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

DIVISION OF
CORPORATION FINANCE

July 16, 2021

Ian McDonald
Chief Executive Officer and Director
Bright Minds Biosciences Inc.
Suite 1500, 1055 West Georgia Street, PO Box 11117
Vancouver, British Columbia, Canada, V6E 4N7

Re: Bright Minds Biosciences Inc.
Registration Statement on Form 20-FR12G
Filed June 17, 2021
File No. 000-56296

Dear Mr. McDonald:

We have reviewed your filing 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 these comments within ten business days by providing the requested information or advise us as soon as possible when you will respond. If you do not believe our comments apply to your facts and circumstances, please tell us why in your response.

After reviewing your response and any amendment you may file in response to these comments, we may have additional comments.

Registration Statement on Form 20-F

Report of Independent Registered Public Accounting Firm, page 0

1. We noted that your Independent Registered Public Accounting Firm opined on consolidated statements of comprehensive loss, changes in shareholders' equity and cash flows for the year and period in the 16-month period ended September 30, 2020. It is unclear if your Independent Registered Accounting Firm has audited the financial statements for the period from May 31, 2019 (date of incorporation) to September 30, 2019 on a stand-alone basis. Please have your Independent Registered Public Accounting Firm revise their report to provide an opinion on the financial statements for the period from May 31, 2019 (date of incorporation) to September 30, 2019.

Annual Financial Statements
Consolidated Statements of Comprehensive Loss, page 2

2. It appears that you are presenting your expenses by function under paragraph 103 of IAS 1. Please remove the share-based compensation line item from your statements of comprehensive loss and instead present the expense related to share-based payment arrangements according to their function, or tell us why no revision is necessary.

Item 3. Key Infromation
Selected financial data, page 6

3. Please revise to disclose the currency used in your selected financial data.

Item 4. Information on the Company, page 19

4. We note your claim here and in *Principal Products*, page 21, that your Company continues to create "a pipeline of best-in-class 5-HT agonists" and your Company's lead 5-HT2 drug portfolio candidate is a "best in class synthetic 5-HT2C receptor agonist." This term suggests that your product candidates are effective and likely to be approved. The FDA and equivalent foreign regulatory agencies have sole authority to determine safety and efficacy. Please revise your disclosure to remove all statements indicating that your product candidates are safe or effective. For example:
   - The Company's patented, lead product candidates have significant advantages of next generation drugs; and
   - The off label use of and pilot clinical trial data psilocybin extracts and MMA illustrate the potential for advancing serotoninergic therapies.

5. In order to direct comparisons to other drugs currently available or in development, such comparisons must be based on head to head trials. Given that you have not yet conducted any clinical trials for your product candidates, the following statements are inappropriate and should be removed:
   - These designer drug characteristics include reduced cardiac toxicity, improved pharmacokinetics with greater brain penetrance and shorter half-life, as well as higher oral bioavailability. . ."
   - "A significant advantage of the Bright Minds molecules is their selectivity for specific 5-HT2A and 5-HT2C receptor subtypes, while avoiding the valvulopathy related to 5-HT2B receptor agonist activity."

   Please revise this section to include the studies and data that were conducted to ascertain this information.

6. Please revise your description of psilocybin and MDMA pilot clinical trial data to eliminate the term "encouraging." You may describe the the referenced trials and present the objective results that lead you to conclude that the results are encouraging.

7. Please describe your preclinical trials conducted to date for each product candidate included in your pipeline table in page 21. Your descriptions should include a description

of the trial design and an objective description of your results.

8. Please revise your pipeline chart to include one column depicting pre-clinical trials and include additional columns for Phase 2 and Phase 3. Additionally, we note your inclusion of your 5-HT2A + 5-HT2C product candidate. Please revise the indication to disclose the specific chronic pain disorder.

9. We note your disclosures here and in *Principal Products*, page 21, regarding psychedelic substances. By way of example, we note your statements that:
   - "Bright Minds does not advocate for the legalization of psychedelic substances for recreational use or otherwise, and its business is oriented to the discovery of novel serotonergic therapeutics for significant unmet clinical needs rather than the use of substances such as psilocybin or other psychedelics as recreational agents."
   - "Bright Minds does not have any direct or indirect involvement with illegal selling, production or distribution of substances in jurisdictions in which it operates."
   - "The Company believes its portfolio of selective 5-HT receptor agonists do not face competition from the non-selective 5-HT agonist psychedelic drug psilocybin."

   These disclosures seem to suggest that Bright Minds platform may include controlled substances. While the mechanisms and targets of your platform are explained, the identity of your actual product candidates are unclear. Accordingly, please revise this section to clarify what your product candidate is. Additionally, if the Company's product candidates include controlled substances, please add a section indicating the foreign and domestic drug laws that the Company will have to navigate to gain approval and detailing how the Company plans to meet any additional requirements.

Patents and Patent Applications, page 22

10. Your disclosure on page 22 indicates that on May 26, 2020, the Company signed an agreement (the "Roth Kozikowski Agreement") to license certain intellectual property from UIC. Subsequently, on April 23, 2021, the Company entered into an exclusive license agreement with UIC and obtained an exclusive license to the patents and certain patent applications contemplated under the Roth Kozikowski Agreement. Please file the agreements described in this section as exhibits to the registration statement. Additionally, describe all material terms of both agreements, including amounts paid to date, future potential payments, royalty provisions, term and termination provisions.

Summary Compensation Table, page 43

11. Please update your table to include compensation to Dr. Shreeniwas and Dr. Kozikowski pursuant to the respective consulting agreements.

Security Ownership of Certain Beneficial Owners and Management, page 52

12. Please expand your footnote disclosures to identify the person or persons with voting and investment control of the shares held by Sphera Global Healthcare management and OrbiMed Advisors LLC.

Item 9. The Offer and Listing, page 54

13. Please clarify if you have applied for listing on Nasdaq and whether your registration is conditioned on obtaining such listing.

Item 19. Exhibits , page 67

14. Please file the independent consulting agreements with Dr. Kozikowski and the corporation controlled by Dr. Shreeniwas pursuant to which Dr. Kozikowski will serve as your Chief Science Officer and Dr. Shreeniwa will serve as your Chief Medical Officer.

General

15. Pursuant to Section 12(g)(1) of the Exchange Act, your Form 20-FR12G will become effective automatically 60 days after the initial filing date. At that time, you will be subject to the applicable reporting requirements of the Exchange Act. In addition, we will continue to review your filing until all of our comments have been addressed. If the review process has not been completed before the effectiveness date you should consider withdrawing the Form 20-FR12G unless you are required to register a class of equity securities under Section 12(g).

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.

You may contact Eric Atallah at (202) 551-3663 or Lynn Dicker at (202) 551-3616 if you have questions regarding comments on the financial statements and related matters. Please contact Fredrick Philantrope at (202) 551-6875 or Suzanne Hayes at (202) 551-3675 with any other questions.

Sincerely,

Division of Corporation Finance
Office of Life Sciences

cc: Michael Shannon, Esq.