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

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AMENDMENT NO. 1 to  
**FORM S-1**  
REGISTRATION STATEMENT  
UNDER  
THE SECURITIES ACT OF 1933

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**JAGUAR ANIMAL HEALTH, INC.**

(Exact name of registrant as specified in its charter)

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**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

**2834**  
(Primary Standard Industrial  
Classification Code Number)

**46-2956775**  
(I.R.S. Employer  
Identification Number)

**201 Mission Street, Suite 2375  
San Francisco, California 94105  
(415) 371-8300**

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

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**Lisa A. Conte**  
**Chief Executive Officer and President**  
**Jaguar Animal Health, Inc.**  
**201 Mission Street, Suite 2375**  
**San Francisco, California 94105**  
**(415) 371-8300**

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

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**Copies to:**

**Donald C. Reinke, Esq.**  
Reed Smith LLP  
101 Second Street, Suite 1800  
San Francisco, California 94105  
(415) 543-8700

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

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933 check the following box:  x

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

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

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

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

Large accelerated filer  o

Accelerated filer  o

Non-accelerated filer  o

Smaller reporting company  x

(Do not check if a  
smaller reporting company)

**The Registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the registration statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.**

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## Explanatory Note

Jaguar Animal Health, Inc. is filing this pre-effective Amendment No. 1, or Amendment, to the Registration Statement on Form S-1 (File No. 333-212173), or the Registration Statement, for the purpose of filing certain exhibits as indicated in Part II of this Amendment. Accordingly, this Amendment consists only of the facing page, this explanatory note, Part II of the Registration Statement, the signature pages to the Registration Statement and the filed exhibits. The preliminary prospectus is unchanged and has been omitted.

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### Part II—INFORMATION NOT REQUIRED IN PROSPECTUS

#### ITEM 13. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION.

The following table sets forth an itemized statement of the expenses that are payable by us in connection with the registration and sale of the common stock described in this registration statement. With the exception of the SEC registration fee the amounts set forth below are estimates.

	Amount to be Paid
SEC registration fee	\$ 761.29
Accounting fees and expenses	15,000
Legal fees and expenses	25,000
Printing and related expenses	5,000
Transfer agent and registrar fees	5,000
Miscellaneous	5,238.71
Total	<u>\$ 56,000</u>

#### ITEM 14. INDEMNIFICATION OF DIRECTORS AND OFFICERS.

Section 102(b)(7) of the DGCL authorizes a corporation in its certificate of incorporation to eliminate or limit personal liability of directors of the corporation for violations of the directors' fiduciary duty of care. However, directors remain liable for breaches of duties of loyalty, failing to act in good faith, engaging in intentional misconduct, knowingly violating a law, paying a dividend or approving a stock repurchase which was illegal under DGCL Section 174 or obtaining an improper personal benefit. In addition, equitable remedies for breach of fiduciary duty of care, such as injunction or recession, are available.

Our current certificate of incorporation eliminates the personal liability of the members of our board of directors to the fullest extent permitted by the DGCL. Any repeal or modification of that provision by the stockholders of the corporation will not adversely affect any right or protection of a director of the corporation existing at the time of such repeal or modification.

Section 145 of the DGCL provides that a corporation has the power to indemnify a director, officer, employee or agent of the corporation, or a person serving at the request of the corporation for another corporation, partnership, joint venture, trust or other enterprise in related capacities against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with an action, suit or proceeding to which he was or is a party or is threatened to be made a party to any threatened, ending or completed action, suit or proceeding by reason of such position, if such person acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation, and, in any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful, except that, in the case of actions brought by or in the right of the corporation, no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or other adjudicating court determines that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

Our current bylaws provide for indemnification of our officers and directors to the fullest extent permitted by the DGCL.

We have entered into indemnification agreements with each of our directors, and intend to enter into such agreements with each of our officers prior to this offering, pursuant to which we agreed, to the maximum extent permitted by applicable law and subject to the specified terms and conditions set forth in each agreement, to indemnify a director or officer who acts on our behalf and is made or threatened to be made a party to any action or proceeding against expenses, judgments, fines and amounts paid in settlement that are incurred by such officer or director in connection with the action or proceeding. The indemnification provisions apply whether the action was instituted by a third party or by us.

We have purchased and maintain insurance on behalf of our officers and directors that provides coverage for expenses and liabilities incurred by them in their capacities as officers and directors.

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#### ITEM 15. RECENT SALES OF UNREGISTERED SECURITIES.

Since June 6, 2013 (inception), we have issued and sold the following securities without registration under the Securities Act. The information below includes the effect of a 1-for-1.5 reverse stock split of our common stock effected October 27, 2014.

