

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

SCHEDULE 13D

Under the Securities Exchange Act of 1934  
(Amendment No. )\*

**Sema4 Holdings Corp**

(Name of Issuer)

**CM Holdings LLC  
Eli Casdin and Keith Meister  
c/o Corvex Management LP  
667 Madison Avenue  
New York, New York 10065  
(212) 474-6745**

(Name, Address and Telephone Number of Person Authorized to Receive Notice and Communications)

**Class A common stock, \$0.0001 par value per share**

(Title of Class of Securities)

**18978W109**

(CUSIP Number)

**JULY 22, 2021**

(Date of Event Which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of §§240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box.

**Note:** Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See §240.13d-7 for other parties to whom copies are to be sent.

\* 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 disclosures provided in a prior cover page.

The information required on 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).

1 Names of Reporting Persons  
CMLS HOLDINGS LLC

---

2 Check the Appropriate Box if a Member of a Group (See Instructions)

(a)

(b)

---

3 SEC Use Only

---

4 Source of Funds: OO

---

5 Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e):

---

6 Citizenship or Place of Organization  
Delaware

---

7 Sole Voting Power

0

---

Number of  
Units  
Beneficially  
Owned by  
Each  
Reporting  
Person With:

8 Shared Voting Power

17,730,419 (1)(2)(3)

---

9 Sole Dispositive Power

0

---

10 Shared Dispositive Power

17,730,419 (1)(2)(3)

---

11 Aggregate Amount Beneficially Owned by Each Reporting Person  
17,730,419 (1)(2)(3)

---

12 Check if the Aggregate Amount in Row (11) Excludes Certain Units (See Instructions)  (3)

---

13 Percent of Class Represented by Amount in Row (11)  
7.4%

---

14 Type of Reporting Person (See Instructions)  
HC, OO

---

1 Names of Reporting Persons

C-LSH LLC

---

2 Check the Appropriate Box if a Member of a Group (See Instructions)

(a)

(b)

---

3 SEC Use Only

---

4 Source of Funds: OO

---

5 Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e):

---

6 Citizenship or Place of Organization

Delaware

---

7 Sole Voting Power

0

---

Number of  
Units  
Beneficially  
Owned by  
Each  
Reporting  
Person With:

8 Shared Voting Power

17,730,419 (1)(2)(3)

---

9 Sole Dispositive Power

0

---

10 Shared Dispositive Power

17,730,419 (1)(2)(3)

---

11 Aggregate Amount Beneficially Owned by Each Reporting Person

17,730,419 (1)(2)(3)

---

12 Check if the Aggregate Amount in Row (11) Excludes Certain Units (See Instructions)  (3)

---

13 Percent of Class Represented by Amount in Row (11)

7.4%

---

14 Type of Reporting Person (See Instructions)

HC, OO

---

1 Names of Reporting Persons  
M-LSH LLC

---

2 Check the Appropriate Box if a Member of a Group (See Instructions)

(a)

(b)

---

3 SEC Use Only

---

4 Source of Funds: OO

---

5 Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e):

---

6 Citizenship or Place of Organization  
Delaware

---

7 Sole Voting Power

0

---

Number of  
Units  
Beneficially  
Owned by  
Each  
Reporting  
Person With:

8 Shared Voting Power

17,730,419 (1)(2)(3)

---

9 Sole Dispositive Power

0

---

10 Shared Dispositive Power

17,730,419 (1)(2)(3)

---

11 Aggregate Amount Beneficially Owned by Each Reporting Person  
17,730,419 (1)(2)(3)

---

12 Check if the Aggregate Amount in Row (11) Excludes Certain Units (See Instructions)  (3)

---

13 Percent of Class Represented by Amount in Row (11)  
7.4%

---

14 Type of Reporting Person (See Instructions)  
HC, OO

---

1 Names of Reporting Persons  
ELI CASDIN

---

2 Check the Appropriate Box if a Member of a Group (See Instructions)

(a)

(b)

---

3 SEC Use Only

---

4 Source of Funds: OO

---

5 Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e):

---

6 Citizenship or Place of Organization  
United States of America

---

7 Sole Voting Power  
0

---

Number of  
Units  
Beneficially  
Owned by  
Each  
Reporting  
Person With:

8 Shared Voting Power  
17,730,419 (1)(2)(3)

---

9 Sole Dispositive Power  
0

---

10 Shared Dispositive Power  
22,730,419 (1)(2)(3)(4)

---

11 Aggregate Amount Beneficially Owned by Each Reporting Person  
22,730,419 (1)(2)(3)(4)

---

12 Check if the Aggregate Amount in Row (11) Excludes Certain Units (See Instructions)  (3)

---

13 Percent of Class Represented by Amount in Row (11)  
9.5%

---

14 Type of Reporting Person (See Instructions)  
HC, IN

---

1 Names of Reporting Persons  
KEITH A. MEISTER

---

2 Check the Appropriate Box if a Member of a Group (See Instructions)

(a)

(b)

---

3 SEC Use Only

---

4 Source of Funds: OO

---

5 Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e):

---

6 Citizenship or Place of Organization  
United States of America

---

7 Sole Voting Power  
4,500,000 (5)

---

Number of  
Units  
Beneficially  
Owned by  
Each  
Reporting  
Person With:

8 Shared Voting Power  
17,730,419 (1)(2)(3)

---

9 Sole Dispositive Power  
4,500,000 (5)

---

10 Shared Dispositive Power  
17,730,419 (1)(2)(3)

---

11 Aggregate Amount Beneficially Owned by Each Reporting Person  
22,230,419 (1)(2)(3)(5)

---

12 Check if the Aggregate Amount in Row (11) Excludes Certain Units (See Instructions)  (3)

---

13 Percent of Class Represented by Amount in Row (11)  
9.2%

---

14 Type of Reporting Person (See Instructions)  
HC, IN

---

- (1) Reflects 10,993,750 shares of Class A common stock of Sema4 Holdings Corp. (the “Issuer”), par value \$0.0001 per share (“Common Stock”).
- (2) Includes 6,736,669 shares of Common Stock issuable upon the exercise of 6,736,669 private placement warrants of the Issuer. Each private placement warrant is exercisable to purchase one share of Common Stock at a price of \$11.50 per share, subject to adjustment, becomes exercisable September 3, 2021, as described in the July 2, 2021 Definitive Proxy Statement filed with the U.S. Securities Exchange Commission (File No. 001-39482) (the “Definitive Proxy Statement”).
- (3) CMLS Holdings LLC is the record holder of the shares reported herein. The Board of Managers of CMLS Holdings LLC is comprised of Mr. Casdin and Mr. Meister who share voting and investment discretion with respect to the common stock held of record by CMLS Holdings LLC. C-LSH LLC and M-LSH LLC are the members of CMLS Holdings LLC, and Mr. Casdin and Mr. Meister are the managing members of C-LSH LLC and M-LSH LLC, respectively. As such, each of the foregoing may be deemed to have or share beneficial ownership of the Common Stock held directly by CMLS Holdings LLC.
- (4) Casdin Partners Master Fund, LP is the record holder of the shares reported herein. Casdin Capital, LLC is the investment adviser to Casdin Partners Master Fund, LP and Casdin Partners GP, LLC is the general partner of Casdin Partners Master Fund LP. Eli Casdin is the managing member of Casdin Capital, LLC and Casdin Partners GP, LLC. As such, each of the foregoing may be deemed to have or share beneficial ownership of the Common Stock held directly by Casdin Partners Master Fund, LP.
- (5) The shares reflected as beneficially owned by Mr. Meister consist of 4,500,000 shares of Common Stock. Such securities are owned by investment funds advised by Corvex Management, L.P., and may be deemed to be indirectly beneficially owned by Keith Meister by virtue of Mr. Meister’s control of the general partner of Corvex Management, L.P.

**SCHEDULE 13D**

**Item 1(a)** Security and Issuer.  
Class A common stock of Sema4 Holdings Corp. (the "Issuer")

---

**Item 1(b)** Address of Issuer's Principal Executive Offices.  
33 Ludlow Street,  
North Tower, 8th floor,  
Stamford, CT 06902

---

**Item 2(a)** Name of Person Filing.  
This statement is filed on behalf of each of the following person (collectively, the "Reporting Persons"):

- i. CMLS Holdings LLC ("CMLS Holdings"), the holder of record of the Common Stock (as defined below) reported herein;
- ii. C-LSH LLC ("C-LSH"), member of CMLS Holdings;
- iii. M-LSH LLC ("M-LSH"), member of CMLS Holdings;
- iv. Eli Casdin ("Mr. Casdin"), a director of the Issuer, member of the Board of Managers of CMLS Holdings and the managing member of C-LSH LLC; and
- v. Keith A. Meister ("Mr. Meister"), member of the Board of Managers of CMLS Holdings and the managing member of M-LSH LLC.

