

Yield10 Bioscience, Inc.

19 Presidential Way
Woburn, MA 01801

May 9, 2024

VIA EDGAR

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

**Re: Yield10 Bioscience, Inc.
Withdrawal of Registration Statement on Form S-1
File No. 333-279109**

Ladies and Gentlemen:

Pursuant to Rule 477 promulgated under the Securities Act of 1933, as amended (the “*Securities Act*”), Yield10 Bioscience, Inc. (the “*Registrant*”) hereby respectfully requests that the U.S. Securities and Exchange Commission (the “*Commission*”) consent to the withdrawal, effective as of the date hereof or at the earliest practicable date hereafter, of the Registrant’s Registration Statement on Form S-1 (File No. 333-279109) together with all exhibits and amendments thereto (collectively, the “*Registration Statement*”) initially filed with the Commission on May 3, 2024.

The Registrant has determined not to pursue, at this time, the public offering to which the Registration Statement relates. The Registration Statement has not been declared effective by the Commission, and the Registrant confirms that no securities have been sold pursuant to the Registration Statement. Accordingly, withdrawal of the Registration Statement is consistent with the public interest and the protection of investors, as contemplated by paragraph (a) of Rule 477.

The Registrant acknowledges that no refund will be made for fees paid to the Commission in connection with the filing of the Registration Statement. However, the Registrant requests that all fees paid to the Commission in connection with the filing of the Registration Statement be credited for future use should the Registrant proceed with the filing of a subsequent registration statement meeting the requirements of Rule 457(p) promulgated under the Securities Act.

Pursuant to Rule 477(b), the Company understands that this request for withdrawal of the Registration Statement will be deemed granted as of the date hereof unless the Company receives notice from the Commission within 15 days of the date hereof that such request will not be granted.

Should you have any questions regarding this request, please do not hesitate to contact counsel to the Registrant, Megan Gates of Covington & Burling LLP at (617) 785-4653.

Sincerely,

Yield10 Bioscience, Inc.

By: /s/ Oliver Peoples

Name: Oliver Peoples

Title: President & Chief Executive Officer

Cc: Megan Gates, Covington & Burling LLP
