

November 30, 2022

Via EDGAR Submission

Securities and Exchange Commission
Division of Corporation Finance – Office of Life Sciences
100 F Street, NE
Washington, DC 20549

Attention: Lauren Hamill
Tim Buchmiller

**Re: Syros Pharmaceuticals, Inc.
Registration Statement on Form S-3
Filed October 14, 2022
File No. 333-267888**

Ladies and Gentlemen:

On behalf of Syros Pharmaceuticals, Inc. (the “Company”), we are responding to the comment contained in the letter dated October 28, 2022 from the staff (the “Staff”) of the Securities and Exchange Commission to Gerald E. Quirk, Esq., the Company’s Chief Legal Officer, relating to the Registration Statement on Form S-3 referenced above (the “Registration Statement”). In response to the Staff’s comment, the Company has revised the Registration Statement and is submitting herewith for filing an Amendment No. 1 to the Registration Statement (the “Revised Registration Statement”) with this response letter.

The response set forth below is based upon information provided to Wilmer Cutler Pickering Hale and Dorr LLP by the Company. For convenience, the response is keyed to the numbering of the comment and the heading used in the Staff’s letter. Where appropriate, the Company has responded to the Staff’s comments by making changes to the disclosure in the Registration Statement as set forth in the Revised Registration Statement.

Wilmer Cutler Pickering Hale and Dorr LLP, 60 State Street, Boston, Massachusetts 02109

Beijing Berlin Boston Brussels Denver Frankfurt London Los Angeles New York Palo Alto San Francisco Washington

On behalf of the Company, we advise you as follows:

General

- We note that you filed a current report on Form 8-K on September 16, 2022 in connection with the completion of your acquisition of Tyme Technologies, Inc., and that this 8-K is incorporated by reference into your registration statement on Form S-3. You indicated in that Form 8-K that the financial statements of the acquired business and pro forma financial information required by Item 9.01(a) and (b) of Form 8-K would be filed by amendment within 71 days. Please note that we will not be in a position to accelerate the effective date of this registration statement until you have filed the required financial statements and pro forma financial information. Refer to the Instruction to Item 9.01 of Form 8-K. It also appears that such incorporation by reference would require that an auditors' consent be provided for the incorporation by reference into this registration statement of the auditor's report with respect to the consolidated financial statements of Tyme Technologies, Inc. included in the Annual Report on Form 10-K for the year ended March 31, 2022 and that a consent should be filed for the incorporation by reference of such auditor's report into any previously filed Securities Act registration statement. See the Exhibits Table in Item 601(a) of Regulation S-K and footnote 5 thereto. Please revise your filings or advise, as appropriate.*

Response: The Company has filed the required financial statements and pro forma financial information for the acquisition of Tyme Technologies, Inc. ("Tyme Technologies") by amendment to the original Current Report on Form 8-K (the "Amended 8-K") on November 30, 2022 (which is within 71 calendar days after the date the original Current Report on Form 8-K was required to be filed). The Amended 8-K is incorporated by reference into the Revised Registration Statement pursuant to the terms thereof. The Company has also filed an auditors' consent as an exhibit to the Revised Registration Statement for the incorporation by reference into the Revised Registration Statement of the auditor's report with respect to the consolidated financial statements of Tyme Technologies included in its Annual Report on Form 10-K for the year ended March 31, 2022.

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If you have any further questions or comments, or if you require any additional information, please contact the undersigned by telephone at (617) 526-6393. Thank you for your assistance.

Very truly yours,

/s/ Cynthia T. Mazareas

Cynthia T. Mazareas

cc: Gerald E. Quirk, Esq., *Syros Pharmaceuticals, Inc.*
Todd Rosenthal, Esq., *Syros Pharmaceuticals, Inc.*
Nancy Simonian, M.D., *Syros Pharmaceuticals, Inc.*