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

SCHEDULE 13D

Under the Securities Exchange Act of 1934
(Amendment No. 1)*

Fate Therapeutics, Inc.

(Name of Issuer)

Common Stock, \$0.001 par value per share

(Title of Class of Securities)

31189P102

(CUSIP Number)

Redmile Group, LLC

Jeremy C. Green

One Letterman Drive, Bldg D, Ste D3-300

San Francisco, CA 94129

Attention: Legal Department

(415) 489-9980

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

September 25, 2018

(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 which 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 § 13d-7(b) 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 the 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 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.	NAME OF REPORTING PERSON Redmile Group, LLC	
2.	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3.	SEC USE ONLY	
4.	SOURCE OF FUNDS (SEE INSTRUCTIONS) OO (1)	
5.	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>	
6.	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7.	SOLE VOTING POWER 0
	8.	SHARED VOTING POWER 10,359,666 (2)
	9.	SOLE DISPOSITIVE POWER 0
	10.	SHARED DISPOSITIVE POWER 10,359,666 (2)
11.	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 10,359,666 (2)	
12.	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)	
13.	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 16.2% (3)	
14.	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IA, OO	

(1) The source of funds was working capital of the Redmile Affiliates (as defined in footnote (2) below).

(2) The aggregate amount of shares of common stock, \$0.001 par value per share, of the Issuer (the “Common Stock”) that may be deemed beneficially owned by the Reporting Persons is comprised of the following: (i) 525,459 shares of Common Stock held by Redmile Capital Fund, L.P., (ii) 1,954,210 shares of Common Stock held by Redmile Capital Offshore Fund, Ltd., (iii) 117,454 shares of Common Stock held by Redmile Capital Offshore Fund (ERISA), Ltd., (iv) 2,384,128 shares of Common Stock held by Redmile Capital Offshore Fund II, Ltd., (v) 1,796,609 shares of Common Stock held by Redmile Strategic Master Fund, LP, (vi) 1,931,216 shares of Common Stock held by Redmile Biopharma Investments I, L.P., (vii) 216,697 shares of Common Stock held by P Redmile Ltd., (viii) 202,593 shares of Common Stock held by Map 20 Segregated Portfolio, a segregated portfolio of LMA SPC, and (ix) 1,231,300 shares of Common Stock held by a separately managed account. Redmile Group, LLC is the investment manager/adviser to each of the private investment vehicles and separately managed accounts listed in items (i) through (ix) (collectively, the “Redmile Affiliates”) and, in such capacity, exercises sole voting and investment power over all of the shares held by the Redmile Affiliates and may be deemed to be the beneficial owner of these shares. Jeremy C. Green serves as the managing member of Redmile Group, LLC and also may be deemed to be the beneficial owner of these shares. Redmile Group, LLC and Mr. Green each disclaim beneficial ownership of these shares, except to the extent of its or his pecuniary interest in such shares, if any.

Subject to the Beneficial Ownership Blocker (as defined below), the Reporting Persons may also be deemed to beneficially own shares of Common Stock issuable upon conversion of the following: (i) 223,663 shares of the Issuer’s non-voting Class A Convertible Preferred Stock (“Class A Preferred Stock”) held by Redmile Capital Fund, L.P., (ii) 302,862 shares of Class A Preferred Stock held by Redmile Capital Offshore Fund, Ltd., (iii) 33,441 shares of Class A Preferred Stock held by Redmile Capital Offshore Fund (ERISA), Ltd., (iv) 1,712,110 shares of Class A Preferred Stock held by Redmile Capital Offshore Fund II, Ltd., (v) 55,747 shares of Class A Preferred Stock held by Redmile Strategic Master Fund, LP, (vi) 342,422 shares of Class A Preferred Stock held by Redmile Biopharma Investments I, L.P., (vii) 30,121 shares of Class A Preferred Stock held by P Redmile Ltd., and (viii) 119,183 shares of the Class A Preferred Stock held by Map 20 Segregated Portfolio, a segregated portfolio of LMA SPC. The Class A Preferred Stock is initially convertible into shares of Common Stock on a one-for-five basis. Pursuant to the Certificate of Designation of Preferences, Rights and Limitations of Class A Convertible Preferred Stock (the “Certificate of Designation”), the Issuer may not effect any conversion of the Class A Preferred Stock, and a holder of the Class A Preferred Stock does not have the right to convert any portion of the Class A Preferred Stock held by such holder, to the extent that, after giving effect to the attempted conversion set forth in a notice of conversion, such holder, together with such holder’s affiliates and any other person whose beneficial ownership of Common Stock would be aggregated with such holder’s for purposes of Section 13(d) or Section 16 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and the applicable regulations of the Securities and Exchange Commission (the “SEC”), including any “group” of which such holder is a member, would beneficially own a number of shares of Common Stock in excess of the Beneficial Ownership Limitation (the “Beneficial Ownership Blocker”). The “Beneficial Ownership Limitation” is 9.99% of the shares of Common Stock then issued and outstanding, which percentage may be changed at a holder’s election upon 61 days’ notice to the Issuer. Because the percentage of shares of Common Stock collectively held directly by the Redmile Affiliates currently exceeds 9.99%, the conversion of the Class A Preferred Stock held by the Redmile Affiliates is currently limited in its entirety by the Beneficial Ownership Blocker and the Reporting Persons therefore cannot be deemed to have beneficial ownership over any of the shares of Common Stock issuable upon conversion of the Class A Preferred Stock and such shares have not been included in the aggregate amount of shares of Common Stock beneficially owned as reported in the table above.

