

November 7, 2022

Tyler Howes  
Division of Corporation Finance  
Office of Life Sciences  
Securities and Exchange Commission  
100 F Street, NE  
Washington, D.C. 20549

**Re: BullFrog AI Holdings, Inc.  
Registration Statement on Form S-1  
Filed October 19, 2022  
CIK No. 0001829247**

Dear Mr. Howes:

On behalf of BullFrog AI Holdings, Inc. (the "Company"), this letter responds to comments provided by the staff of the Division of Corporation Finance, Office of Life Sciences (the "Staff") of the Securities and Exchange Commission (the "Commission") to the undersigned on November 3, 2022 Registration Statement on Form S-1 (the "Registration Statement"), which was submitted to the Commission on October 19, 2022.

Concurrent with the submission of this letter, the Company is filing via EDGAR Amendment No. 1 to the Registration Statement ("Amendment No. 1"), which reflects the Company's responses to the comments received by the Staff and certain updated information. We have also enclosed a courtesy copy of Amendment No. 1 marked to indicate changes from the Registration Statement, as Exhibit A. For your convenience, the Company is also delivering via email a copy of this letter and its enclosures.

Form S-1 filed October 19, 2022

Our bFLEAP Analytics Platform, page 3

1. *We refer to the updated disclosure you provide concerning a new JHU-APL license which you executed on July 8, 2022. Please revise to describe the additional technology that you licensed so that it is clear whether the technology relates solely to development of your AI/ML platform and/or whether it includes intellectual property covering new drug programs. In this regard, we note that your revised Use of Proceeds disclosure on page 23 references planned allocations to "newly licensed drug programs" and that you also removed disclosure indicating that you planned to use offering proceeds to fund the Mebendazole and siRNA programs, which are the only two drug programs highlighted in the Summary and explained in the Business section.*

Response: The Company respectfully acknowledges the Staff's comment and has revised the disclosure so that it is clear that the technology relates solely to development of our AI/ML platform in Amendment No.1.

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Johns Hopkins University - Mebendazole License, page 5

2. *We note your revised disclosure in response to prior comment 2 and reissue. It remains unclear what basis you have to state that your Phase 1 trial assessed efficacy. Please remove the statement or revise to explain whether the Phase 1 trial was powered to assess efficacy and whether the results were statistically significant.."*

Response: The Company respectfully acknowledges the Staff's comment and has removed the statement that our Phase 1 trial assessed efficacy throughout the filing in Amendment No.1.

Planned Reverse Stock Split, page 6

3. *We note that you intend to affect a 1-for-7 reverse stock split of your common stock prior to the effectiveness of the offering. We remind you that in accordance with SAB Topic4:C, you will need to revise your financial statements and your disclosures throughout the filing to give effect to the expected stock split. Your auditor's report must also be updated to reflect the reverse stock split in accordance with Auditing Standard (AS) 3110.05..*

Response: The Company respectfully acknowledges the Staff's comment and has provided additional disclosure throughout Amendment No.1. that, unless otherwise noted, the share and per share information in the prospectus reflects, other than in our historical financial statements and the notes thereto, a proposed reverse stock split of the outstanding common stock of the Company as of the date of the prospectus at an assumed 1-for-7 ratio to occur immediately following the time when the registration statement of which the prospectus forms a part is declared effective by the Securities and Exchange Commission but prior to the listing of our common stock on Nasdaq and the closing of the offering. Based on conversations with the Staff, we have also made it clear that the reverse split will not occur prior to the effectiveness of the Registration Statement. Other than in the financial statements and notes thereto, all share data throughout the S-1 gives effect to the reverse stock split.

Capitalization, page 23

4. *Your introduction to your capitalization table indicates that the table sets forth your cash and cash equivalents as of June 30, 2022. Please revise to indicate that it also presents your capitalization and indebtedness as of this date..*

Response: The Company acknowledges the Staff's comment and has revised the introduction to the capitalization table to indicate that it also presents capitalization and indebtedness on page 23 in Amendment No.1.

Use of Proceeds, page 23

5. *We note your revised disclosure in response to prior comment 4. Please further revise your Use of Proceeds section to identify each newly licensed drug program that you plan to fund and the attendant dollar amount attributable to each program. Also, state how far in the development process you estimate the allocated proceeds from this offering will enable you to reach for each newly licensed drugs. Please also revise to set forth the interest rate and maturity of any indebtedness to be discharged with the proceeds from this offering. If any of the indebtedness to be discharged was incurred within one year, describe the use of the proceeds of such indebtedness other than short-term borrowings used for working capital. Refer to Item 504 of Regulation S-K for guidance.*

Response: The Company respectfully acknowledges the Staff's comment and has revised its disclosure on page 23 in Amendment No. 1 to address the Staff's comment.

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Business

Our Products, page 33

6. *We note your revised disclosure in response to prior comment 6 and reissue in part. Please replace the “Current Market” header on this chart with a more appropriate description, as disclosure elsewhere indicates that neither of your clinical candidates are currently approved for commercial sale. Please also revise this section to describe any development activities you have conducted for the siRNA program. In this regard, you indicate that the program is currently in the preclinical stage of development but there is no discussion of what work has been conducted, is currently being conducted or is planned for the future. To the extent you have not yet conducted any development activities on this program, please revise to make this point clear throughout the prospectus.*

Response: The Company respectfully acknowledges the Staff’s comment and has revised its disclosure on page 33 in Amendment No. 1. to replace the “Current Market” header and to specify that to date the Company has not yet initiated development activities or IND-enabling studies on siRNA.

Our Market Opportunity, page 36

7. *We note your revised disclosure in response to prior comment 7 and reissue in part. Please further revise this section to explain what steps you will need to take before you are able to commercialize the product candidates discussed in this section. For instance, please explain that it may be costly or difficult to acquire intellectual property rights to the failed drugs and that you may need to conduct significant preclinical work and clinical trial work and obtain FDA approval prior to any commercialization efforts.*

Response: The Company respectfully acknowledges the Staff’s comment and has provided additional disclosure on page 36 in Amendment No. 1 to explain what steps we will need to take before we are able to commercialize the product candidates discussed in this section.

Intellectual Property, page 37

8. *We note your revised disclosure in response to prior comment 8 and reissue in part. Please revise to include the expiration dates or potential expiration dates, if granted, for each patent or patent application licensed from George Washington University that is disclosed in this section..*

Response: The Company respectfully acknowledges the Staff’s comment and has revised the Intellectual Property table on page 37 in Amendment No.1. to include the requested information for its patents. In addition, the Company has provided an introduction to the table to clarify that The provisional patent numbers 63/113,745 and 63/147,141 were both converted into a single PCT application (PCT/US2021/059245) with an expiration date of November 12, 2041, as shown in table.

Please do not hesitate to contact our counsel Arthur Marcus at (212) 930-9700 with any questions or comments regarding this correspondence. Thank you.

Sincerely,

/s/ Vininder Singh

Chief Executive Officer

cc Arthur Marcus, Esq.

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