- (1) In June 2013, pursuant to a founder stock purchase agreement, we issued 2,666,666 shares of common stock to Napo Pharmaceuticals, Inc. for \$400.
- (2) From July through September 2013, pursuant to a note and warrant purchase agreement dated July 8, 2013, we issued convertible promissory notes in the aggregate principal amount of \$525,000 and warrants to purchase 207,664 shares of common stock at an exercise

price of \$2.5281 per share, which warrants expire February 5, 2019, to four accredited investors. On February 4, 2014, these noteholders converted the notes in full for an aggregate of 207,664 shares of common stock.

- (3) In February 2014, we issued an aggregate of 2,224,991 shares of Series A preferred stock for aggregate gross proceeds of \$5.0 million to Kunlun Pharmaceuticals, Ltd., an accredited investor. At the closing of our initial public offering in May 2015, such shares of Series A preferred stock were automatically converted into 1,483,326 shares of common stock.
- (4) In April 2014, we granted stock options to purchase 713,700 shares of common stock under our 2013 Equity Incentive Plan, with an exercise price of \$2.54 per share to our executive officers and employees.
- (5) In April 2014, we issued 585,321 shares of Series A preferred stock for aggregate gross proceeds of \$1,315,337, to six accredited investors. At the closing of our initial public offering in May 2015, such shares of Series A preferred stock were automatically converted into 390,211 shares of common stock.
- (6) In May 2014, we issued an aggregate of 205,590 shares of Series A preferred stock for aggregate gross proceeds of \$462,002, to two accredited investors. At the closing of our initial public offering in May 2015, such shares of Series A preferred stock were automatically converted into 137,059 shares of common stock.
- (7) In June 2014, we granted stock options to purchase 39,410 shares of common stock under our 2013 Equity Incentive Plan, which options have an exercise price of \$4.83 per share to a member of our board of directors.
- (8) In June 2014, we granted 79,297 restricted stock unit awards under our 2013 Equity Incentive Plan to our executive officers and employees.
- (9) In June 2014, pursuant to a convertible note purchase agreement dated June 2, 2014, we issued convertible promissory notes in the aggregate principal amount of \$300,000, to two accredited investors. At the closing of our initial public offering in May 2015, the outstanding principal amount automatically converted into 53,571 shares common stock at \$5.60.
- (10) In June 2014, we issued a warrant to purchase 16,666 shares of common stock at an exercise price of \$6.30 per share (90% of the initial public offering price per share), to a contract manufacturer.
- (11) In July 2014, pursuant to a convertible note purchase agreement dated June 2, 2014, we issued a convertible promissory note in the aggregate principal amount of \$150,000, to an accredited investor. At the closing of our initial public offering in May 2015, the outstanding principal amount automatically converted into 26,785 shares of common stock at \$5.60.
- (12) In August 2014, we entered into a standby line of credit with an individual, who is an accredited investor, for up to \$1.0 million. Outstanding principal amounts borrowed under the standby line of credit may be converted, at the option of the lender, into shares of our common stock at a conversion price equal to 80% of the initial public offering price per share. In connection with the entry into the standby line of credit, we issued the lender a warrant to purchase 33,333 shares of our common stock at an exercise price of \$5.60 per share (80% of the initial public offering price per share), which expires in August 2016.

