

March 26, 2019

VIA EDGAR AND HAND DELIVERY

Mr. Jeffrey Gabor
U.S. Securities and Exchange Commission
Division of Corporation Finance
Office of Healthcare & Insurance
100 F. Street, N.E.
Washington, DC 20549

Re: Flex Pharma, Inc.
Registration Statement on Form S-4
Filed February 14, 2019 (File No. 333-229666)

Dear Mr. Gabor:

We are writing on behalf of our client, Flex Pharma, Inc. (the “Company”), in response to the letter dated March 15, 2019, from the staff of the Securities and Exchanges Commission transmitting their comments to the Registration Statement on Form S-4 filed by the Company on February 14, 2019 (the “Registration Statement”). Your specific requests for information are set forth verbatim below, followed by the Company’s response. Courtesy copies of Amendment No. 1 to the Registration Statement are included herewith.

Form S-4 Filed February 14, 2019**Cover Page****1. Please revise to include the per share exchange ratio.**

The Company has added the per unit conversion ratios of Salarius’ units to page 1 of the cover letter.

Hamilton Harrison & Mathews ► Mardemootoo Balgobin ► HPRP ► Zain & Co. ► Delany Law ► Dinner Martin ► Maclay Murray & Spens ► Gallo Barrios Pickmann ► Muñoz ► Cardenas & Cardenas ► Lopez Velarde ► Rodyk ► Boekel ► OPF Partners ► □□

Q: What is the merger?, page 1

2. **Where you discuss the dividend or distribution of rights to receive warrants to purchase shares of Flex Pharma stock on page 2, please disclose the warrants' aggregate value and the number of shares that the warrants would be exercisable for, based on values as of the most recent practicable date. Also disclose any assumptions on which the calculation is based.**

The Company has added the warrants' aggregate value and the number of shares for which the warrants would be exercisable to page 2 of the cover letter, based on a recent date and stated assumptions.

Questions and Answers about the Merger, page 1

3. **We note that at or prior to the closing of the merger, Flex Pharma will pay a dividend of or distribute one right per share of Flex Pharma's common stock to its current stockholders of record as of a date and time determined by Flex Pharma's board of directors. To the extent that it will impact the exchange ratio or the expected relative ownership percentages of each company's shareholders in the combined company, please clearly disclose this fact and the expected impact throughout your prospectus as appropriate, including on the prospectus cover page.**

The Company has added disclosure to page 2 of the cover letter regarding how the Company's dividend or distribution of rights to its current stockholders and the issuance of warrants to such stockholders will impact the conversion ratios and the expected relative ownership of each company's equity holders in the combined company. The Company also has added such disclosure elsewhere in the proxy statement/prospectus/information statement.

Conditions to Completion of the Merger, page 14

4. **Please revise to identify the conditions that the parties may waive.**

The Company has added disclosure to page 15 to identify the conditions that the parties may waive.

Risk Factors**The certificate of incorporation of the combined company will provide that the Court of Chancery of the State of Delaware...., page 71**

5. **We note your disclosure that your certificate of incorporation for the combined company will contain an exclusive forum provision. Please disclose whether the provision will apply to actions arising under the Securities Act or Exchange Act. If the provision does not apply to actions arising under the Securities Act or Exchange Act, please also ensure that the provision in the certificate of incorporation states this clearly. If the provision does apply to actions arising under the federal securities laws, please revise your prospectus to clarify, as well as to state that there is uncertainty as to whether a court would enforce such a provision.**

The Company has added disclosure to page 71 to confirm that its exclusive forum provision does not apply to actions arising under the Securities Act or the Exchange Act. The Company believes that its certificate of incorporation clearly states the limited actions and proceedings to which its exclusive forum provision applies.

Flex Pharma Proposal 2, page 85

6. **We note your disclosure that the reverse stock split ratio will be determined by the board of directors. Please clarify whether there is a potential range of ratios from which the board will select. You suggest on page 88 that you are seeking stockholder approval of a range of potential ratios, and the table on page 87 suggests that the range could be in the 1:15 to 1:30 range, but it appears from the text of the proposed charter amendment that the board can select any ratio. Please revise to clarify and to specify the period of time for which the authority to implement the reverse split would be granted. To the extent that you are not specifying a range of ratios, please tell us whether it is permissible under Delaware law for shareholders to approve a resolution granting the board discretion to implement a reverse split at an unspecified ratio.**

The Company has revised its disclosure on pages 85–88, and the text of the proposed charter amendment, to clarify that its board of directors will select a reverse stock split ratio from a range of ratios (from 1-for-10 to 1-for-40).

