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

DIVISION OF
CORPORATION FINANCE

August 3, 2023

Joseph J. Sarret
Chief Executive Officer and Director
CohBar, Inc.
1455 Adams Drive, Suite 1308
Menlo Park, CA 94025

Re: CohBar, Inc.
Registration Statement on Form S-4
Filed July 3, 2023
File No. 333-273101

Dear Joseph J. Sarret:

We have reviewed your registration statement 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.

Registration Statement on Form S-4 filed July 3, 2023

Questions and Answers About the Merger
Will the common stock of the combined company trade on an exchange?, page 5

1. You disclose that CohBar has filed a listing application for the combined company's common stock with Nasdaq and that it is expected that such common stock will trade on the exchange. We also note Section 7.1(d) of the Merger Agreement provides that the approval of the listing of the additional shares of Parent Common Stock on Nasdaq shall have been obtained. Please revise the Q&A and the Letter to Stockholders to clarify whether the closing of the merger is conditioned upon Nasdaq's approval of the listing application. Disclose whether this condition is waivable and if so, indicate whether Nasdaq's determination will be known at the time that stockholders are asked to vote to approve the merger.

What are the material U.S. federal income tax consequences of the Merger to holders of CohBar capital stock?, page 7

2. Please revise to clarify, if true, that the US holders of CohBar equity will not recognize any gain or loss for U.S. federal income tax purposes as a result of the merger.

Prospectus Summary
CohBar, page 9

3. With reference to your disclosure on page 211, please revise the Summary and the Q&A if appropriate to explain that if the merger is completed, the combined company will focus on developing Morphogenesis' product candidates, and it is anticipated that the combined company will not continue to develop CohBar's legacy product candidates. Also, revise the second Q&A on page 4 to provide context for the discussion of the CVRs.

Morphogenesis, page 10

4. We note your disclosure referencing potential FDA accelerated approval designation and entry into a Special Protocol Assessment (SPA) Agreement. Revise to balance your Summary disclosures by clarifying that Morphogenesis' candidates have not qualified for such designation and that there is no guarantee that such designation will be granted. Also, revise to clarify that entry into an SPA Agreement with FDA may not lead to faster or less costly product development or a regulatory review or approval process, and does not increase the likelihood that your product candidate will ever receive marketing approval.

5. We note your disclosure that Morphogenesis is a Phase 2/3 clinical stage immuno-oncology company. In light of your disclosures on page 219 and 226-228, please remove the reference and clarify that your Phase 1b trial is on-going.

6. Please revise your discussion of the Merkel cell carcinoma program to highlight and explain the following:
   - Clarify the number of Merkel cell carcinoma patients that have been treated to date with the IFx-Hu2.0 cancer vaccine product candidate and briefly discuss the treatment response.
   - Disclose the estimated US Merkel cell carcinoma patient population.
   - Explain the term "adjunctive therapy."

The FDA or comparable foreign regulatory authorities may disagree with Morphogenesis' regulatory plans..., page 58

7. Please revise the risk factor to explain, if true, that Morphogenesis plans to obtain accelerated approval designation for some or all of its product candidates under the accelerated approval pathway and the impact to the company if accelerated approval does not materialize.

Risks Related to the Combined Company
The bylaws of the combined company will provide that..., page 94

8. We note that the bylaws of the combined company will provide that the U.S. federal district courts are the exclusive forum for any complaint asserting a cause of action arising under the Securities Act. Please revise your disclosure to state that there is uncertainty as to whether a court would enforce such provision. In this regard, we note that Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all suits brought to enforce any duty or liability created by the Securities Act or the rules and regulations thereunder.

The combined company's ability to use net operating loss carryforwards..., page 96

9. Please revise this risk factor to quantify the NOLs and other tax attributes that are or may become subject to limitation.

The Merger
Background of the Merger, page 106

10. Please revise the disclosure on page 107 to disclose the terms of Morphogenesis' initial non-binding indication of interest. Clarify whether CohBar management identified Morphogenesis as one of the top merger candidates as of November 8 and one of the top three candidates as of November 15. To the extent that CohBar management did not view Morphogenesis as the top or one of the top candidates, please discuss the reason(s).

11. Please revise to discuss in greater detail the negotiations concerning the contingent value rights and the stock purchase agreement with K&V Investment One.

12. Please also revise this section to explain the diligence that CohBar's management, board and advisors conducted concerning Morphogenesis.

13. With reference to the February 13, 2023 entry, describe the material differences between a traditional staggered sign-and-close reverse merger and simultaneous sign-and-close reverse merger structure. Explain which party sought the simultaneous sign-and-close structure and why. Also indicate when Mr. Fitzgerald first raised his concerns with this proposed structure.