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- (13) In October 2014, we issued warrants to purchase that number of shares of common stock determined by dividing \$1.0 million by the initial public offering price with an exercise price equal to the initial public offering price per share, to two accredited investors in connection with the entry into a bridge financing arrangement. In December 2014, we amended and restated the bridge financing arrangement and exchanged the warrants for new warrants. The new warrants provide for the purchase of an aggregate of 178,570 shares of common stock and have an exercise price of \$5.60 per share.
- (14) In December 2014, pursuant to a convertible note and warrant purchase agreement dated December 23, 2014, we issued convertible promissory notes in the aggregate principal amount of \$650,000 to three accredited investors. At the closing of our initial public offering in May 2015, the noteholders converted the notes into 116,070 shares of common stock at a conversion price equal to 80% of the initial public offering price per share, amended to \$5.60 in March 2015. In connection therewith, we issued these accredited investors three-year warrants to purchase an aggregate of 58,035 shares of common stock and have an exercise price of \$5.60 per share.
- (15) In February 2015, pursuant to that certain convertible note and warrant purchase agreement dated December 23, 2014, we issued convertible promissory notes in the aggregate principal amount of \$250,000 to two accredited investors. At the closing of our initial public offering in May 2015, the noteholders converted the notes into 44,642 shares of common stock at \$5.60. In connection therewith, we issued these accredited investors three-year warrants to purchase an aggregate of 22,320 shares of common stock and have an exercise price of \$5.60 per share.
- (16) In February 2015, we granted 1,484 restricted stock unit awards under our 2013 Equity Incentive Plan to an executive officer, and approved the grant of stock options to purchase 203,030 shares of common stock under our 2013 Equity Incentive Plan, which grants are effective upon this offering with an exercise price equal to the initial public offering price to our executive officers and employees.
- (17) In March 2015, pursuant to a convertible note and warrant purchase agreement, we issued convertible promissory notes in the aggregate principal amount of \$1,000,000 to a commercial partner. At the closing of our initial public offering in May 2015, the noteholder converted the notes into 178,571 shares of common stock at \$5.60. In connection therewith, we also issued a warrant to purchase 89,285 shares of common stock at an exercise price of \$5.60 per share to this commercial partner, which expires December 31, 2017.
- (18) On June 8, 2016, we entered into the Common Stock Purchase Agreement with Aspire Capital Fund, LLC, or Aspire Capital, which provides that, upon the terms and subject to the conditions and limitations set forth in the agreement, Aspire Capital is committed to purchase up to an aggregate of \$15.0 million shares of our common stock, or the Purchase Shares, over the 30-month term of the agreement. Pursuant to the terms of this agreement, Aspire Capital purchased 222,222 shares of our common stock at \$2.25 per share and we issued 456,667 shares of our common stock to Aspire Capital in consideration for entering into the agreement. The Purchase Shares may be sold

by us to Aspire Capital on any business day we select in two ways: (i) through a regular purchase of up to 100,000 shares at a known price based on the market price of our common stock prior to the time of each sale, and (ii) through a VWAP purchase of a number of shares up to 30% of the volume traded on the purchase date at a price equal to the lesser of the closing sale price or 97% of the volume weighted average price for such purchase date.

The offers, sales, and issuances of the securities described in paragraphs (1)-(3), (5), (6), (9)-(15), (17) and (18) above were deemed to be exempt from registration under the Securities Act in reliance on Section 4(a)(2) of the Securities Act, Regulation D or Regulation S promulgated thereunder as transactions by an issuer not involving a public offering. The recipients of securities in each of these transactions acquired the securities for investment only and not with a view to or for sale in connection with any distribution thereof and appropriate legends were affixed to the securities issued in these transactions. Each of the recipients of securities in these transactions was an accredited or sophisticated person and had adequate access, through employment, business or other relationships, to information about us.

The offers, sales and issuances of the securities described in paragraphs (4), (7), (8) and (16) above were deemed to be exempt from registration under the Securities Act under Rule 701 promulgated under the Securities Act as offers and sale of securities pursuant to certain compensatory benefit plans and contracts relating to compensation in compliance with Rule 701.

**ITEM 16. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES.**

(a) *Exhibits.* The following exhibits are included herein or incorporated herein by reference.