The foregoing persons are hereinafter sometimes collectively referred to as the "Reporting Persons." Any disclosures herein with respect to a Reporting Persons is made by such Reporting Persons.

The filing of this statement should not be construed in and of itself as an admission by any Reporting Person as to beneficial ownership of the securities reported herein.

The Reporting Persons have entered into a joint filing agreement, filed as Exhibit A to this Schedule 13D, pursuant to which the Reporting Persons agreed to file the Schedule 13D and any amendments thereto in accordance with the provisions of Rule 13d-1(k)(1) under the Securities Exchange Act of 1934, as amended.

---

**Item 2(b)** Address of Principal Business Office.

The address of the principal business office of each of CMLS Holdings, M-LSH, Mr. Meister is c/o Corvex Management LP, 667 Madison Avenue, New York, NY 10065.

The address of the principal business office of each of C-LSH and Mr. Casdin is c/o Casdin Capital, LLC, 1260 Avenue of the Americas, Suite 2600, New York, NY 10019.

---

**Item 2(c)** The principal occupation of Mr. Casdin is serving as Chief Investment Officer of Casdin Capital, LLC.

The principal occupation of Mr. Meister is serving as Managing Partner of Corvex Management LP.

---

**Item 2(d)** None of the Reporting Persons have been convicted in any criminal proceeding (excluding traffic violations or similar misdemeanors) during the last five years.

---

**Item 2(e)** None of the Reporting Persons has been a party to any civil proceeding of a judicial or administrative body of competent jurisdiction resulting in any judgment, decree or final order enjoining them from engaging in future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws during the last five years.

---

**Item 2(f)** Citizenship.

- i. CMLS Holdings is a Delaware limited liability company;
  - ii. C-LSH is a Delaware limited liability company;
  - iii. M-LSH is a Delaware limited liability company;
  - iv. Mr. Casdin is a citizen of the United States of America; and
  - v. Mr. Meister is a citizen of the United States of America.
-



**Item 3 Source and Amount of Funds or Other Consideration.**

The shares of Common Stock reported on this Statement were acquired in connection with the consummation of the transactions contemplated by the Agreement and Plan of Merger, dated February 9, 2021, by and among CM Life Sciences, Inc. (“CMLS” or the “Company”), S-IV Sub, Inc. (“Merger Sub”) and Mount Sinai Genomics, Inc. d/b/a Sema4 (“Sema4”) (as amended from time to time, the “Merger Agreement”). Pursuant to the terms of the Merger Agreement, Merger Sub merged with and into Sema4 with Sema4 surviving the merger as a wholly owned subsidiary of CMLS, which was renamed “Sema4 Holdings Corp” (the “Merger” and together with the other transactions contemplated by the Merger Agreement, the “Business Combination”).

**Item 4 Purpose of Transaction**

The shares of Common Stock reported on this Statement were acquired for investment purposes. The Reporting Persons expect to evaluate on an ongoing basis the Company’s financial condition and prospects and their respective interests in, and intentions with respect to, the Company and their respective investments in the securities of the Company, which review may be based on various factors, including the Company’s business and financial condition, results of operations and prospects, general economic and industry conditions, the securities markets in general and those for the Company’s securities in particular, as well as other developments and other investment opportunities. Accordingly, each Reporting Person reserves the right to change its intentions, as it deems appropriate. In particular, each Reporting Person may, subject to any restrictions on the Reporting Persons pursuant to the agreements entered into in connection with the Business Combination, at any time and from time to time, in the open market, in privately negotiated transactions or otherwise, increase its holdings in the Company or dispose of all or a portion of the securities of the Company that such Reporting Person now owns or may hereafter acquire, including sales pursuant to the exercise of the registration rights provided for in the Registration Rights Agreement (as defined below). In addition, the Reporting Persons may engage in discussions with management and members of the Company’s board of directors regarding the Company, including, but not limited to, the Company’s business and financial condition, results of operations and prospects.

