raise capital by selling securities in the future, or impair our ability to license or acquire other product candidates, businesses or technologies using our shares as consideration.

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The sale of our common stock by the selling stockholders could cause the price of our common stock to decline.

Depending on a variety of factors, including market liquidity of our common stock, the sale of shares by the selling stockholders under the registration statement, of which this prospectus is a part, may result in dilution to the interests of other holders of our common stock. The sale of a substantial number of shares of our common stock by the selling stockholders in this offering, or anticipation of such sales, could cause the trading price of our common stock to decline or make it more difficult for us to sell equity or equity-related securities in the future at a time and at a price that we might otherwise desire.

The sale of our common stock to Aspire Capital may cause substantial dilution to our existing stockholders and the sale of the shares of common stock acquired by Aspire Capital could cause the price of our common stock to decline.

On June 8, 2016, we entered into the Purchase Agreement with Aspire Capital, in which Aspire Capital committed to purchase, at our election, up to an aggregate of \$15.0 million shares of our common stock over a period of approximately 30 months (i.e., 30 months from July 8, 2016, the effective date of the initial registration statement on Form S-1 that we filed to register the shares that we issued and may issue to Aspire pursuant to the Purchase Agreement).

Through December 1, 2016, we have issued 2,027,490 shares of our common stock to Aspire Capital under the Purchase Agreement for gross proceeds of approximately \$2.7 million. We may ultimately sell all, some or none of the approximately \$12.3 million of common stock remaining under the Purchase Agreement to Aspire Capital, and Aspire Capital may sell all, some or none of our shares that it holds or comes to hold under the Purchase Agreement. Sales by Aspire Capital of shares acquired pursuant to the Purchase Agreement may result in dilution to the interests of other holders of our common stock. The sale of a substantial number of shares of our common stock by Aspire Capital, or anticipation of such sales, could make it more difficult for us to sell equity or equity-related securities in the future at a time and at a price that we might otherwise wish to effect sales. However, we have the right to control the timing and amount of sales of our shares to Aspire Capital, and the Purchase Agreement may be terminated by us at any time at our discretion without any penalty or cost to us.

If securities or industry analysts do not publish research or reports about our company, or if they issue an adverse or misleading opinions regarding us or our stock, our stock price and trading volume could decline.

The trading market for our common stock depends in part on the research and reports that industry or financial analysts publish about us or our business. We do not influence or control the reporting of these analysts. If one or more of the analysts who do cover us downgrade or provide a negative outlook on our company or our industry, or the stock of any of our competitors, the price of our common stock could decline. If one or more of these analysts ceases coverage of our company, we could lose visibility in the market, which in turn could cause the price of our common stock to decline.

You may be diluted by exercises of outstanding options and warrants.

As of December 1, 2016, we had outstanding options to purchase an aggregate of 2,426,596 shares of our common stock at a weighted average exercise price of \$2.60 per share and warrants to purchase an aggregate of 5,968,876 shares of our common stock at a weighted-average exercise price of \$1.40 per share. The exercise of such outstanding options and warrants will result in further dilution of your investment. In addition, you may experience additional dilution if we issue common stock in the future. As a result of this dilution, you may receive significantly less in net tangible book value than the full purchase price you paid for the shares in the event of liquidation.

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We will have broad discretion to use the net proceeds from this offering, and may use them in ways that do not enhance our operating results or the market price of our common stock.

Although we will not receive proceeds from the sale of the shares by the selling stockholders, we would receive proceeds in the event that any warrant is exercised for cash. If the selling stockholders exercise, on a cash basis, the warrants underlying the shares being registered, our management will have broad discretion regarding the use of the net proceeds therefrom, and we could spend the net proceeds in ways our stockholders may not agree with or that do not yield a favorable return, if at all. We intend to use the net proceeds from this offering for working capital and general corporate purposes. We may also use a portion of the net proceeds to acquire additional product candidates or complementary assets or businesses; however, we currently have no agreements or commitments to complete any such transaction. Our use of these proceeds may differ substantially from our current plans. If we do not invest or apply the net proceeds from this offering in ways that improve our operating results or our prospects, our stock price could decline.

Provisions in our charter documents and under Delaware law could discourage a takeover that stockholders may consider favorable and may lead to entrenchment of management.

Our amended and restated certificate of incorporation and amended and restated bylaws contain provisions that could delay or prevent changes in control or changes in our management without the consent of our board of directors. These provisions to include the following:

a classified board of directors with three-year staggered terms, which may delay the ability of stockholders to change the membership of a majority of our board of directors;

no cumulative voting in the election of directors, which limits the ability of minority stockholders to elect director candidates;

the exclusive right of our board of directors to elect a director to fill a vacancy created by the expansion of the board of directors or the resignation, death or removal of a director, which prevents stockholders from being able to fill vacancies on our board of directors:

the ability of our board of directors to authorize the issuance of shares of preferred stock and to determine the terms of those shares, including preferences and voting rights, without stockholder approval, which could adversely affect the rights of our common stockholders or be used to deter a possible acquisition of our company;

the ability of our board of directors to alter our bylaws without obtaining stockholder approval;

the required approval of the holders of at least 75% of the shares entitled to vote at an election of directors to adopt, amend or repeal our bylaws or repeal the provisions of our amended and restated certificate of incorporation regarding the election and removal of directors;

a prohibition on stockholder action by written consent, which forces stockholder action to be taken at an annual or special meeting of our stockholders;

the requirement that a special meeting of stockholders may be called only by the chairman of the board of directors, the chief executive officer, the president or the board of directors, which may delay the ability of our stockholders to force consideration of a proposal or to take action, including the removal of directors; and

advance notice procedures that stockholders must comply with in order to nominate candidates to our board of directors or to propose matters to be acted upon at a stockholders' meeting, which may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of

us.

