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July 2, 2021

Re: SOPHiA GENETICS SA
Draft Registration Statement on Form F-1
Submitted on May 24, 2021
CIK No. 0001840706

U.S. Securities and Exchange Commission
Division of Corporation Finance
100 F Street, N.E.
Washington, D.C. 20549

Attention: Ms. Irene Paik
Mr. Jason Drory

Dear Ms. Paik and Mr. Drory:

On behalf of our client, SOPHiA GENETICS SA (the "Company"), this letter sets forth the Company's responses to the comments provided by the staff (the "Staff") of the U.S. Securities and Exchange Commission relating to the Company's Draft Registration Statement on Form F-1 submitted on May 24, 2021 (the "Draft Registration Statement") contained in the Staff's letter dated June 22, 2021 (the "Comment Letter"). In response to the comments set forth in the Comment Letter, the Company has revised the Draft Registration Statement and is publicly filing its Registration Statement on Form F-1 (the "Registration Statement") together with this response letter. The Registration Statement also contains certain additional updates and revisions.

For the convenience of the Staff, each comment from the Comment Letter is restated in italics prior to the response to such comment. All references to page numbers and captions (other than those in the Staff's comments) correspond to pages and captions in the Registration Statement.

Draft Registration Statement on Form F-1 submitted on May 24, 2021

Prospectus Summary
Overview, page 1

1. *We note your disclosure in your prospectus summary that you "estimate the total addressable market opportunities in 2020 for [y]our current commercial clinical applications and for [y]our current biopharma applications were approximately $21 billion and $14 billion, respectively" and that you "estimate that [y]our clinical and biopharma applications targeted a $35 billion global total addressable market opportunity in 2020, $14 billion of which was in the United States." In addition, we note your statement that you believe that your SOPHiA platform "is one of the most widely used decentralized analytics platform globally for clinical genomics" and had $28.4 million in revenue for the year ended December 31, 2020. Please reconcile these statements by providing us the basis for your total addressable market and disclose any material assumptions and limitations associated with your estimate of the total addressable market.*

Response: The Company respectfully acknowledges the Staff's comment and has revised the disclosure on pages 138-140 of the Registration Statement to disclose the material assumptions and limitations associated with the Company's estimate of the total addressable market. In addition, the Company is submitting, under separate cover, the basis for the Company's statements regarding its total addressable market.

Overview, page 1

2. *We note that you highlight here that "[a]s of March 31, 2021, [you] served more than 750 hospital, laboratory and biopharma customers globally." Please also disclose the number of recurring platform customers as of a recent date.*

Response: The Company respectfully acknowledges the Staff's comment and has revised the disclosure on pages 2, 92 and 122 of the Registration Statement.

Overview, page 2

3. *We note your disclosure on page 2 that you commercialize your SOPHiA platform and related solutions, products and services as RUO and CE-IVD products. Please clarify here that in the United States, SOPHiA products are labeled and sold for research use only, and not for the diagnosis or treatment of disease. In addition, with reference to your disclosure on pages 154 and 156 regarding the RUO and CE-IVD designations, please briefly explain here the limitations placed on RUO products and the process by which your in vitro devices received a CE mark.*

Response: The Company respectfully acknowledges the Staff's comment and has revised the disclosure on pages 2, 92 and 122-123 of the Registration Statement.

Market and Industry Data, page 83

4. *We note your statements regarding market data used in the prospectus, including that the sources of the information do not guarantee the accuracy or completeness of the information and that investors are cautioned "not to give undue weight" to projections, assumptions and estimates. Please revise these statements to eliminate any implication that investors are not entitled to rely on the information included in your registration statement.*

Response: The Company respectfully acknowledges the Staff's comment and has revised the disclosure on page 84 of the Registration Statement.

Use of Proceeds, page 84

5. *We note your disclosure on page 104 that you remain obligated to pay your lender, TriplePoint, a fee upon the completion of this offering. To the extent the offering proceeds will be used to pay this obligation, please disclose the fee owed to TriplePoint here.*

Response: The Company respectfully acknowledges the Staff's comment and has revised the disclosure on page 85 of the Registration Statement.