In connection with the acquisition of the Common Stock included in this Statement, CMLS and the Reporting Persons entered into an Amended and Restated Registration Rights Agreement, dated as of February 9, 2021, by and among CMLS, certain Reporting Persons and the other parties thereto (the “Registration Rights Agreement”) setting forth, among other things, certain rights and restrictions pertaining to the ownership and disposition of Common Stock by such Reporting Persons and their controlled affiliates. A copy of the Registration Rights Agreement is included as Exhibit 1 to this Statement.

Except as set forth above in this Item 4, the Reporting Persons have no present plans or proposals that relate to, or that would result in, any of the actions specified in clauses (a) through (j) of Item 4 of Schedule 13D under the Act. Mr. Casdin currently serves as a director of the issuer and, in connection with that role, may consider such activities referred to in clauses (a) through (j). The Reporting Persons do, however, reserve the right in the future to adopt such plans or proposals subject to compliance with applicable regulatory requirements.

**Item 5 Interest in the Securities of the Issuer**

The information set forth in the facing pages of this Schedule 13D with respect to the shared beneficial ownership of Common Stock by the Reporting Persons is incorporated by reference into this Item 5.

The information set forth in Items 2, 3 and 4 is hereby incorporated by reference into this Item 5.

(a) The aggregate number of shares of Common Stock and the percentage of total outstanding shares of Common Stock beneficially owned by the Reporting Persons is set forth below. References to percentage ownerships of shares of Common Stock in this Statement are based upon the 240,190,402 shares of Common Stock stated to be outstanding as of July 22, 2021 in the Company's Form 8-K filed with the Securities and Exchange Commission on July 28, 2021. The filing of this Statement shall not be construed as an admission that a Reporting Person beneficially owns those shares held by any other Reporting Person.

(b) Eli Casdin has the sole power to vote or to direct the vote, sole power to dispose or to direct the disposition of 5,000,000 of the Common Stock reported in (a) above. Keith Meister has the sole power to vote or to direct the vote, sole power to dispose or to direct the disposition of 4,500,000 of the Common Stock reported in (a) above.

Except with respect to the shares of Common Stock acquired in connection with the Business Combination, the Reporting Persons have not effected any transactions in the Company's Common Stock during the past 60 days.

No person other than the Reporting Persons is known to have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the Common Stock beneficially owned by the Reporting Persons.

**Item 6 Contracts, Arrangements, Understandings or Relationships With Respect to Securities of the Issuer**

The information set forth in Items 2, 3, 4 and 5 is hereby incorporated by reference into this Item 6. The Reporting Persons are party to the following contracts, agreements and understanding with respect to securities of the Company:

*Registration Rights Agreement*

In connection with the execution of the Business Combination Agreement, the Company, CMLS Holdings and certain other parties thereto (collectively, the "rights holders") entered into the Amended and Restated Registration Rights Agreement which amends and restates in its entirety the existing registration rights agreement, dated September 1, 2020, by and between CMLS and the parties thereto. Pursuant to the terms of the Amended and Restated Registration Rights Agreement, CMLS is to prepare and file with the SEC, no later than 30 days after the Closing Date, a shelf registration statement for an offering to be made on a continuous basis from time to time with respect to the resale of the registrable shares under the Amended and Restated Registration Rights Agreement. CMLS is further required to use commercially reasonable efforts to cause such shelf registration statement to be declared effective as soon as possible after filing, but in no event later than the earlier of 60 days following the filing date thereof and five business days after the SEC notifies CMLS that it will not review such registration statement, subject to extension in the event that the registration is subject comments from the SEC.

In addition, pursuant to the terms of the Amended and Restated Registration Rights Agreement and subject to certain requirements and customary conditions, including with regard to the number of demand rights that may be exercised, the rights holders may demand at any time or from time to time, that CMLS file a registration statement on Form S-1 or Form S-3 to register certain shares of CMLS Class A common stock held by such rights holders. The Amended and Restated Registration Rights Agreement will also provide the rights holders with "piggy-back" registration rights, subject to certain requirements and customary conditions. The Company will bear the expenses incurred in connection with the filing of any such registration statement.

This summary description does not purport to be complete, and is qualified in its entirety by reference to the Registration Rights Agreement, a copy of which is filed as Exhibit 1 to this Statement.