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These provisions could inhibit or prevent possible transactions that some stockholders may consider attractive.

We are also subject to the anti-takeover provisions contained in Section 203 of the Delaware General Corporation Law. Under Section 203, a corporation generally may not engage in a business combination with any holder of 15% or more of its capital stock unless the holder has held the stock for three years or, among other exceptions, the board of directors has approved the transaction.

Our amended and restated bylaws designate the Court of Chancery of the State of Delaware as the sole and exclusive forum for certain actions and proceedings that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or other employees.

Our amended and restated bylaws provide that, unless we consent in writing to an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of a fiduciary duty owed by any director, officer or other employee to us or our stockholders, (iii) any action asserting a claim arising pursuant to any provision of the Delaware General Corporation Law, (iv) any action asserting a claim that is governed by the internal affairs doctrine or (v) any action to interpret, apply, enforce or determine the validity of our certificate of incorporation or bylaws. Any person purchasing or otherwise acquiring any interest in any shares of our capital stock shall be deemed to have notice of and to have consented to this provision of our amended and restated bylaws. This choice-of-forum provision may limit our stockholders' ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees, which may discourage such lawsuits.

Alternatively, if a court were to find this provision of our amended and restated bylaws inapplicable or unenforceable with respect to one or more of the specified types of actions or proceedings, we may incur additional costs associated with resolving such matters in other jurisdictions, which could harm our business and financial condition.

We do not intend to pay dividends on our common stock, and your ability to achieve a return on your investment will depend on appreciation in the market price of our common stock.

We currently intend to invest our future earnings, if any, to fund our growth and not to pay any cash dividends on our common stock. Because we do not intend to pay dividends, your ability to receive a return on your investment will depend on any future appreciation in the market price of our common stock. We cannot be certain that our common stock will appreciate in price.

Our principal stockholders own a significant percentage of our stock and will be able to exert significant control over matters subject to stockholder approval.

As of December 1, 2016, our executive officers, directors, holders of 5% or more of our capital stock and their respective affiliates beneficially owned in the aggregate approximately 58.6% of our outstanding shares of common stock. As a result of their stock ownership, these stockholders may have the ability to influence our management and policies, and will be able to significantly affect the outcome of matters requiring stockholder approval such as elections of directors, amendments of our organizational documents or approvals of any merger, sale of assets or other major corporate transaction. This may prevent or discourage unsolicited acquisition proposals or offers for our common stock that you may feel are in your best interest as one of our stockholders.

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The requirements of being a public company, including compliance with the reporting requirements of the Exchange Act and the requirements of the Sarbanes-Oxley Act, may strain our resources, increase our costs and distract management, and we may be unable to comply with these requirements in a timely or cost-effective manner.

Our initial public offering had a significant, transformative effect on us. Prior to our initial public offering, our business operated as a privately-held company, and we were not required to comply with public reporting, corporate governance and financial accounting practices and policies required of a publicly-traded company. As a publicly-traded company, we incur significant additional legal, accounting and other expenses compared to historical levels. In addition, new and changing laws, regulations and standards relating to corporate governance and public disclosure, including the Dodd-Frank Wall Street Reform and Consumer Protection Act and the rules and regulations thereunder, as well as under the Sarbanes-Oxley Act, the JOBS Act and the rules and regulations of the SEC and The NASDAQ Capital Market, may result in an increase in our costs and the time that our board of directors and management must devote to our compliance with these rules and regulations. These rules and regulations have substantially increased our legal and financial compliance costs and diverted management time and attention from our product development and other business activities.

The Sarbanes-Oxley Act requires, among other things, that we assess the effectiveness of our internal control over financial reporting annually and the effectiveness of our disclosure controls and procedures quarterly. In particular, Section 404 of the Sarbanes-Oxley Act, or Section 404, requires us to perform system and process evaluation and testing of our internal control over financial reporting to allow management to report on, and our independent registered public accounting firm potentially to attest to, the effectiveness of our internal control over financial reporting. We have needed to expend time and resources on documenting our internal control over financial reporting so that we are in a position to perform such evaluation when required. As an "emerging growth company," we expect to avail ourselves of the exemption from the requirement that our independent registered public accounting firm attest to the effectiveness of our internal control over financial reporting under Section 404. However, we may no longer avail ourselves of this exemption when we cease to be an "emerging growth company." When our independent registered public accounting firm is required to undertake an assessment of our internal control over financial reporting, the cost of our compliance with Section 404 will correspondingly increase. Our compliance with applicable provisions of Section 404 requires that we incur substantial accounting expense and expend significant management time on compliance-related issues as we implement additional corporate governance practices and comply with reporting requirements. Moreover, if we are not able to comply with the requirements of Section 404 applicable to us in a timely manner, or if we or our independent registered public accounting firm identifies deficiencies in our internal control over financial reporting that are deemed to be material weaknesses, the market price of our stock could decline and we could be subject to sanctions or investigations by the SEC or other regulatory authorities, which would require additional financial and management resources.

We are an "emerging growth company" and we cannot be certain if the reduced disclosure requirements applicable to "emerging growth companies" will make our common stock less attractive to investors.