Exhibit No.	Description
3.1	Second Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K (No. 001-36714) filed with the Securities and Exchange Commission on May 18, 2015).
3.2	Amended and Restated Bylaws (incorporated by reference to Exhibit 3.2 to the Current Report on Form 8-K (No. 001-36714) filed with the Securities and Exchange Commission on May 18, 2015).
4.1	Specimen Common Stock Certificate of Jaguar Animal Health, Inc. (incorporated by reference to Exhibit 4.1 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on October 10, 2014).
4.2	Registration Rights Agreement, dated June 8, 2016, by and between Jaguar Animal Health, Inc. and Aspire Capital Fund, LLC (incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K filed with the Securities and Exchange Commission on June 9, 2016).
5.1*	Opinion of Reed Smith LLP.
10.1#	Form of Indemnification Agreement by and between Jaguar Animal Health, Inc. and its directors and officers (incorporated by reference to Exhibit 10.1 to the Registration Statement on Form S-1 (No. 333-198383) filed with the Securities and Exchange Commission on August 27, 2014).
10.2#	Jaguar Animal Health, Inc. Amended and Restated 2014 Stock Incentive Plan (incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K filed with the Securities and Exchange Commission on June 20, 2016).
10.3#	Form of Notice of Grant of Stock Option and Stock Option Agreement under the 2014 Stock Incentive Plan (incorporated by reference to Exhibit 10.6 to the Registration Statement on Form S-1 (No. 333-198383) filed with the Securities and Exchange Commission on August 27, 2014).
10.4#	Form of Notice of Grant of Restricted Stock and Restricted Stock Agreement under the 2014 Stock Incentive Plan (incorporated by reference to Exhibit 10.7 to the Registration Statement on Form S-1 (No. 333-198383) filed with the Securities and Exchange Commission on August 27, 2014).
10.5#	Form of Notice of Grant of Restricted Stock Units and Restricted Stock Unit Agreement under the 2014 Stock Incentive Plan (incorporated by reference to Exhibit 10.8 to the Registration Statement on Form S-1 (No. 333-198383) filed with the Securities and Exchange Commission on August 27, 2014).
10.6#	Offer Letter by and between Jaguar Animal Health, Inc. and Lisa A. Conte, dated March 1, 2014 (incorporated by reference to Exhibit 10.9 to the Registration Statement on Form S-1 (No. 333-198383) filed with the Securities and Exchange Commission on August 27, 2014).
10.7#	Offer Letter by and between Jaguar Animal Health, Inc. and Steven R. King, Ph.D., dated February 28, 2014 (incorporated by reference to Exhibit 10.11 to the Registration Statement on Form S-1 (No. 333-198383) filed with the Securities and Exchange Commission on August 27, 2014).
10.8	Amended and Restated License Agreement by and between Jaguar Animal Health, Inc. and Napo Pharmaceuticals, Inc., dated August 6, 2014 (incorporated by reference to Exhibit 10.13 to the Registration Statement on Form S-1 (No. 333-198383) filed with the Securities and Exchange Commission on August 27, 2014).
10.9	Employee Leasing and Overhead Allocation Agreement by and between Jaguar Animal Health, Inc. and Napo Pharmaceuticals, Inc., dated July 1, 2013 (incorporated by reference to Exhibit 10.14 to the Registration Statement on Form S-1 (No. 333-198383) filed with the Securities and Exchange Commission on August 27, 2014).
10.10	Assignment of Sublease and Landlord Consent by and between Jaguar Animal Health, Inc. and Napo Pharmaceuticals, Inc., dated June 1,

<u>Exhibit No.</u>	<u>Description</u>
10.11	Form of Common Stock Warrant, which expires February 5, 2019 (incorporated by reference to Exhibit 10.16 to the Registration Statement on Form S-1 (No. 333-198383) filed with the Securities and Exchange Commission on August 27, 2014).
10.12	Form of Common Stock Warrant issued to Indena S.p.A., which expires June 26, 2019 (incorporated by reference to Exhibit 10.17 to the Registration Statement on Form S-1 (No. 333-198383) filed with the Securities and Exchange Commission on August 27, 2014).
10.13	Form of Common Stock Warrant issued to Joshua Mailman, which expires August 26, 2016 (incorporated by reference to Exhibit 10.21 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on September 9, 2014).
10.14#	Offer Letter by and between Jaguar Animal Health, Inc. and John A. Kallassy, dated as of September 19, 2014 (incorporated by reference to Exhibit 10.22 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on October 10, 2014).
10.15	Non-Disturbance Letter Agreement by and between Napo Pharmaceuticals, Inc. and Nantucket Investments Limited, as Administrative Agent and Collateral Agent, dated October 10, 2014 (incorporated by reference to Exhibit 10.23 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on October 10, 2014).
10.16	Form of Warrant to Purchase Common Stock issued to GPB Life Science Holdings LLC and 31 Group, LLC, which expires October 30, 2019 (incorporated by reference to Exhibit 10.25 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on October 31, 2014).
10.17	Form of Exchange Warrant to Purchase Common Stock, issued to GPB Life Science Holdings LLC and 31 Group, LLC, which expires June 3, 2020, as amended (incorporated by reference to Exhibit 10.27 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on April 17, 2015).
10.18	Amendment No. 1 to Amended and Restated License Agreement between Jaguar Animal Health, Inc. and Napo Pharmaceuticals, Inc., dated as of January 27, 2015 (incorporated by reference to Exhibit 10.28 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on March 20, 2015).
10.19#	Offer Letter by and between Jaguar Animal Health, Inc. and Michael Hauser, D.V.M., dated as of March 3, 2015 (incorporated by reference to Exhibit 10.32 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on March 20, 2015).
10.20	Form of Representative's Warrant (incorporated by reference to Exhibit 10.33 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on April 17, 2015).
10.21	Form of Warrant and Note Exercise Amendment pursuant to Convertible Note and Warrant Purchase Agreement dated December 23, 2014 (incorporated by reference to Exhibit 10.35 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on April 17, 2015).
10.22	Convertible Note and Warrant Purchase Agreement dated March 20, 2015 by and between Jaguar Animal Health, Inc., and Dechra Pharmaceuticals PLC (incorporated by reference to Exhibit 10.37 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on April 17, 2015).
10.23	Common Stock Warrant issued pursuant to the Convertible Note and Warrant Purchase Agreement dated March 20, 2015, which expires December 31, 2017 (incorporated by reference to Exhibit 10.39 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on April 17, 2015).
10.24	Form of Warrant Exercise Amendment pursuant to Exchange Warrant to Purchase Common Stock dated December 3, 2014 (incorporated by reference to Exhibit 10.40 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on April 17, 2015).