Management's Discussion and Analysis of Financial Conditions and Results of Operations
Results of Operations, page 101

6. *We note the manufacturing, marketing and supply agreements (collaboration agreements) discussed on pages 145-147. If these had a material impact on your results of operations please revise to quantify the impact each period.*

Response: The Company respectfully acknowledges the Staff's comment and has revised the disclosure on pages 104 and 107 of the Registration Statement to quantify the impact of the Company's manufacturing and supply agreement with Integrated DNA Technologies, Inc. and the OEM supply agreement with Qiagen GmbH on the Company's results of operations (i.e., the Company's cost of revenue) for each period presented. The Company respectfully informs the Staff that the remaining manufacturing, marketing and supply agreements (collaboration agreements) discussed in the Registration Statement did not have a material impact on the Company's results of operations for periods presented.

Cost of Revenue, page 102

7. *Please revise to quantify each of the factors related to the increase in costs of revenue for 2020, including the write-off associated with the loss of the large customer.*

Response: The Company respectfully acknowledges the Staff's comment and has revised the disclosure on page 104 of the Registration Statement.

Research and Development Costs, page 102

8. *We note you attribute the increase in research and development costs in 2020 to several factors, including the development of new products and applications, expansion of your SOPHiA platform's multimodal capabilities and EHR integration. Please revise to quantify and discuss each of the reasons and contributing factors for the increase in research and development costs.*

Response: The Company respectfully acknowledges the Staff's comment and has revised the disclosure on pages 104 and 107 of the Registration Statement.

Revenue, page 102

9. *Please revise to separately discuss and quantify each of the factors contributing to the increase in SOPHiA platform revenue, including the amount attributable to the access model mix shift from dry lab to bundle access, growth in Alamut license revenue and ramp-up in your biopharma services revenue.*

Response: The Company respectfully acknowledges the Staff's comment and has revised the disclosure on pages 103-104 and 106 of the Registration Statement.

Business
Our SOPHiA Platform Architecture, page 121

10. *Please clarify the meaning of scientific or technical terms the first time they are used in order to ensure that lay readers will understand the disclosure. For example, please briefly explain what you mean by an "Extract Transform Load engine."*

Response: The Company respectfully acknowledges the Staff's comment and has revised the disclosure on page 127 of the Registration Statement. In addition, the Company has revised the disclosure throughout the Registration Statement to ensure that lay readers will understand the disclosure.

Biopharma Applications, page 128

11. *We note your disclosure that you began commercializing biopharma applications in 2019. Please provide additional disclosure here describing how your biopharma applications are being accepted in the biopharma market, including quantifying how many customers have used your biopharma applications.*

Response: The Company respectfully acknowledges the Staff's comment and has revised the disclosure on page 135 of the Registration Statement.

High Visibility and Predictability into Our Business, page 138

12. *We note your disclosure that, "[o]nce onboarded onto [y]our SOPHiA platform, [y]our customers tend to steadily increase their use of [y]our SOPHiA platform." However, we note your platform analysis volume by cohort excludes volume contributions from your integrated access customers*

due to the fact they are a "a small percentage of [y]our overall volume and utilize [y]our platform in an ad hoc manner." Please revise your disclosure to discuss how the integrated access model fits into your "land and expand" growth strategy or otherwise advise.

Response: The Company respectfully advises the Staff that the Company's integrated access customers contribute to a small percentage of the Company's overall volume and utilize the Company's platform in an ad hoc manner compared to the Company's dry lab and bundle access customers who typically do so in a recurring fashion. Consequently, the Company does not consider its integrated access model a material element of its "land and expand" commercial strategy. The Company further respectfully advises the Staff that it has revised the disclosure on pages 145-146 of the Registration Statement accordingly.

Platform Analysis Volume by Cohort - Steady "Land and Expand" Growth, page 138

13. *We note your graphic on page 138 depicting annual platform analysis volume of various customer cohorts over time. Please revise the graphic to quantify the annual platform analysis volume for each cohort for each year shown.*

Response: The Company respectfully acknowledges the Staff's comment and has revised the graphic on page 145 of the Registration Statement.

Biopharma Case Study, page 141

14. *We note your disclosure regarding your support of your customer's in-depth re-analysis of its proprietary clinical trial data using a multimodal approach, including your customer's objective. Please add additional disclosure here discussing any results or otherwise advise if the project is still ongoing.*

Response: The Company respectfully acknowledges the Staff's comment and has revised the disclosure on page 148 of the Registration Statement.

Patents, page 143

15. *With respect to material patents, please describe the specific products, product groups and technologies to which such patents relate (e.g. SOPHiA DDM, Alamut, etc.), the scope of your most significant patents, the jurisdictions in which they were issued, and when they will expire. If you do not believe you hold any material patents, please revise your disclosure accordingly.*

Response: The Company respectfully acknowledges the Staff's comment and has revised the disclosure on page 150 of the Registration Statement.