We are an "emerging growth company," as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, and we may take advantage of certain exemptions and relief from various reporting requirements that are applicable to other public companies that are not "emerging growth companies." In particular, while we are an "emerging growth company" (i) we will not be required to comply with the auditor attestation requirements of Section 404(b) of the Sarbanes-Oxley Act, (ii) we will be subject to reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements and (iii) we will not be required to hold nonbinding advisory votes on executive compensation or stockholder approval of any golden parachute payments not previously

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approved. In addition, the JOBS Act provides that an emerging growth company can delay its adoption of any new or revised accounting standards, but we have irrevocably elected not to avail ourselves of this exemption and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies. In addition, investors may find our common stock less attractive if we rely on the exemptions and relief granted by the JOBS Act. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may decline and/or become more volatile.

We may remain an "emerging growth company" until as late as December 31, 2020 (the fiscal year-end following the fifth anniversary of the closing of our initial public offering, which occurred on May 18, 2015), although we may cease to be an "emerging growth company" earlier under certain circumstances, including (i) if the market value of our common stock that is held by non-affiliates exceeds \$700.0 million as of any June 30, in which case we would cease to be an "emerging growth company" as of December 31 of such year, (ii) if our gross revenue exceeds \$1.0 billion in any fiscal year or (iii) if we issue more than \$1.0 billion of non-convertible debt over a three-year period.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference into it contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act). We have made these statements in reliance on the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. All statements other than statements of historical facts contained in or incorporated by reference into this prospectus, including statements regarding our future results of operations and financial position, business strategy, prospective products, product approvals, research and development costs, timing of receipt of clinical trial, field study and other study data, and likelihood of success, commercialization plans and timing, other plans and objectives of management for future operations, and future results of current and anticipated products are forward-looking statements. These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements.

In some cases, you can identify forward-looking statements by terms such as "may," "will," "should," "expect," "plan," "aim," "anticipate," "could," "intend," "target," "project," "contemplate," "believe," "estimate," "predict," "potential" or "continue" or the negative of these terms or other similar expressions. The forward-looking statements in this prospectus are only predictions. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. These forward-looking statements speak only as of the date of this prospectus and are subject to a number of risks, uncertainties and assumptions described under the section in this prospectus titled "Risk Factors" and elsewhere in this prospectus. Forward-looking statements are subject to inherent risks and uncertainties, some of which cannot be predicted or quantified and some of which are beyond our control. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Moreover, we operate in a dynamic industry and economy. New risk factors and uncertainties may emerge from time to time, and it is not possible for management to predict all risk factors and uncertainties that we may face. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances or otherwise.

INDUSTRY DATA

Unless otherwise indicated, information contained in this prospectus concerning our industry and the markets in which we operate, including our general expectations and market position, market opportunity and market share, is based on information from our own management estimates and research, as well as from industry and general publications and research, surveys and studies conducted by third parties. Management estimates are derived from publicly available information, our knowledge of our industry and assumptions based on such information and knowledge, which we believe to be reasonable. In addition, assumptions and estimates of our and our industry's future performance are necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described in "Risk Factors." These and other factors could cause our future performance to differ materially from our assumptions and estimates. See "Special Note Regarding Forward-Looking Statements."

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USE OF PROCEEDS

This prospectus relates to shares of our common stock that may be offered and sold from time to time by the selling stockholders. We will not receive any proceeds upon the sale of shares by the selling stockholders.

A portion of the shares covered by this prospectus are issuable upon the exercise of warrants to purchase shares of our common stock. The terms of the warrants provide that they may be exercised on a cashless basis if, at any time after May 29, 2017, the shares of common stock underlying the warrants are not subject to a registration statement or there has been a failure to maintain the effective registration of such shares. We will not receive any cash proceeds as a result of a warrant that is exercised on a cashless basis pursuant to the terms of such warrant. Upon any exercise for cash of the warrants, the selling stockholders will pay us the exercise price of the warrants of \$0.75 per share, with respect to the Series A Warrants, \$0.90 per share, with respect to the Series B Warrants and \$1.00 per share, with respect to the Series C Warrants. If the selling stockholders exercise, on a cash basis, all of the warrants underlying the shares being registered, we would receive gross proceeds of approximately \$4.4 million. We intend to use such proceeds, if any, for working capital and general corporate purposes. Pending our use of such proceeds, we intend to invest the net proceeds in a variety of capital preservation investments, including short-term, investment grade, interest bearing instruments and U.S. government securities. The exercise price and number of shares of common stock issuable upon exercise of the warrants may be adjusted in certain circumstances, including subdivisions and stock splits, stock dividends, combinations, reorganizations, reclassifications, consolidations, mergers or sales of properties and assets and upon the issuance of certain assets or securities to holders of our common stock, as applicable.

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DESCRIPTION OF CAPITAL STOCK

General

The following is a summary of the rights of our common stock and preferred stock and of certain provisions of our second amended and restated certificate of incorporation and amended and restated bylaws. This summary is not complete. For more detailed information, please see the second amended and restated certificate of incorporation and amended and restated bylaws which are filed as exhibits to the registration statement of which this prospectus is a part.

Our authorized capital stock consists of 60,000,000 shares, all with a par value of \$0.0001 per share, of which 50,000,000 shares are designated as common stock and 10,000,000 shares are designated as preferred stock.

Warrants to purchase an aggregate of 5,968,876 shares of common stock (including the 2016 Warrants), if not exercised, will remain outstanding upon the closing of the offering.

Common Stock

As of December 1, 2016, we had 14,007,132 share of common stock outstanding and zero shares of preferred stock outstanding.

As of December 1, 2016, we had 30 record holders of common stock.

As of December 1, 2016, there were outstanding options to purchase 2,426,596 shares of common stock with a weighted-average exercise price of \$2.60 per share and outstanding RSUs for 20,789 shares of common stock.