<u>Exhibit No.</u>	<u>Description</u>
10.25	Form of Amended and Restated Exchange Warrant to Purchase Common Stock (incorporated by reference to Exhibit 10.41 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on April 17, 2015).
10.26	Sublease Agreement by and between SeeChange Health Management LLC and Jaguar Animal Health, Inc., dated June 23, 2015 (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K (No. 001-36714) filed with the Securities and Exchange Commission on June 23, 2015).
10.27	Consent to Sublease by and among CA-Mission Street Limited Partnership, SeeChange Health Management LLC and Jaguar Animal Health, Inc., dated June 19, 2015 (incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K (No. 001-36714) filed with the Securities and Exchange Commission on June 23, 2015).

10.28	Loan and Security Agreement between Jaguar Animal Health, Inc., Qualified Subsidiaries thereof, the several banks and other financial institutions or entities from time to time parties thereto as lenders and Hercules Technology Growth Capital, Inc., dated as of August 18, 2015 (incorporated herein by reference to Exhibit 10.2 to the Current Report on Form 8-K (No. 001-36714) filed with the Securities and Exchange Commission on August 20, 2015).
10.29†	Manufacture and Supply Agreement between Jaguar Animal Health, Inc. and Glenmark Pharmaceuticals Ltd., dated September 22, 2015 (incorporated herein by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q (No. 001-36714) filed with the Securities and Exchange Commission on November 13, 2015).
10.30	Formulation Development and Manufacturing Agreement between Jaguar Animal Health, Inc. and Patheon Pharmaceuticals Inc., dated October 8, 2015 (incorporated by reference to Exhibit 10.30 to the Registration Statement on Form S-1 (No. 333-208905) filed with the Securities and Exchange Commission on January 7, 2016).
10.31#	Offer Letter by and between Jaguar Animal Health, Inc., and Karen Wright, dated as of October 11, 2015 (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed with the Securities and Exchange Commission on December 18, 2015).
10.32	Form of Convertible Promissory Note issued pursuant to the Convertible Note and Warrant Purchase Agreement dated as of December 23, 2014 (incorporated by reference to Exhibit 10.30 to the Registration Statement on Form S-1/A (No. 33-198383) filed with the Securities and Exchange Commission on March 20, 2015).
10.33	First Amendment to the Loan and Security Agreement and Waiver, by and among Jaguar Animal Health, Inc., Hercules Capital, Inc. and the lender party thereto, dated April 21, 2016 (incorporated herein by reference to Exhibit 10.1 to the Current Report on Form 8-K (No. 001-36714) filed with the Securities and Exchange Commission on April 27, 2016).
10.34#	Separation Agreement, by and between Jaguar Animal Health, Inc. and John Kallassy, dated April 28, 2016 (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K (No. 001-36714) filed with the Securities and Exchange Commission on May 3, 2016).
10.35	Common Stock Purchase Agreement, dated June 8, 2016, by and between Jaguar Animal Health, Inc. and Aspire Capital Fund, LLC (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed with the Securities and Exchange Commission on June 9, 2016).
23.1**	Consent of Independent Registered Public Accounting Firm.
23.2*	Consent of Reed Smith LLP (included in Exhibit 5.1).
24.1	Power of Attorney (included on the signature page of the initial filing of this Registration Statement).

\* Filed herewith.

\*\* Previously filed as an exhibit to the Form S-1 filed on June 22, 2016.

† Confidential treatment granted as to portions of the exhibit. Confidential materials omitted and filed separately with the Securities and Exchange Commission.

# Management contract or compensatory plan or arrangement.

(b) *Financial Statement Schedules.* Schedules have been omitted because the information required to be set forth therein is not required or is shown either in the financial statements or notes thereto incorporated by reference herein.

## ITEM 17. UNDERTAKINGS.

The undersigned registrant hereby undertakes:

- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
  - (i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;
  - (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the SEC pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement.
  - (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;
- (2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to

be the initial *bona fide* offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser: each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness; *provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to section 13(a) or section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer, or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question of whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

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## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this Amendment No. 1 to the Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized in the City of San Francisco, State of California, on July 6, 2016.

JAGUAR ANIMAL HEALTH, INC.

