



July 12, 2023

VIA EDGAR

United States Securities and Exchange Commission  
Division of Corporation Finance  
100 F Street, N.E.  
Washington, D.C. 20549

Attn: Nicholas O'Leary, Esq.

Re: **Yield10 Bioscience, Inc.**  
**Registration Statement on Form S-1 (File No. 333-273070)**  
**Request for Acceleration**

Dear Mr. O'Leary:

This letter is sent on behalf of Yield10 Bioscience, Inc. (the "Company") in connection with the above-referenced Registration Statement on Form S-1 (the "Registration Statement") filed with the Securities and Exchange Commission (the "Commission") by the Company pursuant to the Securities Act of 1933, as amended (the "Securities Act"). Pursuant to Rule 461 promulgated under the Securities Act, the Company hereby requests that the effective date of the Registration Statement be accelerated to 4:00 p.m., Eastern Time, on July 14, 2023, or as soon thereafter as practicable.

Please contact Joel I. Papernik of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., at (212) 935-3000, with any questions you may have concerning this request.

Sincerely,

Yield10 Bioscience, Inc.

By: /s/ Oliver P. Peoples, Ph.D.

Name: Oliver P. Peoples, Ph.D.

Title: President and Chief Executive Officer

cc: Joel I. Papernik, *Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.*

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