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May 7, 2019

VIA EDGAR AND FEDERAL EXPRESS

United States Securities and Exchange Commission
Division of Corporation Finance
Office of Healthcare & Insurance
100 F Street, N.E.
Washington, D.C. 20549

Re: Ohr Pharmaceutical, Inc.
Amendment No. 1 to Registration Statement on Form S-4
Filed April 16, 2019
File No. 333-230168

Ladies and Gentlemen:

On behalf of Ohr Pharmaceutical, Inc., a Delaware corporation (the "Company"), we have electronically transmitted the following: (1) this letter, and (2) Amendment No. 2 to Registration Statement on Form S-4 ("Amendment No. 2"). We have also sent to you by Federal Express courtesy copies of the following: (i) this letter, and (ii) a clean copy of Amendment No. 2, as well as a copy which has been marked to show changes from the Company's Amendment No. 1 to Registration Statement on Form S-4 (File No. 333-230168) (the "Registration Statement"), filed by the Company on April 16, 2019.

Set forth below are the Company's responses to the comments raised in the May 1, 2019 comment letter of the Staff (the "Staff") of the Securities and Exchange Commission (the "Commission"). For your convenience, we have provided each of the Staff's comments followed by the Company's responses.

All responses provided in this letter are based solely on information provided by the Company.

Amendment No. 1 to Registration Statement on S-4

Summary, page 15

1. *We acknowledge your revised disclosures in response to prior comment 4. Please revise your statements regarding drug development using the PATRoL platform to explain its mechanism in a manner a lay person would understand, including by defining the terms "chiral" and "stereoisomer." In addition, balance this disclosure by noting that all of NeuBase's programs are in the research or preclinical stage and that NeuBase's approach to nucleic acid therapeutics is novel, as you more thoroughly explain on pages 67-68.*

Response: The Company has revised its disclosure on pages 15, 16 and 257 of Amendment No. 2 to address the Staff's comment.

2. *Please revise your registration statement to present the estimated aggregate number of pre-split shares that will be issued to NeuBase shareholders in the merger.*

Response: The Company has revised its disclosure on the cover page and pages 2, 16 and 306 of Amendment No. 2 to address the Staff's comment.

Risk Factors
Risks Related to the Merger, page 37

3. *Please provide a separate risk factor discussion disclosing that Roth's fairness opinion relies on projections provided by NeuBase, which do not consider the possibility that NeuBase product candidates do not receive FDA approval. Your discussion should address the possible consequences if the NeuBase product candidates do not obtain FDA approval.*

Response: The Company has revised its disclosure on page 42 of Amendment No. 2 to address the Staff's comment.

The combined company's amended and restated certificate of incorporation will provide…, page 120

4. *We acknowledge your revised disclosure in response to prior comment 7 and your revisions in Annex C. Please further revise to clarify that the exclusive forum provision also does not apply to Exchange Act claims.*

Response: The Company has revised its disclosure on page 120 of Amendment No. 2 to address the Staff's comment.

Opinion of Ohr's Financial Advisor, page 150

5. *We note that Roth used the described analyses to determine a range of "implied enterprise values" for NeuBase. Generally, the "implied enterprise value" is implied by the terms of the merger, not determined by valuation analyses. Please revise your discussion to clearly identify the implied enterprise value of NeuBase based on the terms of the merger agreement and ensure that the enterprise value based on Roth's analyses are clearly distinguishable from the enterprise value implied by the terms of the merger.*

Response: The Company has revised its disclosure on page 154 of Amendment No. 2 to address the Staff's comment.

6. *We note your revised disclosures in response to prior comment 16. Please clarify that the enterprise value range determined by Roth consists of $56.8 million using the low end of the range calculated using the discounted cash flow analysis and $342.8 million, the mean calculated using the Publicly Traded Company Analysis. Please also explain the how Roth calculated the "average implied enterprise value" of $140.9 million and $237.4 million and the basis for the belief that the NeuBase enterprise value falls within the range of the comparable company values.*

Response: The Company has revised its disclosure on page 154 of Amendment No. 2 to address the Staff's comment.