14. We refer to the May 10, 2023 entry. Please revise to quantify the expected reduction to the net cash that CohBar would deliver under the staggered sign-and-close structure relative to the previously planned simultaneous sign-and-close structure. Explain how the parties concluded that Morphogenesis's valuation should be increased from $125 million to $130.6 million based on this decision. In this regard, it is unclear why the structural change resulted in an increase to the Morphogenesis valuation as opposed to a decrease in the CohBar valuation.

The Merger
CohBar's Reasons for the Merger; Recommendation of the CohBar Board, page 114

15. Please revise to provide additional context as to how the $25 million enterprise value ascribed to CohBar was derived.

16. Please tell us why the expected cash balances are blank. In this regard, please clarify whether the disclosure in the section reflects the board's view as of May 23 when it approved the merger agreement or whether the disclosure reflects its expectations at a different point in time.

Morphogenesis' Reasons for the Merger, page 120

17. Please tell us whether, and if so why, the Morphogenesis Board considered the additional financing to be received under the Securities Purchase Agreement to consist of additional financing "committed" from the Initial Financing and Second Financing." In this regard, we note based on your disclosure on page 2 and elsewhere that the Second Financing would occur, if ever, at the option of the Investor.

Opinion of CohBar's Financial Advisor, page 123

18. We note the disclosure on page 123 indicating that CohBar hired Ladenburg to render an opinion as to the fairness of the Exchange Ratio, from a financial point of view, to the holders of CohBar Common stock. Accordingly, please provide Ladenburg's analysis regarding the $25 million implied valuation of CohBar or advise.

19. We note your disclosure indicating that Ladenburg reviewed relevant financial and operating data provided by CohBar and Morphogenesis as well as "certain internal analyses." Please revise to clarify whether Ladenburg considered or utilized any financial or operating data to conduct one or more of the three principal financial analyses. If not, then also explain why it did not do so and further explain if/how this data factored into Ladenburg's fairness determination .

20. We note your references to "considerations and judgments" concerning historical and projected financial and operating characteristics and other factors that could affect the value of the Selected Publicly Traded Companies, Selected Precedent IPO Companies, target companies from the Selected Precedent M&A Transactions and Morphogenesis to which they were being compared. Please revise your disclosure in this section to describe such considerations and judgments made by Ladenburg in its comparable company and precedent transaction analysis.

Opinion of CohBar's Financial Advisor
Transaction Overview as of the Date of the Opinion
Implied Morphogenesis Valuation, page 125

21. Please provide the following information regarding Ladenburg's derivation of an implied valuation for Morphogenesis of $130.6 million.
    - Provide a reconciliation of the number of Morphogenesis shares of common stock on a "fully diluted, as converted treasury stock method basis" as discussed on page 125 (209,684,773 shares) to the sum of its preferred stock, common stock, warrants and stock options that were outstanding at March 31, 2023.
    - Explain how you determined the $0.62 per share value for Morphogenesis common shares.
    - Provide an illustration that shows how the 0.3114 Exchange Ratio was determined.
    - Confirm expected timing for the reverse stock split, which you appear to indicate will occur prior to or on the merger date, as discussed on page 263.

Director Positions Following the Merger, page 131

22. We note your disclosure concerning the two directors appointed by CohBar. We also note the disclosure on page 131 concerning Mr. Fitzgerald's May 3, 2023 statement that he would not resign from the board at closing. Please revise or advise to clarify Mr. Fitzgerald's role, if any, in the combined company following the closing of the merger.

Material U.S. Federal Income Tax Consequences of the Merger, page 136

23. Please include a tax opinion covering the material tax consequences of: (i) the merger to United States holders of Morphogenesis capital stock, (ii) the merger to United States holders of CohBar capital stock and (iii) the issuance of CVRs to US holders of CohBar capital stock. For guidance, refer to Staff Legal Bulletin No. 19 (Oct. 14, 2011).

24. With reference to the disclosure on page 137, please tell us whether there is significant doubt regarding whether the Merger qualifies as either a "reorganization" or a "contribution."

Material U.S. Federal Income Tax Consequences of the CVRs..., page 138

25. To the extent that there is a lack of authority directly addressing the tax consequences of the transaction, conflicting authority or significant doubt about the tax consequences of the transaction, counsel or accountant may issue a “should” or “more likely than not” opinion to make clear that the opinion is subject to a degree of uncertainty. For guidance please refer to Staff Legal Bulletin No. 19. Also, revise the Q&A disclosure on page 8 to highlight the tax consequences to the prospective CVR holders as opposed to the company's conclusion that the CVRs are a distribution of property.

Nasdaq Stock Market Listing, page 140

26. Please revise this section to disclose the "certain period of time" following the proposed reverse stock split wherein the combined company must maintain a minimum bid price of $4.00 in order for the Nasdaq listing application to be accepted.

Morphogenesis Executive Compensation
Summary Compensation Table, page 180

27. The sum of the compensation does not equal the amount in the "Total" column for Dr. Bianco in 2022. Please revise or explain your calculations.

