April 10, 2023

Sean Wirtjes Chief Financial Officer Rapid Micro Biosystems, Inc. 1001 Pawtucket Boulevard West, Suite 280 Lowell, MA 01854

Biosystems, Inc. fiscal year ended December 31, 2022

2023

Re: Rapid Micro Form 10-K for the Filed March 10, File No. 001-40592

Dear Sean Wirtjes:

We have limited our review of your filing to the financial statements and related disclosures 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 to these comments, we may have additional comments. Form 10-K for the fiscal year ended December 31, 2022 Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations Key business metrics, page 64 On page 65 you set 1. forth that validation of a system takes anywhere from three to nine months and on page 70 you reference the impact to validation from coronavirus. Based on the table, it appears that a number of systems placed in 2021 were not validated as of December 31, 2022. As it relates to these 2021 systems, please describe for us in further detail: the reasons for any systems that were placed in 2021 and not validated as of December 31, 2022; the date revenue was recognized and the date the system was ultimately validated, for each of these 2021 systems; how the Growth Direct system is fully functional for use by the customer upon delivery without validation services, as set forth on page 66; Sean Wirtjes LastNameSean Wirtjes FirstName Biosystems, Inc. Rapid Micro Comapany April NameRapid Micro Biosystems, Inc. 10, 2023 April 210, 2023 Page 2 Page FirstName LastName whether these 2021 systems outlined in the table were in actual use prior to being validated; how you considered the guidance in ASC 606-10-25-21(c) in the accounting for your systems; and

the significant terms of your 2021 arrangements. Provide us a copy of your actual 2021 contractual arrangement. Item 15. Exhibits 32.1 and 32.2, page 80 2. We note that your certifications filed as Exhibits 31.1 and 31.2 do not include paragraph 4(b) and the introductory language in paragraph 4 referring to internal control over financial reporting. Please file an amendment to your annual report that includes certifications that conform exactly to the language set forth within the Exchange Act Rule 13a-14(a). Please note that you may file an abbreviated amendment that consists of a cover page, explanatory note, signature page, and paragraphs 1, 2, 4, and 5 of the certification. Consolidated Financial Statements Revenue Recognition, page F-14 We note your contracts may include multiple performance obligations. Please revise your revenue recognition disclosure in future filings so that users can understand any impact between recurring and non-recurring revenues from your allocation of the transaction price. In this regard, please disclose the qualitative and quantitative information about the significant judgments, and changes in judgments, that significantly affect the determination of the amount and timing of revenue, as set forth in ASC 606-10-50-1(b) and 606-10-50-17(b). Please provide us any proposed disclosure. We note payment terms for customer orders are typically between 30 to 4. 90 days after the shipment or delivery of the product. Please clarify for us and in future filings whether these are the payments terms for all performance elements in a multiple element arrangement. Refer to ASC 606-10-50-12(b). 5. Please clarify for us and in future filings whether your consideration is variable as set forth in ASC 606-10-32-5 through 32-9 and whether your estimate of variable consideration is typically constrained in accordance with paragraphs ASC 606-10-32-11 through 32-13. Refer to ASC 606-10-50-12(b) for the required disclosure. In closing, 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. Sean Wirtjes Rapid Micro Biosystems, Inc. April 10, 2023 Page 3 You may contact Michael Fay at 202-551-3812 or Brian Cascio, Accounting Branch Chief, at 202-551-3676 with any questions. Sincerely,

FirstName LastNameSean Wirtjes Finance Comapany NameRapid Micro Biosystems, Inc. Applications and April 10, 2023 Page 3 FirstName LastName Division of Corporation Office of Industrial Services