(3) Percent of class calculated based on: (a) 53,419,189 shares of Common Stock issued and outstanding as of August 3, 2018, as reported by the Issuer in its Quarterly Report on Form 10-Q for the fiscal period ended June 30, 2018 filed with the SEC on August 6, 2018 (the “Form 10-Q”), plus (b) 10,648,149 shares of Common Stock issued by the Issuer in an underwritten public offering (the “Offering”), including 1,388,889 shares of Common Stock that were issued pursuant to the full exercise of the underwriters’ option to purchase additional shares.

1.	NAME OF REPORTING PERSON Jeremy C. Green	
2.	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3.	SEC USE ONLY	
4.	SOURCE OF FUNDS (SEE INSTRUCTIONS) OO (1)	
5.	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="checkbox"/>	
6.	CITIZENSHIP OR PLACE OF ORGANIZATION United Kingdom	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7.	SOLE VOTING POWER 0
	8.	SHARED VOTING POWER 10,359,666 (2)
	9.	SOLE DISPOSITIVE POWER 0
	10.	SHARED DISPOSITIVE POWER 10,359,666 (2)
11.	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 10,359,666 (2)	
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13.	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 16.2% (3)	
14.	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN, HC	

(1) The source of funds was working capital of the Redmile Affiliates.

(2) The aggregate amount of shares of Common Stock that may be deemed beneficially owned by the Reporting Persons is comprised of the following: (i) 525,459 shares of Common Stock held by Redmile Capital Fund, L.P., (ii) 1,954,210 shares of Common Stock held by Redmile Capital Offshore Fund, Ltd., (iii) 117,454 shares of Common Stock held by Redmile Capital Offshore Fund (ERISA), Ltd., (iv) 2,384,128 shares of Common Stock held by Redmile Capital Offshore Fund II, Ltd., (v) 1,796,609 shares of Common Stock held by Redmile Strategic Master Fund, LP, (vi) 1,931,216 shares of Common Stock held by Redmile Biopharma Investments I, L.P., (vii) 216,697 shares of Common Stock held by P Redmile Ltd., (viii) 202,593 shares of Common Stock held by Map 20 Segregated Portfolio, a segregated portfolio of LMA SPC, and (ix) 1,231,300 shares of Common Stock held by a separately managed account. Redmile Group, LLC is the investment manager/adviser to each of the Redmile Affiliates and, in such capacity, exercises sole voting and investment power over all of the shares held by the Redmile Affiliates and may be deemed to be the beneficial owner of these shares. Jeremy C. Green serves as the managing member of Redmile Group, LLC and also may be deemed to be the beneficial owner of these shares. Redmile Group, LLC and Mr. Green each disclaim beneficial ownership of these shares, except to the extent of its or his pecuniary interest in such shares, if any.