By: /s/ LISA A. CONTE  
Name: Lisa A. Conte  
Title: *Chief Executive Officer and President*

Pursuant to the requirements of the Securities Act of 1933, this Amendment No. 1 to the Registration Statement has been signed by the following persons in the capacities and on the date indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ LISA A. CONTE</u> Lisa A. Conte	Chief Executive Officer, President and Director (Principal Executive Officer)	July 6, 2016
<u>/s/ KAREN WRIGHT</u> Karen Wright	Chief Financial Officer and Treasurer (Principal Financial and Accounting Officer)	July 6, 2016
<u>*</u> James J. Bochnowski	Chairman of the Board	July 6, 2016
<u>*</u> Jiahao Qiu	Director	July 6, 2016
<u>*</u> Zhi Yang, Ph.D.	Director	July 6, 2016
<u>*</u> Folkert Kamphuis	Director	July 6, 2016
<u>*</u> John Micek III	Director	July 6, 2016

\*By: /s/ LISA A. CONTE  
Lisa A. Conte, Attorney-in-Fact

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## Exhibit Index

Exhibit No.	Description
3.1	Second Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K (No. 001-36714) filed with the Securities and Exchange Commission on May 18, 2015).
3.2	Amended and Restated Bylaws (incorporated by reference to Exhibit 3.2 to the Current Report on Form 8-K (No. 001-36714) filed with the Securities and Exchange Commission on May 18, 2015).
4.1	Specimen Common Stock Certificate of Jaguar Animal Health, Inc. (incorporated by reference to Exhibit 4.1 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on October 10, 2014).
4.2	Registration Rights Agreement, dated June 8, 2016, by and between Jaguar Animal Health, Inc. and Aspire Capital Fund, LLC (incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K filed with the Securities and Exchange Commission on June 9, 2016).
5.1*	Opinion of Reed Smith LLP.
10.1#	Form of Indemnification Agreement by and between Jaguar Animal Health, Inc. and its directors and officers (incorporated by reference to Exhibit 10.1 to the Registration Statement on Form S-1 (No. 333-198383) filed with the Securities and Exchange Commission on August 27, 2014).
10.2#	Jaguar Animal Health, Inc. Amended and Restated 2014 Stock Incentive Plan (incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K filed with the Securities and Exchange Commission on June 20, 2016).
10.3#	Form of Notice of Grant of Stock Option and Stock Option Agreement under the 2014 Stock Incentive Plan (incorporated by reference to Exhibit 10.6 to the Registration Statement on Form S-1 (No. 333-198383) filed with the Securities and Exchange Commission on August 27, 2014).
10.4#	Form of Notice of Grant of Restricted Stock and Restricted Stock Agreement under the 2014 Stock Incentive Plan (incorporated by reference to Exhibit 10.7 to the Registration Statement on Form S-1 (No. 333-198383) filed with the Securities and Exchange Commission on August 27, 2014).
10.5#	Form of Notice of Grant of Restricted Stock Units and Restricted Stock Unit Agreement under the 2014 Stock Incentive Plan (incorporated by reference to Exhibit 10.8 to the Registration Statement on Form S-1 (No. 333-198383) filed with the Securities and Exchange Commission on August 27, 2014).
10.6#	Offer Letter by and between Jaguar Animal Health, Inc. and Lisa A. Conte, dated March 1, 2014 (incorporated by reference to Exhibit 10.9 to the Registration Statement on Form S-1 (No. 333-198383) filed with the Securities and Exchange Commission on August 27, 2014).
10.7#	Offer Letter by and between Jaguar Animal Health, Inc. and Steven R. King, Ph.D., dated February 28, 2014 (incorporated by reference to Exhibit 10.11 to the Registration Statement on Form S-1 (No. 333-198383) filed with the Securities and Exchange Commission on August 27, 2014).
10.8	Amended and Restated License Agreement by and between Jaguar Animal Health, Inc. and Napo Pharmaceuticals, Inc., dated August 6, 2014 (incorporated by reference to Exhibit 10.13 to the Registration Statement on Form S-1 (No. 333-198383) filed with the Securities and Exchange Commission on August 27, 2014).
10.9	Employee Leasing and Overhead Allocation Agreement by and between Jaguar Animal Health, Inc. and Napo Pharmaceuticals, Inc., dated July 1, 2013 (incorporated by reference to Exhibit 10.14 to the Registration Statement on Form S-1 (No. 333-198383) filed with the Securities and Exchange Commission on August 27, 2014).
10.10	Assignment of Sublease and Landlord Consent by and between Jaguar Animal Health, Inc. and Napo Pharmaceuticals, Inc., dated June 1, 2014 (incorporated by reference to Exhibit 10.15 to the Registration Statement on Form S-1 (No. 333-198383) filed with the Securities and Exchange Commission on August 27, 2014).