*Insider Letter*

CMLS, CMLS Holdings and each insider and CMLS Holdings entered into the Insider Letter providing for a lock-up in relation to CMLS Holdings's Class B common stock (as defined in the Insider Letter) of CMLS or any shares of Class A common stock (as defined in the Insider Letter) of CMLS until the earlier of (a) one year after the completion of CMLS's initial business combination and (b) subsequent to the business combination, (x) if the closing price of the Class A common stock equals or exceeds \$12.00 per share (as adjusted for stock splits, stock dividends, reorganizations, recapitalizations, and the like) for any 20 trading days within any 30-day trading day period commencing at least 150 days after CMLS's initial business combination or (y) the date following the completion of CMLS's initial business combination on which CMLS completes a liquidation, merger, capital stock exchange, reorganization or other similar transaction that results in all of CMLS's stockholders having the right to exchange their shares of Class A common stock for cash securities or other property. CMLS Holdings and each insider also agreed not to transfer any private placement warrants (or any share of Class A common stock issued or issuable upon the exercise of the private placement warrants), until 30 days after the completion of a business combination.

This summary description does not purport to be complete, and is qualified in its entirety by reference to the Insider Letter, a copy of which is filed as Exhibit 2 to this Statement.

**Item 7**

<u>Exhibit No.</u>	<u>Description</u>
A	<a href="#">Joint Filing Agreement</a>
1	<a href="#">Amended and Restated Registration Rights Agreement, dated as of July 22, 2021, by and among CMLS, CMLS Holdings LLC and certain other parties (incorporated by reference as Exhibit 10.2 of the Company's Form 8-K, filed with the SEC on July 28, 2021).</a>
2	<a href="#">Letter Agreement, dated as of September 1, 2020, by and among CMLS and CMLS Holdings LLC (incorporated by reference as Exhibit 10.5 of the Company's Form 8-K, filed with the SEC on September 4, 2020).</a>

**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: August 2, 2021

CMLS HOLDINGS LLC

By: /s/ Keith A. Meister  
Name: Keith A. Meister  
Title: Manager

Date: August 2, 2021

C-LSH LLC

By: /s/ Eli Casdin  
Name: Eli Casdin  
Title: Managing Member

Date: August 2, 2021

M-LSH LLC

By: /s/ Keith A. Meister  
K  
Name: Keith A. Meister  
Title: Managing Member

Date: August 2, 2021

/s/ Eli Casdin  
Eli Casdin

Date: August 2, 2021

/s/ Keith A. Meister  
Keith A. Meister

EXHIBIT INDEX

**Ex.**

- |   |   |
|---|---|
| A | <a href="#">Joint Filing Agreement</a>  |
| 1 | <a href="#">Amended and Restated Registration Rights Agreement, dated as of July 22, 2021, by and among CMLS, CMLS Holdings LLC and certain other parties (incorporated by reference as Exhibit 10.2 of the Company's Form 8-K, filed with the SEC on July 28, 2021).</a> |
| 2 | <a href="#">Letter Agreement, dated as of September 1, 2020, by and among CMLS and CMLS Holdings LLC (incorporated by reference as Exhibit 10.5 of the Company's Form 8-K, filed with the SEC on September 4, 2020).</a>  |

EXHIBIT A  
JOINT FILING AGREEMENT  
PURSUANT TO RULE 13d-1(k)

The undersigned acknowledge and agree that the foregoing statement on Schedule 13D is filed on behalf of each of the undersigned and that all subsequent amendments to this statement on Schedule 13D shall be filed on behalf of each of the undersigned without the necessity of filing additional joint filing agreements. The undersigned acknowledge that each shall be responsible for the timely filing of such amendments, and for the completeness and accuracy of the information concerning him or it contained herein and therein, but shall not be responsible for the completeness and accuracy of the information concerning the others, except to the extent that he or it knows or has reason to believe that such information is inaccurate.

Date: August 2, 2021

CMLS HOLDINGS LLC

By: /s/ Keith A. Meister

Name: Keith A. Meister

Title: Manager

Date: August 2, 2021

C-LSH LLC

By: /s/ Eli Casdin

Name: Eli Casdin

Title: Managing Member

Date: August 2, 2021

M-LSH LLC

By: /s/ Keith A. Meister

Name: Keith A. Meister

Title: Managing Member

Date: August 2, 2021

/s/ Eli Casdin

Eli Casdin

Date: August 2, 2021

/s/ Keith A. Meister

Keith A. Meister