Voting Rights

The holders of our common stock are entitled to one vote per share on all matters to be voted on by our stockholders. Subject to preferences that may be applicable to any outstanding shares of preferred stock, holders of common stock are entitled to receive ratably such dividends as may be declared by our board of directors out of funds legally available for that purpose. In the event of our liquidation, dissolution or winding up, the holders of common stock are entitled to share ratably in all assets remaining after the payment of liabilities, subject to the prior distribution rights of preferred stock then outstanding. Holders of common stock have no preemptive, conversion or subscription rights. There are no redemption or sinking fund provisions applicable to the common stock.

Dividends

Subject to preferences that may be applicable to any outstanding preferred stock, holders of common stock are entitled to receive dividends, if any, as may be declared from time to time by our board of directors out of legally available funds.

Liquidation

In the event of our liquidation, dissolution or winding up, holders of common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities and the satisfaction of any liquidation preference granted to the holders of any then outstanding shares of preferred stock.

Rights and Preferences

Holders of common stock have no preemptive, conversion, subscription or other rights, and there are no redemption or sinking fund provisions applicable to the common stock. The rights, preferences

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and privileges of the holders of common stock are subject to and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate in the future.

Fully Paid and Nonassessable

All of our outstanding shares of common stock are, and the shares of common stock to be issued pursuant to this offering, when paid for, will be fully paid and nonassessable.

Preferred Stock

Our board of directors has the authority, without further action by our stockholders, to issue up to 10,000,000 shares of preferred stock in one or more series and to fix the number, rights, preferences, privileges and restrictions thereof. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences and sinking fund terms, and the number of shares constituting any series or the designation of such series, any or all of which may be greater than the rights of common stock. The issuance of our preferred stock could adversely affect the voting power of holders of common stock and the likelihood that such holders will receive dividend payments and payments upon liquidation. In addition, the issuance of preferred stock could have the effect of delaying, deferring or preventing a change of control or other corporate action. We have no current plan to issue any shares of preferred stock.

Warrants

As of December 1, 2016, we had outstanding warrants to purchase an aggregate of 5,968,876 shares of common stock, 207,664 of which are exercisable at a price of \$2.53 per share, and expire on February 5, 2019; 16,666 of which are exercisable at a price of \$6.30 per share, and expire June 26, 2019; 178,569 of which are exercisable at a price of \$5.60 per share and expire June 3, 2020; 58,035 of which are exercisable at a price of \$5.60 per share and expire December 31, 2017; 111,605 of which are exercisable at a price of \$5.60 per share and expire December 31, 2017; 143,000 of which are exercisable at a price of \$8.75 per share, and expire on May 13, 2020; 120,000 of which are exerciseableat a price of \$0.01 per share and expire on or before July 28, 2022; 1,800,001 of which are exercisable at a price of \$0.75 per share, and expire on May 29, 2022; 1,666,668 of which are exercisable at a price of \$0.90 per share, and expire on November 29, 2017; and 1,666,668 of which are exercise at a price of \$1.00 per share, and expire on May 29, 2018. These warrants, if not exercised, will remain outstanding following the closing of this offering.

Registration Rights of the Investors in the 2016 Private Placement

Concurrently with entering into the 2016 Purchase Agreement, we also entered into the Registration Rights Agreement, in which we agreed to file one or more registration statements as permissible and necessary to register under the Securities Act, the resale of the shares of our common stock sold to the investors in the 2016 Private Placement pursuant to the 2016 Purchase Agreement and the shares of common stock underlying the 2016 Warrants. This registration statement is being registered pursuant to the Registration Rights Agreement.

Anti-Takeover Effects of Delaware Law and Our Second Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws

Delaware Law

Certain provisions of Delaware law and our second amended and restated certificate of incorporation and amended and restated bylaws contain provisions that could have the effect of delaying, deferring or discouraging another party from acquiring control of us. These provisions, which are summarized below, are expected to discourage certain types of coercive takeover practices and

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inadequate takeover bids. These provisions are also designed in part to encourage anyone seeking to acquire control of us to negotiate with our board of directors. We believe that the advantages gained by protecting our ability to negotiate with any unsolicited and potentially unfriendly acquirer outweigh the disadvantages of discouraging such proposals, including those priced above the then-current market value of our common stock, because, among other reasons, the negotiation of such proposals could improve their terms.

Second Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws

Our second amended and restated certificate of incorporation and amended and restated bylaws include provisions that:

require that any action to be taken by our stockholders be effected at a duly called annual or special meeting and not by written consent;

specify that special meetings of our stockholders can be called only by our board of directors, the chairman of our board of directors, the chief executive officer or the president;

establish an advance notice procedure for stockholder approvals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors;

provide that directors may be removed only for cause;

provide that vacancies on our board of directors may be filled only by a majority of directors then in office, even though less than a quorum;

establish that our board of directors is divided into three classes, Class I, Class II and Class III, with each class serving staggered terms;

specify that no stockholder is permitted to cumulate votes at any election of our board of directors; and

require approval of the stockholders of at least 75% of the shares and a majority of the board of directors to amend certain of the above-mentioned provisions.

Exclusive Jurisdiction

Under the provisions of our second amended and restated certificate of incorporation, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for: (i) any derivative action or proceeding brought on behalf of us; (ii) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers or other employees or agents to us or our stockholders; (iii) any action asserting a claim against us arising pursuant to any provision of the Delaware General Corporation Law or our amended and restated certificate of incorporation or amended and restated bylaws; or (iv) any action asserting a claim against us governed by the internal affairs doctrine. The enforceability of similar choice of forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that, in connection with any action, a court could find the choice of forum provisions contained in our amended and restated certificate of incorporation to be inapplicable or unenforceable in such action.