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Exhibit No.	Description
10.11	Form of Common Stock Warrant, which expires February 5, 2019 (incorporated by reference to Exhibit 10.16 to the Registration Statement on Form S-1 (No. 333-198383) filed with the Securities and Exchange Commission on August 27, 2014).
10.12	Form of Common Stock Warrant issued to Indena S.p.A., which expires June 26, 2019 (incorporated by reference to Exhibit 10.17 to the Registration Statement on Form S-1 (No. 333-198383) filed with the Securities and Exchange Commission on August 27, 2014).
10.13	Form of Common Stock Warrant issued to Joshua Mailman, which expires August 26, 2016 (incorporated by reference to Exhibit 10.21 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on September 9, 2014).
10.14#	Offer Letter by and between Jaguar Animal Health, Inc. and John A. Kallassy, dated as of September 19, 2014 (incorporated by reference to Exhibit 10.22 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on October 10, 2014).



10.15	Non-Disturbance Letter Agreement by and between Napo Pharmaceuticals, Inc. and Nantucket Investments Limited, as Administrative Agent and Collateral Agent, dated October 10, 2014 (incorporated by reference to Exhibit 10.23 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on October 10, 2014).
10.16	Form of Warrant to Purchase Common Stock issued to GPB Life Science Holdings LLC and 31 Group, LLC, which expires October 30, 2019 (incorporated by reference to Exhibit 10.25 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on October 31, 2014).
10.17	Form of Exchange Warrant to Purchase Common Stock, issued to GPB Life Science Holdings LLC and 31 Group, LLC, which expires June 3, 2020, as amended (incorporated by reference to Exhibit 10.27 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on April 17, 2015).
10.18	Amendment No. 1 to Amended and Restated License Agreement between Jaguar Animal Health, Inc. and Napo Pharmaceuticals, Inc., dated as of January 27, 2015 (incorporated by reference to Exhibit 10.28 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on March 20, 2015).
10.19#	Offer Letter by and between Jaguar Animal Health, Inc. and Michael Hauser, D.V.M., dated as of March 3, 2015 (incorporated by reference to Exhibit 10.32 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on March 20, 2015).
10.20	Form of Representative's Warrant (incorporated by reference to Exhibit 10.33 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on April 17, 2015).
10.21	Form of Warrant and Note Exercise Amendment pursuant to Convertible Note and Warrant Purchase Agreement dated December 23, 2014 (incorporated by reference to Exhibit 10.35 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on April 17, 2015).
10.22	Convertible Note and Warrant Purchase Agreement dated March 20, 2015 by and between Jaguar Animal Health, Inc., and Dechra Pharmaceuticals PLC (incorporated by reference to Exhibit 10.37 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on April 17, 2015).
10.23	Common Stock Warrant issued pursuant to the Convertible Note and Warrant Purchase Agreement dated March 20, 2015, which expires December 31, 2017 (incorporated by reference to Exhibit 10.39 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on April 17, 2015).
10.24	Form of Warrant Exercise Amendment pursuant to Exchange Warrant to Purchase Common Stock dated December 3, 2014 (incorporated by reference to Exhibit 10.40 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on April 17, 2015).

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Exhibit No.	Description
10.25	Form of Amended and Restated Exchange Warrant to Purchase Common Stock (incorporated by reference to Exhibit 10.41 to the Registration Statement on Form S-1/A (No. 333-198383) filed with the Securities and Exchange Commission on April 17, 2015).
10.26	Sublease Agreement by and between SeeChange Health Management LLC and Jaguar Animal Health, Inc., dated June 23, 2015 (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K (No. 001-36714) filed with the Securities and Exchange Commission on June 23, 2015).
10.27	Consent to Sublease by and among CA-Mission Street Limited Partnership, SeeChange Health Management LLC and Jaguar Animal Health, Inc., dated June 19, 2015 (incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K (No. 001-36714) filed with the Securities and Exchange Commission on June 23, 2015).
10.28	Loan and Security Agreement between Jaguar Animal Health, Inc., Qualified Subsidiaries thereof, the several banks and other financial institutions or entities from time to time parties thereto as lenders and Hercules Technology Growth Capital, Inc., dated as of August 18, 2015 (incorporated herein by reference to Exhibit 10.2 to the Current Report on Form 8-K (No. 001-36714) filed with the Securities and Exchange Commission on August 20, 2015).
10.29†	Manufacture and Supply Agreement between Jaguar Animal Health, Inc. and Glenmark Pharmaceuticals Ltd., dated September 22, 2015 (incorporated herein by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q (No. 001-36714) filed with the Securities and Exchange Commission on November 13, 2015).
10.30	Formulation Development and Manufacturing Agreement between Jaguar Animal Health, Inc. and Patheon Pharmaceuticals Inc., dated October 8, 2015 (incorporated by reference to Exhibit 10.30 to the Registration Statement on Form S-1 (No. 333-208905) filed with the Securities and Exchange Commission on January 7, 2016).
10.31#	Offer Letter by and between Jaguar Animal Health, Inc., and Karen Wright, dated as of October 11, 2015 (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed with the Securities and Exchange Commission on December 18, 2015).
10.32	Form of Convertible Promissory Note issued pursuant to the Convertible Note and Warrant Purchase Agreement dated as of December 23, 2014 (incorporated by reference to Exhibit 10.30 to the Registration Statement on Form S-1/A (No. 33-198383) filed with the Securities and Exchange Commission on March 20, 2015).
10.33	First Amendment to the Loan and Security Agreement and Waiver, by and among Jaguar Animal Health, Inc., Hercules Capital, Inc. and

