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November 19, 2021

VIA EDGAR

Al Pavot
Tyler Howes
Sasha Parikh
Tim Buchmiller
U.S. Securities and Exchange Commission
Division of Corporation Finance
100 F. Street, N.E.
Washington, D.C. 20549

Re: Vigil Neuroscience, Inc.
Draft Registration Statement on Form S-1
Submitted October 8, 2021
CIK No. 0001827087

Dear Mr. Howes:

This letter is being submitted on behalf of Vigil Neuroscience, Inc. (the "Company") in response to the comments of the staff of the Division of Corporation Finance (the "Staff") of the U.S. Securities and Exchange Commission (the "Commission") with respect to the Company's Draft Registration Statement on Form S-1 submitted on October 8, 2021 (the "DRS"), as set forth in your letter dated November 4, 2021 addressed to Dr. Magovčević-Liebisch, Chief Executive Officer of the Company (the "Comment Letter").

For reference purposes, the text of the Comment Letter has been reproduced herein with responses below each numbered comment. For your convenience, we have italicized the reproduced Staff comments from the Comment Letter. Unless otherwise indicated, page references in the Staff's comments refer to the DRS, and page references in the responses refer to the Company's Registration Statement on Form S-1 that is publicly filed with the Commission on November 19, 2021 (the "Registration Statement").

The responses provided herein are based upon information provided to Goodwin Procter LLP by the Company.

Prospectus Summary, page 3

1. ***We note from your disclosure on page 118 that the safety profile of VGL101 is currently being assessed in a six-month repeat-dose toxicology study in non-human primates, and from your disclosure on page 19 that you have not yet submitted an IND for VGL101. In addition, it is unclear from your current disclosure when you anticipate submitting an IND application. As such, it appears that VGL101 is still in pre-clinical development. However, the arrow in your pipeline table could suggest that you have completed pre-IND related activities for VGL101 for ALSP. Please shorten the arrow for VGL101 for ALSP to illustrate how far along you are in the Pre-IND process, as appropriate. Please also clarify in your disclosure when you anticipate submitting an IND for each indication shown in the pipeline table.***

RESPONSE: Following our submission of an investigational new drug application (IND) to the FDA to evaluate VGL101 in a Phase 1 trial, we received notice from the FDA that our IND was cleared for dosing VGL101 in healthy volunteers at doses up to 20 mg/kg with a partial clinical hold that prohibits evaluation of VGL101 at doses higher than 20 mg/kg. The partial clinical hold was placed based on the FDA's review of non-clinical data and in the absence of dose-limiting safety findings up to the highest dose tested of 200 mg/kg, which was identified as the No Observed Adverse Effect Level (NOAEL) in our non-human primate toxicology study. We do not believe the partial clinical hold will have a material impact on our current clinical development plans and timelines for ALSP as we expect to initiate our Phase 1 trial as planned in December 2021. Accordingly, the Company respectfully advises the Staff that it has revised the pipeline table and corresponding disclosure on pages 1, 3, 20, 25, 26, 85, 106, 108, 109, 116 and 130 of the Registration Statement in response to the Staff's comment.

2. ***We note the inclusion of therapeutics targeted at Alzheimer's Disease under the VGL101 heading in your pipeline table. Given the limited disclosure related to this program, please explain why it is sufficiently material to your business to warrant inclusion in your pipeline table. If it is material, please expand your disclosure in the Business section to provide a more fulsome discussion of this program, including a description of preclinical studies or development activities conducted. Alternatively, remove any programs that are not currently material from your pipeline table on pages 3 and 105.***

RESPONSE: The Company respectfully advises the Staff that, in addition to our current disclosure on page 109, it has revised the disclosure on pages 130, 131 and 143 of the Registration Statement in response to the Staff's comment to expand our disclosure around our planned Phase 1b biomarker-based, proof-of-mechanism clinical trial of VGL101 in genetically defined Alzheimer's disease patients with or without the relevant TREM2 variants, as well as our small molecule TREM2 agonist program for the treatment of more common neurodegenerative diseases, beginning with genetically defined subpopulations of AD patients.

3. ***We note your disclosure that pending safety results of the Phase 1 trial and discussions with the FDA, you plan to conduct a potentially registrational Phase 2/3 trial in ALSP patients. Given that you are in pre-clinical development, please revise your disclosure in an appropriate location to indicate the basis for your belief, at this time, that you may be eligible to conduct a combined Phase 2/3 registrational trial or revise your disclosure as appropriate.***

RESPONSE: The Company respectfully advises the Staff that it has revised the disclosure on pages 3, 109, 116 and 130 of the Registration Statement to indicate the basis for our belief that, at this time, we may be eligible to conduct a combined Phase 2/3 registrational trial in response to the Staff's comment.

