



DIVISION OF
CORPORATION FINANCE

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

Mail Stop 4546

February 6, 2017

Michael D. Step
Chief Executive Officer
Ritter Pharmaceuticals, Inc.
1880 Century Park East #1000
Los Angeles, CA 90067

**Re: Ritter Pharmaceuticals, Inc.
Registration Statement on Form S-1
Response dated January 24, 2017
File No. 333-215143**

Dear Mr. Step:

We have reviewed your January 24, 2017 response to our comment letter and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by amending your registration statement and providing the requested information. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your registration statement and the information you provide in response to these comments, we may have additional comments. Unless we note otherwise, our references to prior comments are to comments in our January 13, 2017 letter.

General

1. We note your response to prior comment 1 analyzing the factors referenced in CDI Securities Act Rules 612.09 that focus on the distinction between primary and secondary offerings. As discussed in CDI Securities Act Sections 139.13, we view equity line financings as primary or "indirect primary" offerings, rather than secondary offerings. As such, the factors analyzed in your response are not the sole factors we consider in determining whether an indirect primary offering is actually a primary offering. Given the size of the offering being registered here, and given the prior registration statement registering shares issuable under this equity line agreement, it is unclear whether this offering should more properly be registered as a primary offering. Please tell us if Aspire Capital completed the resale of substantially all of the securities registered under the prior registration statement, and if so, the date of the most recent sale. If not, please expand

your analysis to address the aggregate size of both offerings compared to the number of shares of common stock held by non-affiliates (exclusive of shares purchased by Aspire through the equity line agreement and subsequently re-sold to non-affiliates).

Executive and Director Compensation, page 17

2. Please update your disclosure in this section to present the compensation disclosure for the year ended December 31, 2016, the company's last full financial year. For reference, see Regulation S-K CDI Question 117.05.

Selling Stockholder, page 49

3. We acknowledge your response to prior comment 2, but do not agree with your analysis that the selling stockholder table should reflect information prior to the resale of any shares Aspire acquired pursuant to the purchase agreement rather than the amount owned prior to the offering being registered. Please revise your disclosure in this section to provide updated information with respect to the number of shares beneficially owned by Aspire Capital as of the most recent practicable date.

Please contact Dorrie Yale at 202-551-8776 or Mary Beth Breslin at 202-551-3625 with any other questions.

Sincerely,

/s/ Mary Beth Breslin for

Suzanne Hayes
Assistant Director
Office of Healthcare and Insurance

cc: Michael Sanders, Esq. — Reed Smith LLP