7. *Please further revise your disclosure regarding the discounted cash flow analysis to explain how the success rate probabilities were applied to the NeuBase projections. You state that Roth applied the probabilities for each phase of clinical development. Please explain how the cash flows for the indicated years were adjusted. In addition, your revised disclosure indicates that you did not consider the separate possibility that the NeuBase product candidates do not successfully complete clinical trials. Please explain why.*

Response: The Company has revised its disclosure on page 158 of Amendment No. 2 to address the Staff's comment. Roth did not consider the separate possibility that the NeuBase product candidates would not successfully complete clinical trials because the Clinical Development Success Rates 2006-2015 Sourcebook risk adjustment to the discounted cash flow model already incorporates the possibility that the NeuBase product candidates do not successfully complete clinical trials. Please see Comment #10 below for additional information on Roth's risk adjustment of the NeuBase projections.

Consideration Analysis, page 155

8. *Please clarify whether the number of shares to be issued and December 31, 2018 and 20-day volume weighted average trading price were pre-reverse split or adjusted to reflect the February 4, 2019 reverse stock split. Additionally, clarify the time period used to calculate the 20-day volume weighted average.*

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Response: The Company has revised its disclosure on page 155 of Amendment No. 2 to address the Staff's comments.

Discounted Cash Flow Analysis, page 158

9. *We note that Roth applied a "probability of success" adjustment based on Clinical Development Success Rates 2006-2015. Please explain how Roth calculated the average probability of continued clinical development at each phase of development. The disclosure appears to imply that 100% of product candidates under development for neurological and rare diseases between 2005 and 2016 successfully advanced through preclinical and Phase I trials. Please clarify whether all INDs for neurology and rare diseases was considered in calculating the 100% or a subset of all product candidates.*

Response: The Company has revised its disclosure on page 158 of Amendment No. 2 to address the Staff's comment.

10. *Please explain the rationale behind adjusting projected unlevered cash flow to account for the probability of success when the projected revenues are based on the assumption that NT0100- Huntington's Disease and NT0200-Myotonic Dystrophy are approved by the FDA and begin generating revenue in 2024 and 2025, respectively. In other words, since FDA approval is necessary to generate any of the projected revenues, a valuation based on 30.4% of projected revenues does not appear to contemplate either of the mutually exclusive outcomes for either product candidate.*

Response: As noted in this comment, the projections prepared by NeuBase management assumed FDA approval of NeuBase's product candidates and did not reflect any adjustment for the risk that FDA approval might not ultimately be obtained. In preparing its analysis, in light of the current early stage of the product candidates, Roth then applied a risk adjustment to those NeuBase projections to account for the risk that FDA approval would not be obtained, and adjusted the projected revenue to account for such risk. As disclosed in the Registration Statement and as explained in the Company's response to the earlier comment letter, the risk adjustment factors used by Roth in its discounted cash flow analysis were obtained from the Clinical Development Success Rates 2006-2015 Sourcebook. The Clinical Development Success Rates 2006-2015 Sourcebook uses empirical evidence to determine widely-accepted probability estimates of success for product candidates in various target markets at a given stage of development.

NeuBase Projections, page 160

11. *Please revise to clarify whether the projections presented in this section have been revised by Roth in accordance with the methodology described on page 158 or if these were the projections provided by NeuBase.*

Response: The Company has revised its disclosure on page 160 of Amendment No. 2 to address the Staff's comment.

Material U.S. Federal Income Tax Consequences of the Merger
U.S. Federal Income Tax Consequences of the Merger Generally, page 172

12. *We note your revised disclosures in response to prior comment 20. Please further revise to remove language from the header of this section indicating that these are tax consequences "generally." Please also clearly state that the disclosure in this section is the opinion of the respective counsels.*

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Response: The Company has revised its disclosure on pages 171 and 172 of Amendment No. 2 to address the Staff's comment number 12.

NeuBase Executive Compensation, page 226

13. *We note your revised disclosure on page 226 in response to prior comment 21 that certain compensation tables have been omitted because there was no activity to report. However, you also state that the employment agreement with Dr. Stephan was effective as of August 28, 2018, prior to your September 30 year end, and that options vested commencing on August 28th. Please reconcile your disclosures. In addition, please file the employment agreement with Dr. Stephan.*

Response: The Company has filed the Executive Employment Agreement and the At-Will Employment, Confidential Information, Invention Assignment and Arbitration Agreement, each by and between NeuBase and Dr. Dietrich Stephan, as Exhibit 10.23 and Exhibit 10.24, respectively, with Amendment No. 2 to address the Staff's comment number 13.

