



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

DIVISION OF
CORPORATION FINANCE

Mail Stop 4546

December 19, 2016

Walter V. Klemp
Director and Chief Executive Officer
Moleculin Biotech, Inc.
2575 West Bellfort, Suite 333
Houston, TX 77054

Re: Moleculin Biotech, Inc.
Registration Statement on Form S-1
Filed December 2, 2016
File No. 333-214898

Dear Mr. Klemp:

We have limited our review of your registration statement to those issues we have addressed in our comment. In our comment, 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 comment applies 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 this comment, we may have additional comments.

Cover Page

1. Although Rule 430A of the Securities Act of 1933 permits registrants to omit certain pricing-related information from a registration statement that is declared effective, your filing must include the amount of securities to be offered in a pre-effective amendment. Accordingly, please confirm that you will revise your disclosure to specify: (i) the number of units to be offered; (ii) the number of shares of common stock per each unit; and (iii) the number of warrants per each unit.

We remind you that the company and its management are responsible for the accuracy and adequacy of their disclosures, notwithstanding any review, comments, action or absence of action by the staff.

Walter V. Klemp
Moleculin Biotech, Inc.
December 19, 2016
Page 2

Refer to Rules 460 and 461 regarding requests for acceleration. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

Please contact Josh Samples at (202) 551-3199 or Joseph McCann at (202) 551-6262 with any questions.

Sincerely,

/s/ Joseph McCann for

Suzanne Hayes
Assistant Director
Office of Healthcare and Insurance

cc: Cavas S. Pavri
Schiff Hardin LLP