Delaware Anti-Takeover Statute

We are subject to the provisions of Section 203 of the Delaware General Corporation Law regulating corporate takeovers. In general, Section 203 prohibits a publicly-held Delaware corporation

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from engaging, under certain circumstances, in a business combination with an interested stockholder for a period of three years following the date the person became an interested stockholder unless:

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

upon the closing of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding, but not for determining the outstanding voting stock owned by the interested stockholder, (1) shares owned by persons who are directors and also officers, and (2) shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or

at or subsequent to the date of the transaction, the business combination is approved by our board of directors of the corporation and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66²/₃% of the outstanding voting stock which is not owned by the interested stockholder.

Generally, a business combination includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. An interested stockholder is a person who, together with affiliates and associates, owns or, within three years prior to the determination of interested stockholder status, did own 15% or more of a corporation's outstanding voting stock. We expect the existence of this provision to have an anti-takeover effect with respect to transactions our board of directors does not approve in advance. We also anticipate that Section 203 may discourage business combinations or other attempts that might result in the payment of a premium over the market price for the shares of common stock held by our stockholders.

The provisions of Delaware law and our second amended and restated certificate of incorporation and amended and restated bylaws could have the effect of discouraging others from attempting hostile takeovers and, as a consequence, they may also inhibit temporary fluctuations in the market price of our common stock that often result from actual or rumored takeover attempts. These provisions may also have the effect of preventing changes in our management. It is possible that these provisions could make it more difficult to accomplish transactions that stockholders may otherwise deem to be in their best interests.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Computershare Trust Company N.A. The transfer agent and registrar's address is 250 Royall St., Canton, MA 02021. The transfer agent's telephone number is (800) 962-4284.

Listing

Our common stock is listed on The NASDAQ Capital Market under the symbol "JAGX." On August 22, 2016, we received notice from NASDAQ, which indicated that under NASDAQ Listing Rule 5550(b)(1), we are required to maintain a minimum of \$2,500,000 in stockholders' equity for continued listing. In our Form 10-Q for the period ended September 30, 2016, we reported stockholders' deficit of \$273,036. Based on the plan submitted by the Company to regain compliance, the SEC granted the Company an extension until February 21, 2017 to regain compliance.

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2016 PRIVATE PLACEMENT OF COMMON STOCK AND WARRANTS

On November 22, 2016, we entered into the 2016 Purchase Agreement with certain institutional investors, pursuant to which we sold securities to such investors in a private placement transaction, which we refer to herein as the 2016 Private Placement. In the 2016 Private Placement, we sold an aggregate of 1,666,668 shares of our common stock at a price of \$0.60 per share for gross proceeds of approximately \$1.0 million. The investors in the 2016 Private Placement also received (i) warrants to purchase up to an aggregate of 1,666,668 shares of our common stock, at an exercise price of \$0.75 per share, or the Series A Warrants, (ii) warrants to purchase up to an aggregate 1,666,668 shares of our common stock, at an exercise price of \$0.90 per share, or the Series B Warrants, and (iii) warrants to purchase up to an aggregate 1,666,668 shares of our common stock, at an exercise price of \$1.00 per share, or the Series C Warrants and, together with the Series A Warrants and the Series B Warrants, the 2016 Warrants. The 2016 Warrants are not exercisable until six months after the date of issuance. From that initial exercisable date, the Series A Warrants will have a term of 5 years, the Series B Warrants will have a term of 6 months, and the Series C Warrants will have a term of 1 year. The terms of the 2016 Warrants provide that they may be exercised on a cashless basis if, at any time after May 29, 2017, the shares of common stock underlying the 2016 Warrants are not subject to a registration statement or there has been a failure to maintain the effective registration of such shares. We will not receive any cash proceeds as a result of a 2016 Warrant that is exercised on a cashless basis pursuant to the terms of such warrant.

On November 22, 2016, we also entered into a Registration Rights Agreement with the investors in the 2016 Private Placement, pursuant to which we are required to file a registration statement on Form S-1 within 10 business days of November 22, 2016 to cover the resale of the shares of common stock sold to such investors pursuant to the 2016 Purchase Agreement and the shares of common stock underlying the 2016 Warrants. Our failure to satisfy certain deadlines described in the Registration Rights Agreement may subject us to payment of certain monetary penalties.

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SELLING STOCKHOLDERS

The common stock being offered by the selling stockholders are those previously issued to the selling stockholders, and those issuable to the selling stockholders, upon exercise of the warrants. For additional information regarding the issuances of those shares of common stock and warrants, see "Prospectus Summary 2016 Private Placement of Common Stock and Warrants" above. We are registering the shares of common stock in order to permit the selling stockholders to offer the shares for resale from time to time. Except for the ownership of the shares of common stock and the warrants, the selling stockholders have not had any material relationship with us within the past three years.

The table below lists the selling stockholders and other information regarding the beneficial ownership of the shares of common stock by each of the selling stockholders. The second column lists the number of shares of common stock beneficially owned by each selling stockholders, based on its ownership of the shares of common stock and warrants, as of December 1, 2016, assuming exercise of the warrants held by the selling stockholders on that date, without regard to any limitations on exercises.

The third column lists the shares of common stock being offered by this prospectus by the selling stockholders.