Also, page 85 states that the Company's board of directors recommends that its stockholders authorize the board of directors to effect a reverse stock split at any time prior to the effective time of the merger.

The Merger

Historical Background of Flex Pharma, page 96

7. **Please provide us supplementally with copies of all materials prepared by Wedbush and shared with Flex Pharma's Board of Directors, including copies of all board books and all transcripts and summaries, that were material to the Board's decision to approve the merger agreement and the transaction contemplated thereby.**

The Company will provide you supplementally with copies of materials prepared by Wedbush and shared with Flex Pharma's Board of Directors that were material to the Board's decision to approve the merger agreement and the transaction contemplated thereby under separate cover complying with the requirements of Rule 83 (17 CFR 200.83). The Company requests confidential treatment of such information under Rule 83 from disclosure under the Freedom of Information Act.

History of Flex Pharma's Strategic Alternatives and Significant Corporate Events, page 98

8. **Please revise your disclosure throughout this section to provide greater detail as to the background of the transaction, including the material issues discussed and key negotiated terms. The disclosure should provide shareholders with an understanding of how, when, and why the material terms of your proposed transactions evolved and why this transaction is being recommended as opposed to any alternatives. In your revised disclosure, please ensure that you address the following:**

- **the material terms in the initial proposal and any subsequent proposals relating to Parties 1, 2, 5, 6, 7, 8, and Salarius;**
- **identification of the members of Flex Pharma's management involved; and**
- **valuations.**

The Company has revised its disclosure throughout the section entitled "History of Flex Pharma's Strategic Alternatives and Significant Corporate Events" to provide greater details as to the background of the transaction, including the material issues discussed and key negotiated terms. The disclosure includes: material terms in initial proposals and subsequent proposals relating to Parties 1, 2, 5, 6, 7, 8, and Salarius; identification of the members of Flex Pharma's management involved; and valuations.

9. **Please expand your disclosure, where applicable, to include the processes employed to assess the value of the potential transactions outlined in the indications of interest you received.**

The Company has expanded its disclosure throughout the section entitled "History of Flex Pharma's Strategic Alternatives and Significant Corporate Events" to include the processes employed to assess the value of the potential transactions outlined in the indications of interest that the Company received.

Opinion of Flex Pharma's Financial Advisor, page 108

10. **We note that Salarius disclosed certain internal information, primarily financial in nature, including financial and operating data to Wedbush. Please revise your registration statement to disclose the underlying financial information and operating data.**

The Company reviewed this comment with Wedbush. As noted in the disclosure in the Registration Statement, because of Salarius' early stage of development and lack of non-grant revenue, Wedbush did not perform a discounted cash flow analysis of Salarius as part of its fairness analysis. As a result, while Wedbush reviewed the internal financial information furnished to it by Salarius, Wedbush did not consider that information as part of its fairness analysis. Accordingly, the Company believes that the financial information that Salarius provided to Wedbush is not material to investors and respectfully submits that disclosure of that information in the Registration Statement is not necessary and may confuse or mislead investors.

11. **In the public company market valuation analysis and precedent initial public offering analysis for Salarius, please disclose the basis for using the market capitalization criteria and how the market capitalization for the selected companies compare to the value attributed to Salarius. Similarly, please quantify the implied equity values for the target companies used in the precedent M&A transaction analysis. Please disclose whether any companies or transactions that met the selection criteria were excluded from the analyses and why.**

The Company added disclosure to the section entitled “The Merger—Opinion of Flex Pharma’s Financial Advisor” regarding Wedbush’s basis for using the market capitalization criteria and how the market capitalization for the selected companies compare to the value attributed to Salarius. The Company also has quantified the implied equity values for the target companies used in the precedent M&A transaction analysis. In addition, the Company has disclosed whether any companies or transactions that met the selection criteria were excluded from the analyses and why.

