

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE 13G

Under the Securities Exchange Act of 1934

(Amendment No.)*

YIELD10 BIOSCIENCE, INC.

(Name of Issuer)

Common Stock

(Title of Class of Securities)

98585K862

(CUSIP Number)

January 22, 2021

(Date Of Event which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

Rule 13d-1(b)

Rule 13d-1(c)

Rule 13d-1(d)

* The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB control number.

SEC 1745 (3-06)

CUSIP No.98585K862

13G

Page 2 of 8 Pages

- 1. NAME OF REPORTING PERSON:
I.R.S. IDENTIFICATION NO. OF ABOVE PERSON:

Morgan Stanley
I.R.S. # 36-3145972

- 2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP:

(a)

(b)

- 3. SEC USE ONLY:

- 4. CITIZENSHIP OR PLACE OF ORGANIZATION:

Delaware.

NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH: 5. SOLE VOTING POWER:
0

6. SHARED VOTING POWER:
169,618

7. SOLE DISPOSITIVE POWER:
0

8. SHARED DISPOSITIVE POWER:
169,627

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON:
169,627

10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES:
[]

11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9):
5.1%

12. TYPE OF REPORTING PERSON:
HC, CO

1. NAME OF REPORTING PERSON:
I.R.S. IDENTIFICATION NO. OF ABOVE PERSON:

Morgan Stanley Capital Services LLC
I.R.S. # 13-3292567

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP:

(a)

(b)

3. SEC USE ONLY:

4. CITIZENSHIP OR PLACE OF ORGANIZATION:

Delaware.

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON
WITH:

5. SOLE VOTING POWER:
0

6. SHARED VOTING POWER:
169,618

7. SOLE DISPOSITIVE POWER:
0

8. SHARED DISPOSITIVE POWER:
169,618

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON:
169,618

10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES:

11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9):
5.1%

12. TYPE OF REPORTING PERSON:
CO

-
- Item 1. (a) Name of Issuer:
YIELD10 BIOSCIENCE, INC.

- (b) Address of Issuer's Principal Executive Offices:
19 PRESIDENTIAL WAY
SUITE 201
WOBURN MA 01801
UNITED STATES OF AMERICA

- Item 2. (a) Name of Person Filing:
(1) Morgan Stanley
(2) Morgan Stanley Capital Services LLC

- (b) Address of Principal Business Office, or if None, Residence:
(1) 1585 Broadway New York, NY 10036
(2) 1585 Broadway New York, NY 10036

- (c) Citizenship:
(1) Delaware.
(2) Delaware.

- (d) Title of Class of Securities:
Common Stock

- (e) CUSIP Number:
98585K862

- Item 3. If this statement is filed pursuant to Sections 240.13d-1(b) or 240.13d-2(b) or (c), check whether the person filing is a:
- (a) Broker or dealer registered under Section 15 of the Act (15 U.S.C. 78o).
- (b) Bank as defined in Section 3(a)(6) of the Act (15 U.S.C. 78c).
- (c) Insurance company as defined in Section 3(a)(19) of the Act (15 U.S.C. 78c).
- (d) Investment company registered under Section 8 of the Investment Company Act of 1940 (15 U.S.C. 80a-8).
- (e) An investment adviser in accordance with Sections 240.13d-1(b)(1)(ii)(E);
- (f) An employee benefit plan or endowment fund in accordance with Section 240.13d-1(b)(1)(ii)(F);
- (g) A parent holding company or control person in accordance with Section 240.13d-1(b)(1)(ii)(G);
- (h) A savings association as defined in Section 3(b) of the Federal Deposit Insurance Act (12 U.S.C. 1813);
- (i) A church plan that is excluded from the definition of an investment company under Section 3(c)(14) of the Investment Company Act of 1940 (15 U.S.C. 80a-3);
- (j) A non-U.S. institution in accordance with section 240.13d-1(b)(1)(ii)(J);
- (k) Group, in accordance with sections 240.13d-1(b)(1)(ii)(K). If filing as a non-U.S. institution in accordance with sections 240.13d-1(b)(1)(ii)(J), please specify the type of institution: Not Applicable

Item 4. Ownership as of January 22, 2021.*

(a) Amount beneficially owned:

See the response(s) to Item 9 on the attached cover page(s).

(b) Percent of Class:

See the response(s) to Item 11 on the attached cover page(s).

(c) Number of shares as to which such person has:

(i) Sole power to vote or to direct the vote:

See the response(s) to Item 5 on the attached cover page(s).

(ii) Shared power to vote or to direct the vote:

See the response(s) to Item 6 on the attached cover page(s).

(iii) Sole power to dispose or to direct the disposition of:

See the response(s) to Item 7 on the attached cover page(s).

(iv) Shared power to dispose or to direct the disposition of:

See the response(s) to Item 8 on the attached cover page(s).

Item 5. Ownership of Five Percent or Less of a Class.

Not Applicable

Item 6. Ownership of More Than Five Percent on Behalf of Another Person.

Not Applicable

Item 7. Identification and Classification of the Subsidiary which Acquired the Security Being Reported on By the Parent Holding Company.

See Exhibit 99.2

Item 8. Identification and Classification of Members of the Group.

Not Applicable

Item 9. Notice of Dissolution of Group.

Not Applicable

Item 10. Certification.

(1) By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

* In Accordance with the Securities and Exchange Commission Release No. 34-39538 (January 12, 1998) (the "Release"), this filing reflects the securities beneficially owned, or that may be deemed to be beneficially owned, by certain operating units (collectively, the "MS Reporting Units") of Morgan Stanley and its subsidiaries and affiliates (collectively, "MS"). This filing does not reflect securities, if any, beneficially owned by any operating units of MS whose ownership of securities is disaggregated from that of the MS Reporting Units in accordance with the Release.

Signature

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Date: February 1, 2021

Signature: /s/ Christopher O'Hara

Name/Title: Christopher O'Hara/Authorized Signatory, Morgan Stanley

MORGAN STANLEY

Date: February 1, 2021

Signature: /s/ Christina Huffman

Name/Title: Christina Huffman/Authorized Signatory,
Morgan Stanley Capital Services LLC

Morgan Stanley Capital Services LLC

EXHIBIT NO. -----	EXHIBITS -----	PAGE ----
99.1	Joint Filing Agreement	7
99.2	Item 7 Information	8

* Attention. Intentional misstatements or omissions of fact constitute federal criminal violations (see 18 U.S.C. 1001).

EXHIBIT NO. 99.1 TO SCHEDULE 13G
JOINT FILING AGREEMENT

February 1, 2021

MORGAN STANLEY and Morgan Stanley Capital Services LLC hereby agree that, unless differentiated, this Schedule 13G is filed on behalf of each of the parties.

MORGAN STANLEY

BY: /s/ Christopher O'Hara

Christopher O'Hara/Authorized Signatory, Morgan Stanley

Morgan Stanley Capital Services LLC

BY: /s/ Christina Huffman

Christina Huffman/Authorized Signatory,
Morgan Stanley Capital Services LLC

* Attention. Intentional misstatements or omissions of fact constitute federal criminal violations (see 18 U.S.C. 1001).

EXHIBIT NO. 99.2

ITEM 7 INFORMATION

The securities being reported on by Morgan Stanley as a parent holding company are owned, or may be deemed to be beneficially owned, by Morgan Stanley Capital Services LLC, a wholly-owned subsidiary of Morgan Stanley.