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

DIVISION OF
CORPORATION FINANCE

October 6, 2022

Christopher Furman
Chief Executive Officer
Vitro Biopharma, Inc.
3200 Cherry Creek Drive
Suite 720
Denver, CO 80209

Re: Vitro Biopharma, Inc.
Registration Statement on Form 10
Nile No. 000-17378
Filed on September 12, 2022

Dear Christopher Furman:

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.

Form 10-12G filed September 12, 2022

Summary
Our Science, page 1

1. Please remove all statements, discussions and indications the statement that your product candidates and AlloRx stem cells, or may be, safe or effective. Such conclusions are in the sole authority of the FDA or equivalent foreign regulators. For example:
   - On page 1, the discussion that begins "In preclinical and clinical studies conducted by third-parties, AlloRx Stem Cells and equivalent UC-derived MSC therapy product candidates have exhibited therapeutic benefits..."
   - On page 63 "As compared to AlloRx to other MSCs, we believe AlloRx Stem Cells may have increased potency, mobility, differentiation capacity , immunomodulation and viability based on our pre-clinical studies and research which is supported by

third party research and clinical studies of UC-derived MSCs."

- On page 63 "In preclinical and clinical studies conducted by third parties, AlloRx Stem Cells ... have exhibited benefits we believe result from various mechanisms of action..." that they may "have far broader therapeutic potential and could be developed . . . to effectively treat a wide range of inflammatory and autoimmune disorders," and that your products are "[w]ell-tolerated" and have "minimal side effects."

Please note that you may include objective data resulting from your clinical and preclinical trials but may not draw conclusions related to safety and efficacy. To the extent that you include objective data from clinical trials conducted by third parties, identify the parties and the indications the third party was using AlloRx or equivalent UC-derived MSC therapy product candidates to treat.

2. Please explain the relevance of your statement that 300 subjects have been treated with your AlloRx Stem Cells and identify where they were treated, who was conducting the clinical trials and the target indications. To the extent known, disclose whether there were any serious adverse events reported and any objective data collected from such trials. If such information is not known, please clarify that the results are unknown.

Our Lead Product Candidate and Pipeline, page 2

3. Please revise your table with respect to Pitt Hopkins and Long COVID to ensure that your arrows do not appear to depict that Phase 1 is complete. While you are not planning to conduct a separate Phase 1 trials, it is not appropriate for the table to indicate that Phase 1 trials have been completed.

4. Your pipeline table should be limited to your material products and indications. Given the early stage of your development of AlloRx for Alzheimer's Disease and that it was not identified as one of your four core development plans, please tell us why you consider it to be a material program and disclose the next milestones for this therapeutic indication

Management's Discussion and Analysis of Financial Condition and Results of Operation, page 3

5. Please address the following regarding the fluctuations in your Cost of goods sold and Gross profits line items:
   - Revise to more clearly address the changes between periods of your cost of good sold, quantifying the significant drivers.
   - Revise to specifically address the significant difference in gross profit percentages between your annual and interim periods presented.
   - Revise your MD&A to specifically quantify the amounts related to inventory written off and identify the reasons for such write-offs.
   - Revise your footnotes to provide a rollforward of your inventory obsolescence reserve and to disclose your accounting policies for determining how to determine the amount of reserve necessary.

6. Revise your discussions of research and development expenses to more clearly identify

the nature of the expenses recorded, identify the projects driving the expenses reported, and why there was no research and development performed during 2020.

Our Strategy, page 66

7. We note your disclosure that you have "established . . . collaborative relationships with esteemed third-party investigators . . . for [y]our Phase 1/2a trials for PTHS and Long COVID[.]" Please revise your disclosure to describe your agreements with these parties, including all material provisions. File the agreements as exhibits or explain the basis for your conclusion that you are not required to file them as exhibits.

Preliminary Tolerability Data for AlloRX Stem Cells, page 68

8. Please revise the discussion to identify the parties that treated patients with AlloRx Stem Cells and the circumstances related to the treatment, including patient symptoms and objective information with respect to symptoms following treatment and whether other treatments were administered in conjunction with AlloRx Stem Cells. To the extent that data related to specific circumstances related to patient symptoms is not available, limit the discussion to tolerability.

Joint Operating Agreement with European Wellness, page 81

9. Please expand your disclosure to describe each party's material obligations under the agreement. For example, who will conduct preclinical research, submit INDs, conduct and clinical trials? Who has commercialization rights? Are there any royalty of licensing fees provided for in the agreement?

Principal Stockholders, page 116

10. Please disclose the natural person or persons who hold the sole voting and investment power of the common stock held by the James R. Musick Trust.

Financial Statements
Pro Forma Financial Statements, page F-3

11. Please revise either your tabular presentation to show each adjustment to each line item separately, or revise the related footnotes to quantify each adjustment so that investors can better understand each of your pro forma adjustments.

Note 1. Nature of Organization and Summary of Significant Accounting Policies, page F-10

12. You list several of the Company's different revenue streams here on page F-10, including sale of research and development product, sale of therapeutic product, collaborative development project, Fitore product sales online, and InfiniVive product sales. Please address the following:
    - Revise your footnotes to provide a tabular breakdown quantifying each of these revenue streams.

- Revise your MD&A to quantify and more clearly address the changes between periods for each of these revenue streams.

13. Please address the following regarding your deferred revenue section on page F-10 and your collaboration with European Wellness:
    - Revise your financial statements to disclose the significant terms of the Joint Operating Agreement with European Wellness as well as your related accounting policies.
    - Revise your footnotes as well as your MD&A to quantify any expenses related to the collaboration, to clearly identify the line items in which they are reflected, and to highlight its impact on changes in such line items between periods.

Note 4. Acquisitions, page F-14

14. Your disclosure indicates that members of your management and significant shareholders appear to have had significant control over Fitore and InfiniVive. Please address the following:
    - Revise your Certain Relationships and Related-Party Transactions section on page 112 to better explain the ownership percentages before and after the mergers and to clearly identify the various inherent conflicts of interest in these transactions.
    - Please provide us with your analysis as to whether the acquisitions of Fitore and InfiniVive were transfers of entities under common control.

15. Please address the following:
    - You disclose on page 54 that you recently terminated the chief executive and all other employees of Fitore and that consequently, you expect that sales of Fitore products will be limited in the future. Please revise your MD&A to identify the date they were terminated, and discuss the trends in such sales experienced.
    - Tell us in detail and revise your footnotes and MD&A to discuss how you evaluated the related inventory, fixed assets, and intangibles for impairment.
    - Tell us how you considered whether Fitore and Infitivive represent separate operating segments under ASC 280.

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 Julie Sherman at 202-551-3640 or Kevin Vaughn at 202-551-3494 if you have questions regarding comments on the financial statements and related matters. Please contact Joshua Gorsky at 202-551-7836 or Suzanne Hayes at 202-551-3675 with any other questions.

Sincerely,

Division of Corporation Finance
Office of Life Sciences