Morphogenesis Pipeline, page 217

28. The pipeline table here and on page 225 should graphically reflect the actual, and not the anticipated, status of your product candidates as of the latest practicable date, as well as the material stages you will need to complete before marketing your products. Accordingly, please revise the tables to reflect that your IFx-2.0 candidate targeting advanced or metastatic Merkel cell carcinoma (“MCC”) remains in Phase 1b. In this regard, your disclosures on pages 219 and 227-228 indicate that this trial is on-going and that you only have preliminary results from that trial. Similarly, the arrow for IFx-2.0 in metastatic cancers indicates that the Phase 2 basket trial is underway even though your disclosure on page 218 indicates that Morphogenesis is "planning" the Phase 2 basket trial for Q4 2024. Also, revise the "Highlights" column to reflect that Morphogenesis must identify a lead candidate for IFx-3.0.

Cancer Vaccines
IFx Technology , page 221

29. Please revise the figure at the bottom of page 221 to ensure that all text is legible without the need for magnification.

Morphogenesis Development Program and Development Strategy, page 225

30. With respect to IFx-2.0, please revise the "Highlight" column of this table to be consistent with the table on page 217. Clarify, if true, that Morphogenesis plans to enter the Phase 2/3 and Phase 2 basket studies in 2024.

31. With reference to the pro forma information disclosed on page 282, please revise to discuss the planned allocation for the cash that will be available to the combined company upon closing.

Clinical Data
IFx-2.0 Clinical Trials , page 226

32. We note that your disclosures throughout this section include terms such as "complete

response," "partial response," "stable disease," "progressive disease," and "overall response rate." Please revise to define such terms, including how such responses were measured. Also, clarify the acronyms for these responses and explain the reference to "pCR" which appears on page 228. Additionally, please revise here, and elsewhere as appropriate, to explain that evidence of clinical activity and/or clinical response does not mean that the product candidate has or will demonstrate clinical efficacy or that it will prove to be safe as required to receive regulatory approval.

Phase 2/3 registration trial to be conducted under Accelerated Approval Pathway, page 226

33. Please revise the heading so that it does not imply that you have reached agreement with FDA concerning the accelerated approval pathway.

34. Explain briefly why you identify the prospective trial as a Phase 2/3 as opposed to a Phase 2 trial.

35. With reference to your disclosure on pages 243-244, please revise to disclose the basis on which you plan to seek accelerated approval. In this regard, please clarify whether you will seek approval by (i) establishing that the drug product has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit and/or (ii) that the drug product has an effect on an intermediate clinical endpoint that can be measured earlier than an effect on irreversible morbidity or mortality, or IMM. Also, revise the table on page 227 to specify the primary and secondary endpoints, or advise. Explain the references to FPI", "LPI" and "TLR."

Intellectual Property, page 233

36. Please revise your patent tables on pages 235 and 236 to include the type of patent protection granted for the products or technologies in each disclosed patent family (i.e., composition of matter, use, or process).

Licensed Intellectual Property Rights Relating to Delta Receptor Technology, page 235

37. Please revise your disclosure regarding Morphogenesis' license agreements with Moffitt Cancer Center and the West Virginia University Research Corporation to include a discussion of all material payment terms, including quantification of potential milestone payments segregated by development and commercial milestone payments, and the applicable royalty rates to be paid by each party. In the event a range is provided in place of the actual royalty rate, such range should be within ten percentage points.

Morphogenesis' Management's Discussion and Analysis of Financial Condition and Results of Operations

Results of Operations, page 265

38. Please provide a discussion and analysis of financial condition and results of operations

for the years ended December 31, 2022 and 2021. Refer to Item 303(b) of Regulation S-K.

Unaudited Pro Forma Condensed Combined Financial Information, page 279

39. Please correct the heading on page 282 to reference the unaudited proforma condensed combined balance sheet.

40. Please explain why the Contingent Value Rights to be issued in conjunction with the planned merger are not reflected in your pro forma financial statements.

41. Please revise your disclosure on page 285 to quantitatively illustrate how the Exchange Ratio was calculated.

Morphogenesis Inc. and Subsidiary
Notes to the financial statements
Note 9 - TuHURA acquisition, page F-50

42. Please describe and quantify the methods and assumptions used to determine the $15 million value for Morphogenesis common shares issued to acquire certain assets of TuHURA Biopharma, Inc.

Exhibits

43. Please file your license agreements with the Moffitt Cancer Center, and WVURC. Also file the Tuhura BioPharma Inc. asset acquisition agreement.

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.

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.

You may contact Franklin Wyman at (202) 551-3660 or Angela Connell at (202) 551-3426 if you have questions regarding comments on the financial statements and related matters. Please contact Lauren S. Hamill at (303) 844-1008 or Joe McCann at (202) 551-6262 with any other questions.

Sincerely,

Division of Corporation Finance
Office of Life Sciences

cc: Branden Berns