In accordance with the terms of a registration rights agreement with the selling stockholders, this prospectus generally covers the resale of the sum of (i) the number of shares of common stock issued to the selling stockholders in the 2016 Private Placement and (ii) the maximum number of shares of common stock issuable upon exercise of the related warrants, determined as if the outstanding warrants were exercised in full as of the trading day immediately preceding the date this registration statement was initially filed with the SEC, each as of the trading day immediately preceding the applicable date of determination and all subject to adjustment as provided in the registration right agreement, without regard to any limitations on the exercise of the warrants. The fourth column assumes the sale of all of the shares offered by the selling stockholders pursuant to this prospectus.

Under the terms of the warrants, a selling stockholder may not exercise the warrants to the extent such exercise would cause such selling stockholder, together with its affiliates and attribution parties, to beneficially own a number of shares of common stock which would exceed 4.99% of our then outstanding common stock following such exercise, excluding for purposes of such determination shares of common stock issuable upon exercise of the warrants which have not been exercised. The number of shares in the second column does not reflect this limitation. The selling stockholders may sell all, some or none of their shares in this offering. See "Plan of Distribution."

To our knowledge, none of the selling stockholders is a broker-dealer. Other than Intracoastal Capital LLC, or Intracoastal, none of the selling stockholders is an affiliate of a broker-dealer. Intracoastal has certified to us that it bought the shares of common stock being registered for its own

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account, and at the time of purchase, it had no agreements or understandings, directly or indirectly, with any person to distribute the shares being registered.

	Number of shares of Common Stock Maximum Number of shares of Common Stock to be Sold		Common Stock Owned After Offering(1)	
Name of Selling Stockholder	Owned Prior to Offering	Pursuant to this Prospectus(1)	Number of Shares	Percent (%)
Brio Capital Master Fund Ltd.(2)	1,333,336	1,333,336	01 Shares	*
Anson Investments Master Fund LP(3)	1,166,668	1,166,668	0	*
Intracoastal Capital, LLC(4)	900,000	900,000	0	*
Iroquois Master Fund Ltd.(5)	666,668	666,668	0	*
Iroquois Capital Investment Group LLC(6)	333,332	333,332	0	*
M. Kingdon Offshore Master Fund L.P.(7)(8)	1,192,920	635,336	557,584	3.98%
Kingdon Associates(7)(9)	774,070	406,000	368,070	2.63%
Kingdon Family Partnership. L.P.(7)(10)	174,988	92,000	82,988	*
Empery Asset Master, Ltd.(11)(12)	335,616	335,616	0	*
Empery Tax Efficient II, LP(11)(13)	275,008	275,008	0	*
Empery Tax Efficient, LP(11)(14)	189,376	189,376	0	*
L1 Capital Global Opportunities Master Fund(15)	333,332	333,332	0	*

Less than 1%.

- We do not know when or in what amounts the selling stockholders may offer shares for sale. The selling stockholders might not sell a portion or all of the shares offered by this prospectus. Because the selling stockholders may offer all or some of the shares pursuant to this offering, we cannot estimate the number of the shares that will be held by the selling stockholders after completion of the offering. However, for purposes of this table, we have assumed (i) the exercise for cash of all warrants to purchase common stock offered in this prospectus held by the selling stockholders, (ii) that, after completion of the offering, none of the shares covered by this prospectus will be held by the selling stockholders, and (iii) that, all of the shares not covered by this prospectus will be held by the selling stockholders.
- Number of shares offered hereby consists of (i) 333,334 shares issued in the 2016 Private Placement and (ii) up to 1,000,002 shares issuable upon exercise of the 2016 Warrants issued in the 2016 Private Placement. Shaye Hirsch has authority to vote and dispose of the shares held by Brio Capital Master Fund Ltd., or Brio, and may be deemed the beneficial owner of such shares.
- Number of shares offered hereby consists of (i) 291,667 shares issued in the 2016 Private Placement and (ii) up to 875,001 shares issuable upon exercise of the 2016 Warrants issued in the 2016 Private Placement. Anson Advisors Inc. and Anson Funds Management LP, the co-investment advisers of Anson Investments Master Fund LP, or Anson, hold voting and dispositive power over the shares held by Anson. Bruce Winson is the managing member of Anson Management GP LLC, which is the general partner of Anson Funds Management LP. Moez Kassam and Adam Spears are directors of Andson Advisors Inc. Mr. Winson, Mr. Kassam and Mr. Spears each disclaim beneficial ownership of these shares except to the extent of their pecuniary interest therein.
- Number of shares offered hereby consists of (i) 225,000 shares issued in the 2016 Private Placement and (ii) up to 675,000 shares issuable upon exercise of the 2016 Warrants issued in the 2016 Private Placement. Mitchell P. Kopin, or Mr. Kopin, and Daniel B. Asher, Mr. Asher, each of whom are managers of Intracoastal, have shared voting control and investment discretion over the securities reported herein that are held by Intracoastal. As a result, each of Mr. Kopin and Mr. Asher may be deemed to have beneficial ownership (as determined under Section 13(d) of the

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Exchange Act) of the securities reported herein that are held by Intracoastal. Mr. Asher, who is a manager of Intracoastal, is also a control person of a broker-dealer. As a result of such common control, Intracoastal may be deemed to be an affiliate of a broker-dealer. Intracoastal acquired the ordinary shares being registered hereunder in the ordinary course of business, and at the time of the acquisition of the ordinary shares and warrants described herein, Intracoastal did not have any arrangements or understandings with any person to distribute such securities.