Material U.S. Federal Income Tax Consequences..., page 158

12. **Please revise your disclosure to provide a firm conclusion as to what the material tax consequences of the transactions will be to investors, not what they are “intended” to be, “should” be or “generally” will be. Additionally, remove statements that assume the material tax consequences at issue. For guidance, refer to Section III of Staff Legal Bulletin No. 19.**

The Company revised its disclosure in the section entitled “Material U.S. Federal Income Tax Consequences of the Merger, the Reverse Stock Split and the Warrants” to provide a firm conclusion as to what the material tax consequences of the transactions will be to investors. The Company also has removed statements that assume the material tax consequences.

13. **Please revise the disclosure so that it clearly identifies and articulates the opinion being rendered by each of the counsels whose short-form opinion was filed as exhibits to the registration statement. For guidance, refer to Part III.B.2 of Staff Legal Bulletin 19.**

The Company revised its disclosure in the section entitled “Material U.S. Federal Income Tax Consequences of the Merger, the Reverse Stock Split and the Warrants” to clearly identify and articulate the opinion rendered by each of the counsels whose short-form opinion was filed as exhibits to the registration statement.

Salarius’ Strategy and Ongoing Programs, page 211

14. **Please revise this section to put into context your “speed-to-market strategy.” In this regard, we note your risk factor disclosures on pages 39 - 50 which indicates that you may need to perform additional clinical trials and clinical testing is expensive,**

time-consuming and uncertain as to outcome and that you may find it difficult to enroll patients in your clinical trials, which could delay or prevent you from proceeding with clinical trials of your product candidates.

The Company has updated the disclosure on page 212 relating to the development of SP-2577 in Ewing sarcoma patients to reflect the risks associated with such development and to delete the reference to “speed-to-market strategy” to avoid confusion.

SP-2577 Phase 1 Clinical Trials, page 212

15. **We note your disclosure that one patient has been treated at the first dose level and did not exhibit any drug-related grade 2 or greater adverse events during the 28-day cycle. Please clarify whether there were any serious adverse events related to SP-2577.**

There were no serious adverse events related to SP-2577. The Company has updated the disclosure on pages 213 and 214 accordingly.

Salarius Strategic Collaborations and License Agreement, page 213

16. **We note you have filed an exclusive license agreement with NuPotential, Inc. as an exhibit to the registration statement. Please disclose the material terms of this agreement. In your description of this agreement, please discuss the nature and scope of the licensed intellectual property; each parties rights and obligations; duration of the agreement and royalty term; and termination provisions.**

The Company has added disclosure of the material terms of this agreement on page 216. Please note that Salarius filed a confidential treatment request to redact certain terms contained in this agreement, including specific milestone payments and royalty rates, and has not yet received any comments on such request. The Company has omitted such specific milestone payments and royalty rates from its disclosure, consistent with the confidential treatment request.

Salarius Strategic Collaborations and License Agreement, page 213

17. **For each agreement discussed in this section, please expand your disclosure to include the material terms including the following: each parties' rights and obligations; financial terms, including the aggregate milestone payments and royalty rate or range not to exceed ten percent; duration of the agreement and royalty term; and termination provisions.**

The Company has expanded its disclosure of these agreements on pages 214 through 216 to include the material terms of each agreement. Please note that Salarius filed a confidential treatment request to redact certain terms contained in these agreements, including specific milestone payments and royalty rates, and has not yet received any comments on such request.

The Company has omitted such specific milestone payments and royalty rates from its updated disclosure, consistent with the confidential treatment request.

Exhibits

- 18. Refer to Exhibit 8.1. Counsel must opine on the tax consequences of the offering, not the manner in which they are described in the prospectus. Please file a revised opinion stating that the disclosure identified in the prospectus is the opinion of the named counsel. For guidance, please see Staff Legal Bulletin No. 19 at Sections III.B.2 and III.C.2.**

The Company revised its disclosure in the section entitled “Material U.S. Federal Income Tax Consequences of the Merger, the Reverse Stock Split and the Warrants” to clearly identify and articulate the opinion on the tax consequences of the offering rendered by each of the counsels whose short-form opinion was filed as exhibits to the registration statement.

Should you have any questions, please do not hesitate to call me at 212-768-6985 or my colleague, Thomas Redekopp, at 416-863-4511.

Very truly yours,

/s/ Walter Van Dorn
Walter Van Dorn

cc: Dr. William McVicar, Ph.D., Flex Pharma, Inc.