the lender party thereto, dated April 21, 2016 (incorporated herein by reference to Exhibit 10.1 to the Current Report on Form 8-K (No. 001-36714) filed with the Securities and Exchange Commission on April 27, 2016).

- 10.34# Separation Agreement, by and between Jaguar Animal Health, Inc. and John Kallassy, dated April 28, 2016 (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K (No. 001-36714) filed with the Securities and Exchange Commission on May 3, 2016).
- 10.35 Common Stock Purchase Agreement, dated June 8, 2016, by and between Jaguar Animal Health, Inc. and Aspire Capital Fund, LLC (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed with the Securities and Exchange Commission on June 9, 2016).
- 23.1\*\* Consent of Independent Registered Public Accounting Firm.
- 23.2\* Consent of Reed Smith LLP (included in Exhibit 5.1).
- 24.1 Power of Attorney (included on the signature page of the initial filing of this Registration Statement).

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\* Filed herewith.

\*\* Previously filed as an exhibit to the Form S-1 filed on June 22, 2016.

† Confidential treatment granted as to portions of the exhibit. Confidential materials omitted and filed separately with the Securities and Exchange Commission.

# Management contract or compensatory plan or arrangement.

July 6, 2016

Jaguar Animal Health, Inc.  
 201 Mission Street, Suite 2375  
 San Francisco, California 94105

Ladies and Gentlemen:

This opinion is furnished to you in connection with the Registration Statement on Form S-1 (File No. 333-212173) (as amended through the date hereof, the "Registration Statement"), filed by Jaguar Animal Health, Inc., a Delaware corporation (the "Company"), with the Securities and Exchange Commission (the "Commission") in connection with the registration under the Securities Act of 1933, as amended, of an aggregate of 3,000,000 shares of the Company's common stock, par value \$0.0001 per share (the "Common Stock"), of which 2,321,111 shares are reserved for issuance pursuant to a common stock purchase agreement dated June 8, 2016 (the "Purchase Agreement"), between the Company and Aspire Capital Fund, LLC ("Aspire Capital"). We are acting as counsel for the Company in connection with the registration of the Common Stock by the Company.

In rendering the opinion set forth herein, we have examined originals or copies, certified or otherwise identified to our satisfaction, of such documents, corporate records, certificates of public officials and other instruments as we have deemed necessary or advisable.

In such examination, we have assumed the genuineness of all signatures, the legal capacity of natural persons, the authenticity of all items submitted to us as originals, the conformity with originals of all items submitted to us as copies, and the authenticity of the originals of such copies. As to any facts material to the opinions expressed herein that we did not independently establish or verify, we have relied upon statements and representations of officers and other representatives of the Company and public officials.

This opinion is based solely on the General Corporation Law of the State of Delaware (including all related provisions of the Delaware Constitution and all reported judicial decisions interpreting the General Corporation Law of the State of Delaware and the Delaware Constitution).

Based upon and subject to the foregoing, we are of the opinion that:

i. the 678,889 shares of Common Stock issued and sold to Aspire Capital under the Purchase Agreement have been duly authorized by the Company and are validly issued, fully paid and non-assessable; and

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ii. the 2,321,111 shares of Common Stock have been duly authorized for issuance and, when issued, delivered and paid for in accordance with the terms of the Purchase Agreement, including receipt of the consideration therefor, will be validly issued, fully paid and nonassessable.

We consent to the inclusion of this opinion as an exhibit to the Registration Statement and further consent to all references to us under the caption "Legal Matters" in the Prospectus. In giving this consent, we do not admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission.

Very truly yours,

/s/ REED SMITH LLP

REED SMITH LLP