- (5)

 Number of shares offered hereby consists of (i) 166,667 shares issued in the 2016 Private Placement and (ii) up to 500,001 shares issuable upon exercise of the 2016 Warrants issued in the 2016 Private Placement.
- (6) Number of shares offered hereby consists of (i) 83,333 shares issued in the 2016 Private Placement and (ii) up to 249,999 shares issuable upon exercise of the 2016 Warrants issued in the 2016 Private Placement.
- Kingdon Capital Management, L.L.C., a Delaware limited liability company, or Kingdon Capital Management, serves as investment manager to each of M. Kingdon Offshore Master Fund L.P., a Cayman Islands exempted limited partnership, Kingdon Associates, a New York limited partnership, and Kingdon Family Partnership, L.P., a New York limited partnership. In such capacity, Kingdon Capital Management may be deemed to have voting and discretionary power over the shares held by each of these funds. Mark Kingdon is the managing member of Kingdon Capital Management.
- Number of shares offered hereby consists of (i) 158,834 shares issued in the 2016 Private Placement and (ii) up to 476,502 shares issuable upon exercise of the 2016 Warrants issued in the 2016 Private Placement. Number of shares beneficially owned prior to the offering also includes 557,584 shares.
- (9)

 Number of shares offered hereby consists of (i) 101,500 shares issued in the 2016 Private Placement and (ii) up to 304,500 shares issuable upon exercise of the 2016 Warrants issued in the 2016 Private Placement. Number of shares beneficially owned prior to the offering also includes 368,070 shares.
- (10)

 Number of shares offered hereby consists of (i) 23,000 shares issued in the 2016 Private Placement and (ii) up to 69,000 shares issuable upon exercise of the 2016 Warrants issued in the 2016 Private Placement. Number of shares beneficially owned prior to the offering also includes 82,988 shares.
- Empery Asset Management LP, the authorized agent of Empery Asset Master Ltd, or EAM, Empery Tax Efficient, LP, or ETE and Empery Tax Efficient II, LP, or ETE II, and together with EAM and ETE, the Empery Funds, has discretionary authority to vote and dispose of the shares held by each of the Empery Funds and may be deemed to be the beneficial owner of these shares. Martin Hoe and Ryan Lane, in their capacity as investment managers of Empery Asset Management LP, may also be deemed to have investment discretion and voting power over the shares held by each of the Empery Funds. Each of the Empery Funds, Mr. Hoe and Mr. Lane each disclaim any beneficial ownership of these shares.
- (12) Number of shares offered hereby consists of (i) 83,904 shares issued in the 2016 Private Placement and (ii) up to 251,712 shares issuable upon exercise of the 2016 Warrants issued in the 2016 Private Placement.
- Number of shares offered hereby consists of (i) 68,752 shares issued in the 2016 Private Placement and (ii) up to 206,256 shares issuable upon exercise of the 2016 Warrants issued in the 2016 Private Placement.
- Number of shares offered hereby consists of (i) 47,344 shares issued in the 2016 Private Placement and (ii) up to 142,032 shares issuable upon exercise of the 2016 Warrants issued in the 2016 Private Placement.
- Number of shares offered hereby consists of (i) 83,333 shares issued in the 2016 Private Placement and (ii) up to 249,999 shares issuable upon exercise of the 2016 Warrants issued in the 2016 Private Placement.

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PLAN OF DISTRIBUTION

Each selling stockholder, or collectively, the Selling Stockholders, of the securities and any of their pledgees, assignees and successors-in-interest may, from time to time, sell any or all of their securities covered hereby on the principal trading market or any other stock exchange, market or trading facility on which the securities are traded or in private transactions. These sales may be at fixed or negotiated prices. A Selling Stockholder may use any one or more of the following methods when selling securities:

ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;

block trades in which the broker-dealer will attempt to sell the securities as agent but may position and resell a portion of the block as principal to facilitate the transaction;

purchases by a broker-dealer as principal and resale by the broker-dealer for its account;

an exchange distribution in accordance with the rules of the applicable exchange;

privately negotiated transactions;

settlement of short sales;

in transactions through broker-dealers that agree with the Selling Stockholders to sell a specified number of such securities at a stipulated price per security;

through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;

a combination of any such methods of sale; or

any other method permitted pursuant to applicable law.

The Selling Stockholders may also sell securities under Rule 144 or any other exemption from registration under the Securities Act, if available, rather than under this prospectus.

Broker-dealers engaged by the Selling Stockholders may arrange for other brokers-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the Selling Stockholders (or, if any broker-dealer acts as agent for the purchaser of securities, from the purchaser) in amounts to be negotiated, but, except as set forth in a supplement to this Prospectus, in the case of an agency transaction not in excess of a customary brokerage commission in compliance with FINRA Rule 2440; and in the case of a principal transaction a markup or markdown in compliance with FINRA IM-2440.

In connection with the sale of the securities or interests therein, the Selling Stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the securities in the course of hedging the positions they assume. The Selling Stockholders may also sell securities short and deliver these securities to close out their short positions, or loan or pledge the securities to broker-dealers that in turn may sell these securities. The Selling Stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or create one or more derivative securities which require the delivery to such broker-dealer or other financial institution of securities offered by this prospectus, which securities such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The Selling Stockholders and any broker-dealers or agents that are involved in selling the securities may be deemed to be "underwriters" within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of the securities purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Each Selling Stockholder has informed the Company that it does not have

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any written or oral agreement or understanding, directly or indirectly, with any person to distribute the securities.

The Company is required to pay certain fees and expenses incurred by the Company incident to the registration of the securities. The Company has agreed to indemnify the Selling Stockholders against certain losses, claims, damages and liabilities, including liabilities under the Securities Act.

