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

DIVISION OF
CORPORATION FINANCE

June 22, 2021

Jurgi Camblong, Ph.D., M.B.A.
Chief Executive Officer
SOPHiA GENETICS SA
Rue du Centre 172
CH-1025 Saint-Sulpice
Switzerland

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

Dear Dr. Camblong:

We have reviewed your draft 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 providing the requested information and either submitting an amended draft registration statement or publicly filing your registration statement on EDGAR. 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 the information you provide in response to these comments and your amended draft registration statement or filed registration statement, we may have additional comments.

Draft Registrant Statement on Form F-1 submitted 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.

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.

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.

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.

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.

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.

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.

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.

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.

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."

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

You may contact Jenn Do at 202-551-3743 or Brian Cascio at 202-551-3676 if you have questions regarding comments on the financial statements and related matters. Please contact Jason Drory at 202-551-8342 or Irene Paik at 202-551-3676 with any other questions.

Sincerely,

Division of Corporation Finance
Office of Life Sciences

cc: Yasin Keshvargar, Esq.