Normandie Valorisation—Exclusive License Agreements, page 144

16. *Please revise your disclosure here to clarify the product(s) for which you are required to pay the per analysis fee under the license agreement.*

Response: The Company respectfully acknowledges the Staff's comment and has revised the disclosure on page 152 of the Registration Statement.

Medical Device Regulatory Framework, page 150

17. *Given your global footprint as referenced on page 140, please provide a brief overview of the regulatory framework for any additional material jurisdictions in which you distribute your products and describe any limitations on your ability to commercialize your products in that jurisdiction.*

Response: The Company respectfully acknowledges the Staff's comment and has revised the disclosure on pages 164-165 of the Registration Statement.

Principal Shareholders, page 177

18. *Please revise footnote 2 to identify the natural persons who are the beneficial owners of the shares held by Generation IM Sustainable Solutions Fund III, L.P.*

Response: The Company respectfully informs the Staff that Generation IM Sustainable Solutions Fund III, L.P. is the record holder of the ordinary shares. The general partner of Generation IM Sustainable Solutions Fund III L.P. is Generation IM Sustainable Solutions III, GP Ltd, which is a wholly owned subsidiary of Generation Investment Management LLP, which is the investment manager of Generation IM Sustainable Solutions Fund III, L.P. Generation Investment Management LLP is controlled by a management committee that comprises three or more individuals. Pursuant to the so-called "rule of three," if voting or investment decisions with respect to issuer securities require a vote of a majority of three or more persons, none of them will be deemed the beneficial owner of those securities for purposes of Section 13(d). See Southland Corp. (July 8, 1987). Because the management committee of Generation Investment Management LLP has three or more individuals, none of which exercises investment or voting control over the Company's securities (except with respect to the shares in which he or she directly holds a pecuniary interest), none of them will be deemed the beneficial owner of those securities for purposes of Section 13(d). As such, no natural persons are required to be named in the Registration Statement.

The Company further informs the Staff that Balderton Capital VI, S.L.P. is record holder of the ordinary shares. The general partner of Balderton Capital VI, S.L.P. is Balderton Capital General Partner VI, S.a.r.l. Balderton Capital General Partner VI, S.a.r.l. is controlled by an executive committee that comprises three or more individuals. Because the executive committee of Balderton Capital General Partner VI, S.a.r.l. has three or more individuals, none of which exercises investment or voting control over the Company's securities (except with respect to the shares in which he or she directly holds a pecuniary interest), none of them will be deemed the beneficial owner of those securities for purposes of Section 13(d). As such, no natural persons are required to be named in the Registration Statement. Consequently, the Company has revised the disclosure on page 188 of the Registration Statement accordingly.

Notes to the Consolidated Financial Statements
25. Share-based Compensation, page F-38

19. *We note from page F-41 that the weighted average fair value of options granted in 2020 under the 2019 ISOP was $34.97 per share and from page F-39 that the weighted average exercise price of such options was $84.48 per share, which appears more consistent with the range of share prices of options granted in 2020 under this ISOP of $87.29-$97.31 per share (page F-40). Please explain the significant difference between the aforementioned weighted average fair value and weighted average exercise price. Once you have an estimated offering price or range, please explain to us the reasons for any differences between the recent valuations of your common stock leading up to the initial public offering and the estimated offering price.*

Response: The Company respectfully acknowledges the Staff's comment and will respond to the comment in a separate letter to the Staff.

General

20. *Please provide us with copies of all written communications, as defined in Rule 405 under the Securities Act, that you, or anyone authorized to do so on your behalf, present to potential investors in reliance on Section 5(d) of the Securities Act, whether or not they retain copies of the communications.*

Response: The Company respectfully informs the Staff that it has supplementally provided the Staff, on a confidential basis under separate cover, copies of all written communications presented to potential investors in reliance on Section 5(d) of the Securities Act.

* * *

Please do not hesitate to contact me at (212) 450-4135 or deanna.kirkpatrick@davispolk.com or Yasin Keshvargar at (212) 450-4839 or yasin.keshvargar@davispolk.com if you have any questions regarding the foregoing or if we can provide any additional information.

Very truly yours,

/s/ Deanna L. Kirkpatrick

Deanna L. Kirkpatrick

cc: Jurgi Camblong, Chief Executive Officer
Ross Muken, Chief Financial Officer
Daan Van Well, Chief Legal Officer
SOPHiA GENETICS SA

Mike Foley
Pierre-Alain Devaud
PricewaterhouseCoopers SA

Yasin Keshvargar
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