We agreed to keep this prospectus effective until the earlier of (i) the date on which the securities may be resold by the Selling Stockholders without registration and without regard to any volume or manner-of-sale limitations by reason of Rule 144, without the requirement for the Company to be in compliance with the current public information under Rule 144 under the Securities Act or any other rule of similar effect or (ii) all of the securities have been sold pursuant to this prospectus or Rule 144 under the Securities Act or any other rule of similar effect. The resale securities will be sold only through registered or licensed brokers or dealers if required under applicable state securities laws. In addition, in certain states, the resale securities covered hereby may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

Under applicable rules and regulations under the Exchange Act, any person engaged in the distribution of the resale securities may not simultaneously engage in market making activities with respect to the common stock for the applicable restricted period, as defined in Regulation M, prior to the commencement of the distribution. In addition, the Selling Stockholders will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including Regulation M, which may limit the timing of purchases and sales of the common stock by the Selling Stockholders or any other person. We will make copies of this prospectus available to the Selling Stockholders and have informed them of the need to deliver a copy of this prospectus to each purchaser at or prior to the time of the sale (including by compliance with Rule 172 under the Securities Act).

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LEGAL MATTERS

The validity of the securities being offered by this prospectus will be passed upon for us by Reed Smith LLP, San Francisco, California.

EXPERTS

The financial statements as of December 31, 2014 and 2015 and for each of the two years in the period ended December 31, 2015 incorporated by reference in this prospectus and the Registration Statement have been so included in reliance on the reports of BDO USA, LLP, an independent registered public accounting firm (the reports on the financial statements contains an explanatory paragraph regarding the Company's ability to continue as a going concern), incorporated herein by reference, given on the authority of said firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC under the Securities Act a registration statement on Form S-1 with respect to the common stock offered by the selling stockholders. This prospectus, which constitutes part of the registration statement, does not contain all the information set forth in the registration statement or the exhibits and schedules which are part of the registration statement, portions of which are omitted as permitted by the rules and regulations of the SEC. Statements made in this prospectus regarding the contents of any contract or other document are summaries of the material terms of the contract or document. With respect to each contract or document filed as an exhibit to the registration statement, please see the copy of the contract or document that has been filed. For further information pertaining to us and the common stock offered by this prospectus, reference is made to the registration statement, including the exhibits and schedules thereto, copies of which may be inspected without charge at the public reference facilities of the SEC at 100 F Street, N.E., Room 1580, Washington, D.C. 20549, as may the other reports, statements and information we file with the SEC. Copies of all or any portion of the registration statement may be obtained from the SEC at prescribed rates. Information on the public reference facilities may be obtained by calling the SEC at 1-800-SEC-0330. In addition, the SEC maintains a website that contains reports, proxy and information statements and other information that is filed through the SEC's EDGAR System. The website can be accessed at www.sec.gov.

We are subject to the information and reporting requirements of the Exchange Act and, in accordance with this law, file periodic reports, proxy statements and other information with the SEC. These periodic reports, proxy statements, and other information are available for inspection and copying at the SEC's public reference facilities and the website of the SEC referred to above. We also maintain a website at www.jaguaranimalhealth.com. You may access our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act with the SEC free of charge at our website as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. The information contained in, or that can be accessed through, our website is not incorporated by reference into this prospectus.

INFORMATION INCORPORATED BY REFERENCE

The SEC allows us to 'incorporate by reference' the information we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus. We incorporate by reference the documents listed below:

Our Annual Report on Form 10-K for the fiscal year ended December 31, 2015, which we filed with the SEC on March 29, 2016;

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Our definitive proxy statement, and definitive additional materials, on Schedule 14A, which we filed with the SEC on April 29, 2016;

Our Quarterly Reports on Form 10-Q for the fiscal quarters ended March 31, 2016 and June 30, 2016, which we filed with the SEC on May 10, 2016 and August 15, 2016, respectively, and for the fiscal quarter ended September 30, 2016, which we filed on November 14, 2016, as subsequently revised or supplemented on Form 10-Q/A on December 5, 2016;

Our Current Reports on Form 8-K filed with the SEC on April 6, 2016, April 27, 2016, May 3, 2016, June 9, 2016, June 20, 2016, June 21, 2016, August 23, 2016, September 7, 2016, October 6, 2016, November 29, 2016, and December 15, 2016; and

The description of our common stock contained in our registration statement on Form 8-A filed on October 30, 2014 (Registration No. 001-36714) with the SEC, including any amendment or report filed for the purpose of updating such description.

We also incorporate by reference all documents that we subsequently file with the SEC pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act (i) after the date of the initial registration statement of which this prospectus forms a part and prior to the effectiveness of such registration statement and (ii) after the date of this prospectus and prior to the termination of this offering, unless we specifically provide otherwise in each case, (excluding any information furnished and not filed with the SEC). Information that we file with the SEC will automatically update and may replace information previously filed with the SEC.

We will provide without charge to each person, including any beneficial owner, to whom this prospectus is delivered, upon his or her written or oral request, a copy of any or all documents referred to above which have been or may be incorporated by reference into this prospectus but not delivered with this prospectus excluding exhibits to those documents unless they are specifically incorporated by reference into those documents. You can request those documents from us, at no cost, by writing or telephoning us at: Investor Relations, Jaguar Animal Health, Inc., 201 Mission Street, Suite 2375, San Francisco, California, 94105; (415)-371-8300.

You also may access the incorporated reports and other documents referenced above on our website at www.jaguaranimalhealth.com. The information contained on, or that can be accessed through, our website is not part of this prospectus.

Information furnished under Items 2.02 or 7.01 (or corresponding information furnished under Item 9.01 or included as an exhibit) in any past or future Current Report on Form 8-K that we file with the SEC, unless otherwise specified in such report, is not incorporated by reference in this prospectus.

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6,666,672 Shares

Common Stock

PROSPECTUS

December 19, 2016