

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

FORM S-8

**REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

Jaguar Animal Health, Inc.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction
of incorporation or organization)

46-2956775

(I.R.S. Employer
Identification No.)

**201 Mission Street, Suite 2375
San Francisco, California 94105**

(Address of principal executive office) (Zip Code)

2014 Stock Incentive Plan

(Full title of the plan)

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 and address of agent for service) (Telephone number, including area code, of agent for service)

Copies to:

Donald C. Reinke

Craig P. Tanner

Reed Smith LLP

101 Second Street, Suite 1800
San Francisco, California 94105
(415) 543-8700

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. (Check one):

Large accelerated filer

Non-accelerated filer

(Do not check if a smaller reporting company.)

Accelerated filer

Smaller reporting company

CALCULATION OF REGISTRATION FEE

Title of securities to be registered	Amount to be registered(1)	Proposed maximum offering price per share	Proposed maximum aggregate offering price	Amount of registration fee
Common stock, \$0.0001 par value per share	1,712,498	\$ 0.71(2)	\$ 1,215,873.58	\$ 140.92

(1) Pursuant to Rule 416(a) under the Securities Act of 1933, as amended (the "Securities Act"), this Registration Statement also includes an indeterminate number of additional shares that may become issuable under the plan set forth herein by reason of any stock split, stock dividend, recapitalization or other similar transactions as provided in the above-referenced plan.

(2) Estimated in accordance with Rules 457(c) and 457(h) of the Securities Act solely for the purpose of calculating the registration fee on the basis of \$0.71 per share, which is the average of the high and low prices of the Registrant's common stock, as reported on the NASDAQ Capital Market, on December 20, 2016.

EXPLANATORY NOTE

This Registration Statement on Form S-8 (the “Registration Statement”) registers additional shares of common stock of Jaguar Animal Health, Inc. (the “Registrant”) to be issued pursuant to Registrant’s 2014 Stock Incentive Plan (the “Plan”). Registrant initially registered 333,333 shares of its common stock issuable under the Plan pursuant to a Registration Statement on Form S-8 filed with the Securities and Exchange Commission (the “Commission”) on May 18, 2015 (File No. 333-204280) (the “Initial S-8”).

The number of shares of Registrant’s common stock available for grant and issuance under the Plan is subject to an annual “evergreen provision” increase on the first day of each fiscal year, for a period of not more than 5 years beginning on January 1st of the year following the year in which the Plan became effective, by (i) 2% of the total number of shares of Registrant’s common stock outstanding on the last day of the preceding fiscal year, or (ii) a lesser number determined by Registrant’s board of directors (the “Annual Increase”). As of January 1, 2016, the number of shares of Registrant’s common stock available for grant and issuance under the Plan increased by 162,498 shares.

In addition, on April 1, 2016, Registrant’s board of directors approved, subject to shareholder approval, an amendment to the Plan that increased the number of shares available for issuance under the Plan by 1,550,000 shares (the “Amendment”). Registrant’s shareholders approved the Amendment on June 14, 2016.

Pursuant to the Annual Increase and the Amendment, the total number of shares of the Registrant’s common stock available for grant and issuance under the Plan increased by 1,712,498 shares. Accordingly, the content of the Initial S-8 is incorporated herein by reference pursuant to General Instruction E of Form S-8.

PART I

INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

The document(s) containing the information specified in Part I of Form S-8 will be sent or given to participants as specified by Securities Act Rule 428(b)(1).

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Certain Documents by Reference

The following documents of Registrant filed with the Securities and Exchange Commission (the “Commission”) are incorporated herein by reference:

- (a) Registrant’s Annual Report on Form 10-K for its fiscal year ended December 31, 2015, filed on March 29, 2016 (Commission File No. 001-36714) (including information specifically incorporated by reference into the Registrant’s Annual Report on Form 10-K from Registrant’s Definitive Proxy Statement on Schedule 14A filed with the Commission on April 29, 2016);
- (b) Registrant’s Quarterly Reports on Form 10-Q for its fiscal quarter ended March 31, 2016, filed on May 10, 2016 (Commission File No. 001-36714), for its fiscal quarter ended June 30, 2016, filed on August 15, 2016 (Commission File No. 001-36714), and for its fiscal quarter ended September 30, 2016, filed on November 14, 2016, as subsequently revised or supplemented on Form 10-Q/A on December 5, 2016;
- (c) Registrant’s Current Reports on Form 8-K, filed with the Commission 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, December 15, 2016 and December 19, 2016 (Commission File No. 001-36714); and

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- (d) The description of Registrant’s common stock contained in Registrant’s Registration Statement on Form 8-A (Registration No. 001-36714) filed with the Commission on October 30, 2014 under Section 12(b) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), including any amendments or reports filed for the purpose of updating such description.