Our Corporate History and Team, page 4

4. ***We note that you identify a "leading syndicate of investors" in your company in this section, however, some of these investors do not appear to be among the principal stockholders that are identified on page 187. Please relocate this disclosure from your prospectus summary to your* "Principal Stockholder" section. We note in this regard that the identification of the pre-IPO investors in your prospectus summary may appear to suggest that potential investors in your public offering consider investments made by the pre-IPO investors as a factor in making an investment decision without knowing, among other things, the amount of each pre-IPO investor's investment in total or on a per share basis, their investment strategies or whether those investors will continue to hold their shares in the future, as some of the pre-IPO investors may not be subject to the reporting requirements of Section 16 of the Exchange Act, and investors in your public offering will not necessarily know when some of the pre-IPO investors decide to sell any of their shares. In addition to relocating this disclosure, please limit any textual description of your pre-IPO investors in your "Principal Stockholders" section to the investors identified in that table.**

RESPONSE: The Company respectfully advises the Staff that it has revised the disclosure on pages 5 and 109 of the Registration Statement to clarify that certain, but not all, of these investors will be subject to the reporting requirements of Section 13 or Section 16 of the Exchange Act. In addition, the Company respectfully advises the Staff that it has added an additional risk factor on page 70 of the Registration Statement titled "*Our leading syndicate of investors in our Series A and Series B rounds may not be indicative of our investor-base following our initial public offering*" to clarify that we cannot guarantee that our leading syndicate of investors is or will be indicative of our investor-base following our initial public offering.

Risk Factors, page 12

5. ***We note your disclosure on page 178 that the administrator of the 2021 Plan is specifically authorized to exercise its discretion to reduce the exercise price of outstanding stock options and stock appreciation rights or effect the repricing of such awards through cancellation and re-grants without stockholder consent. Please include appropriate risk factor disclosure, including whether proxy advisory firms could find such repricing without stockholder approval contrary to a performance-based pay philosophy.***

RESPONSE: The Company respectfully advises the Staff that it has added an additional risk factor titled "*The administrator of the 2021 Plan is authorized to exercise its discretion to effect the repricing of stock options and stock appreciation rights and there may be adverse consequences to our business if the administrator of the 2021 Plan exercises such discretion*" on pages 69 of the Registration Statement in response to the Staff's comment.

Management's Discussion and Analysis of Financial Condition and Results of Operations Critical Accounting Policies and Significant Judgements and Estimates Options Grants, page 100

6. ***Please disclose the additional stock compensation expense you recorded in June and September as a result of your reassessment of the fair value of your option grants.***

RESPONSE: The Company respectfully advises the Staff that it has revised the disclosure on page 104 of the Registration Statement to clarify that the June and September retrospective valuations were utilized to calculate the estimated fair value of these equity awards as of their respective grant dates for the purpose of calculating stock compensation expense for accounting purposes.

Supplementally, the Company advises the Staff that no additional stock compensation expense was recorded in June 2021 for the awards granted in July 2020, November 2020 and February 2021 or in September 2021 for the awards granted in September 2021 based on the retrospective valuations as these valuations were the only valuations used to determine the stock compensation expense for accounting purposes as of the respective grant dates. The Company notes these retrospective valuations were completed prior to the Company completing its final close processes for the respective reporting periods. As such, there was no cumulative adjustment recorded in June 2021 or September 2021 related to the retrospective valuations.

Additionally, the Company advises the Staff that if the Company had previously recorded stock compensation expense for the awards granted in July 2020, November 2020, February 2021 and September 2021 based on the fair value of the common stock that the Company's board of directors reasonably determined as of the respective grant date then using the retrospective valuations of the common stock for these same awards as of the respective grant dates would have resulted in higher stock compensation expense during those reporting periods. Based on the retrospective fair value assessments of the Company's common stock being used to determine the fair value of the awards, the incremental stock-based compensation expense resulting from the increase in the estimated fair value of the award as of each respective grant date would have been immaterial for the period from June 22, 2020 (inception) to September 30, 2020 and for the period from June 22, 2020 (inception) to December 31, 2020 and would have been approximately $0.6 million for the nine months ended September 30, 2021.

Executive Officers and Directors, page 160

7. ***For the background disclosure of Dr. Magovcevic-Liebisch, please indicate the principal business of Ipsen. Refer to Regulation S-K Item 401(e)(1).***

RESPONSE: The Company respectfully advises the Staff that it has revised the disclosure on page 168 of the Registration Statement to indicate that Ipsen is a pharmaceutical company.

Role of the Board in Risk Oversight, page 165

8. ***Please clarify what risks you are referring to where you indicate the "four risks more fully discussed in the section entitled 'Business.'"***

RESPONSE: The Company respectfully advises the Staff that it has revised the disclosure on page 173 of the Registration Statement in response to the Staff's comment.

Principal Stockholders, page 187

9. ***Please revise footnote 5 to your table to identify the natural persons who are the beneficial owners of the shares held by Hatteras Venture Partners VI, LP.***

RESPONSE: The Company respectfully advises the Staff that it has revised footnote five on page 198 to identify the natural persons who are the beneficial owners of the shares held by Hatteras Venture Partners VI, LP.

General

10. ***Please supplementally 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 advises the Staff that it has 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, whether or not they retain copies of such communications.

Sincerely,

/s/ Gabriela Morales-Rivera

Gabriela Morales-Rivera

cc: Ivana Magovčević-Liebisch, *Vigil Neuroscience, Inc.*
Jennifer Ziolkowski, *Vigil Neuroscience, Inc.*
Kingsley L. Taft, *Goodwin Procter LLP*
Jacqueline Mercier, *Goodwin Procter LLP*