On December 28, 2018, NeuBase's board of directors approved the Executive Employment Agreement by and between Dr. Stephan and NeuBase. The Executive Employment Agreement provides that Dr. Stephan was and is entitled to an annual base salary beginning December 22, 2018, was paid a bonus on or about December 22, 2018, and was granted an option to purchase 3,250,000 shares of common stock of NeuBase. The option was granted on December 31, 2018 and commenced vesting on August 28, 2018. NeuBase includes disclosure regarding this December 2018 grant in the section entitled "NeuBase Executive Compensation — Employment Agreement" on page 226 of Amendment No. 2, but does not include such grant in the Executive Compensation tables in accordance with Item 402 of Regulation S-K. Because this grant was made after NeuBase's last fiscal year rather than in the fiscal year ended September 30, 2018, and no dollar amount is recognized for financial statement reporting purposes with respect to the fiscal year ended September 30, 2018 in accordance with FASB ASC Topic 718, this grant need not be reported in the executive compensation tables.

This analysis is further supported by the Answer to Question 4.05 in the Commission's August 8, 2007 Compliance and Disclosure Interpretation of "Item 402 of Regulation S-K - Executive Compensation." The Answer to Question 4.05 states that if an equity award is made after the end of the fiscal year but relates to services performed in that completed year, only the dollar amount recognized for financial statement reporting purposes with respect to the fiscal year need be reported in the Summary Compensation Table for stock and option awards. With respect to the Grants of Plan-Based Awards Table, only information as to the awards need be reported in the fiscal year in which the award was made. Because the December 2018 award does not meet these criteria, the Company does not believe these awards should be included in the executive compensation tables for the fiscal year ended September 30, 2018.

Notwithstanding the foregoing, the Company has revised the NeuBase executive compensation disclosure on page 227 of Amendment No. 2 to include tabular disclosure of Dr. Stephan's purchase of restricted stock of NeuBase during the fiscal year ended September 30, 2018.

Compensation of NeuBase Directors, page 228

14. *Your revised disclosure states that following the merger, non-employee directors are expected to be granted a stock option to purchase common stock in an amount that represents approximately 1% of the total common stock of the combined company on a fully diluted basis. Revise to clarify whether this amount is for each non-employee director or all non-employee directors in the aggregate.*

Response: The Company has revised its disclosure on page 229 of Amendment No. 2 to provide that each non-employee director will receive 1% of the total common stock of the combined company on a fully diluted basis.

License Agreement with Carnegie Mellon University, page 264

15. We note your revised disclosures and response to prior comment 28. However, disclosures regarding total payments made to date and the aggregate amount of all your potential milestone payments are material information. We are only able to grant confidential treatment for individual milestone amounts if the aggregate amounts of payments made to date and aggregate potential payments are disclosed. Also revise to clarify that if NeuBase challenges the validity of intellectual property, Carnegie Mellon is the party with the termination ability.

Response: The Company respectfully advises the Staff that NeuBase has not made any milestone payments to date under the License Agreement with Carnegie Mellon University. Furthermore, pursuant to the terms of the License Agreement, while NeuBase is subject to certain minimum performance requirements, NeuBase's only future monetary obligations are for the payment of royalties and sublicensing fees and potential termination fees. The Company has revised its disclosure on page 266 of Amendment No. 2 to clarify that Carnegie Mellon is the party with the termination ability if NeuBase challenges the validity of intellectual property.

* * * *

As requested, the Company acknowledges that the Company and its management are responsible for the adequacy and accuracy of their disclosures, notwithstanding any review, comments, action or absence of action by the Staff.

Please do not hesitate to contact the undersigned at (212) 704-6030, if you have any questions or comments regarding the filing or this letter.

Very truly yours,

/s/ Joseph Walsh, Esq.

Joseph Walsh, Esq.

cc: *Securities and Exchange Commission*
Angela Connell
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