All documents subsequently filed by Registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act, prior to the filing of a post-effective amendment which indicates that all securities offered hereby have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference into this Registration Statement and to be a part hereof from the date of filing of such documents; provided, however, that documents or information deemed to have been furnished and not filed in accordance with Commission rules shall not be deemed incorporated by reference into this Registration Statement. Any statement contained herein or in a document, all or a portion of which is incorporated or deemed to be incorporated by reference herein, shall be deemed to be modified or superseded for purposes of this Registration Statement to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or amended, to constitute a part of this Registration Statement.

You may read and copy registration statements, reports, proxy statements and other information filed by Registrant at the public reference room maintained by the Commission at 100 F Street, N.E., Washington, D.C. 20549. You can call the Commission for further information about its public reference room at 1-800-732-0330. Such material is also available at the Commission’s website at <http://www.sec.gov>.

Item 4. Description of Securities

Not applicable.

- 4.2 Amended and Restated Bylaws (incorporated by reference to Exhibit 3.2 to Registrant's Form 8-K filed on May 18, 2015)
- 4.3 Specimen Common Stock Certificate of Jaguar Animal Health, Inc. (incorporated by reference to Exhibit 4.1 to Registrant's Registration Statement on Form S-1/A (File No. 333-198383) filed on October 10, 2014)
- 5.1 Opinion of Reed Smith LLP
- 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 signature page hereto)
- 99.1 Jaguar Animal Health, Inc. 2014 Stock Incentive Plan, as amended and restated (incorporated by reference to Exhibit 10.1 to Registrant's Form 8-K filed on June 20, 2016)

December 23, 2016

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

Ladies and Gentlemen:

We have acted as counsel to Jaguar Animal Health, Inc., a Delaware corporation (the "Company"), in connection with the filing by the Company on the date hereof of a Registration Statement on Form S-8 (the "Registration Statement") with the Securities and Exchange Commission (the "Commission") covering the offer and sale of up to 1,712,498 shares of the Company's common stock, \$0.0001 par value per share (the "Shares"), issuable pursuant to its 2014 Stock Incentive Plan (the "Plan"). This opinion is being furnished at the Company's request in connection with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act of 1933, as amended, and no opinion is expressed herein as to any matter pertaining to the contents of the Registration Statement or the prospectus forming a part thereof, other than as to the issue of the Shares.

In rendering the opinion hereinafter expressed, we have made such legal and factual examinations and inquiries, including an examination of originals or copies certified or otherwise identified to our satisfaction as being true reproductions of originals, of all such documents, records, agreements and other instruments, including the Registration Statement, the Plan, the Certificate of Incorporation, as amended, of the Company, the Bylaws of the Company, and corporate minutes of the Company as we have deemed necessary and appropriate for the purpose of this opinion. We have assumed that there are no agreements or understandings between or among the Company and any participants in the Plan that would expand, modify or otherwise affect the terms of the Plan or the respective rights or obligations of any participants thereunder. We have further assumed the genuineness of all signatures, the authenticity of all documents, certificates and records submitted to us as originals, the conformity to original documents, certificates and records of all documents, certificates and records submitted to us as copies, and the truthfulness of all statements of fact contained therein.

Based upon the foregoing, and having regard to legal considerations and other information that we deem relevant, we are of the opinion that, as of the date hereof, when the Shares shall have been duly registered on the books of the transfer agent and registrar therefor in the name or on behalf of the participants, and have been issued by the Company against payment therefor in the circumstances contemplated by the Plan and assuming in each case that the individual issuances, grants or awards under the Plan are duly authorized by all necessary corporate action of the Company and duly issued, granted or awarded and exercised and paid for, for consideration at least equal to the par value thereof, in accordance with the requirements of law and the Plan (and the agreements and awards duly adopted thereunder and in accordance therewith), the issue and sale of the Shares shall have been duly authorized by all necessary corporate action of the Company and, when and to the extent that the Shares are issued in accordance with the foregoing, such Shares will be validly issued, fully paid and non-assessable.

We express no opinion herein as to the laws of any state or jurisdiction other than the General Corporation Law of the State of Delaware.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement and the reference to this firm therein. In giving this consent, we do not thereby admit that we are within 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



Tel: 415-397-7900
Fax: 415-397-2161
www.bdo.com

One Bush Street
Suite 1800
San Francisco, CA 94104

Consent of Independent Registered Public Accounting Firm

Jaguar Animal Health, Inc.
San Francisco, California 94105

We hereby consent to the incorporation by reference in this Registration Statement on Form S-8 of our report dated March 29, 2016, relating to the financial statements of Jaguar Animal Health, Inc. appearing in the Company's Annual Report on Form 10-K for the year ended December 31, 2015. Our report contains an explanatory paragraph regarding the Company's ability to continue as a going concern.

/s/ BDO USA, LLP

BDO USA, LLP
San Francisco, California

December 23, 2016

BDO USA, LLP, a Delaware limited liability partnership, is the U.S. member of BDO International Limited, a UK company limited by guarantee, and forms part of the international BDO network of independent member firms.

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