Subject to the Beneficial Ownership Blocker, the Reporting Persons may also be deemed to beneficially own shares of Common Stock issuable upon conversion of the following: (i) 223,663 shares of Class A Preferred Stock held by Redmile Capital Fund, L.P., (ii) 302,862 shares of Class A Preferred Stock held by Redmile Capital Offshore Fund, Ltd., (iii) 33,441 shares of Class A Preferred Stock held by Redmile Capital Offshore Fund (ERISA), Ltd., (iv) 1,712,110 shares of Class A Preferred Stock held by Redmile Capital Offshore Fund II, Ltd., (v) 55,747 shares of Class A Preferred Stock held by Redmile Strategic Master Fund, LP, (vi) 342,422 shares of Class A Preferred Stock held by Redmile Biopharma Investments I, L.P., (vii) 30,121 shares of Class A Preferred Stock held by P Redmile Ltd., and (viii) 119,183 shares of the Class A Preferred Stock held by Map 20 Segregated Portfolio, a segregated portfolio of LMA SPC. The Class A Preferred Stock is initially convertible into shares of Common Stock on a one-for-five basis. Pursuant to the Certificate of Designation, the Issuer may not effect any conversion of the Class A Preferred Stock, and a holder of the Class A Preferred Stock does not have the right to convert any portion of the Class A Preferred Stock held by such holder, if the Beneficial Ownership Blocker applies. Because the percentage of shares of Common Stock collectively held directly by the Redmile Affiliates currently exceeds 9.99%, the conversion of the Class A Preferred Stock held by the Redmile Affiliates is currently limited in its entirety by the Beneficial Ownership Blocker and the Reporting Persons therefore cannot be deemed to have beneficial ownership over any of the shares of Common Stock issuable upon conversion of the Class A Preferred Stock and such shares have not been included in the aggregate amount of shares of Common Stock beneficially owned as reported in the table above.

(3) Percent of class calculated based on: (a) 53,419,189 shares of Common Stock issued and outstanding as of August 3, 2018, as reported by the Issuer on the Form 10-Q, plus (b) 10,648,149 shares of Common Stock issued in the Offering.

This amendment No. 1 to Schedule 13D (this "Amendment No. 1") amends and supplements the Schedule 13D filed with the SEC on August 2, 2018 (the "Original Schedule 13D"), by Redmile Group, LLC, a Delaware limited liability company ("Redmile"), and Jeremy C. Green, a citizen of the United Kingdom (together with Redmile, the "Reporting Persons") relating to the Common Stock of Fate Therapeutics, Inc., a Delaware corporation (the "Issuer").

ITEM 5. Interest in Securities of the Issuer.

Item 5(a) of the Original Schedule 13D is hereby amended and restated to read in its entirety as follows:

(a) The aggregate amount of shares of Common Stock that may be deemed beneficially owned by the Reporting Persons is comprised of the following: (i) 525,459 shares of Common Stock held by Redmile Capital Fund, L.P., (ii) 1,954,210 shares of Common Stock held by Redmile Capital Offshore Fund, Ltd., (iii) 117,454 shares of Common Stock held by Redmile Capital Offshore Fund (ERISA), Ltd., (iv) 2,384,128 shares of Common Stock held by Redmile Capital Offshore Fund II, Ltd., (v) 1,796,609 shares of Common Stock held by Redmile Strategic Master Fund, LP, (vi) 1,931,216 shares of Common Stock held by Redmile Biopharma Investments I, L.P., (vii) 216,697 shares of Common Stock held by P Redmile Ltd., (viii) 202,593 shares of Common Stock held by Map 20 Segregated Portfolio, a segregated portfolio of LMA SPC, and (ix) 1,231,300 shares of Common Stock held by a separately managed account. Redmile Group, LLC is the investment manager/adviser to each of the private investment vehicles and separately managed accounts listed in items (i) through (ix) (collectively, the "Redmile Affiliates") and, in such capacity, exercises sole voting and investment power over all of the shares held by the Redmile Affiliates and may be deemed to be the beneficial owner of these shares. Jeremy C. Green serves as the managing member of Redmile Group, LLC and also may be deemed to be the beneficial owner of these shares. Redmile Group, LLC and Mr. Green each disclaim beneficial ownership of these shares, except to the extent of its or his pecuniary interest in such shares, if any.

Subject to the Beneficial Ownership Blocker (as defined below), the Reporting Persons may also be deemed to beneficially own shares of Common Stock issuable upon conversion of the following: (i) 223,663 shares of the Issuer's non-voting Class A Convertible Preferred Stock ("Class A Preferred Stock") held by Redmile Capital Fund, L.P., (ii) 302,862 shares of Class A Preferred Stock held by Redmile Capital Offshore Fund, Ltd., (iii) 33,441 shares of Class A Preferred Stock held by Redmile Capital Offshore Fund (ERISA), Ltd., (iv) 1,712,110 shares of Class A Preferred Stock held by Redmile Capital Offshore Fund II, Ltd., (v) 55,747 shares of Class A Preferred Stock held by Redmile Strategic Master Fund, LP, (vi) 342,422 shares of Class A Preferred Stock held by Redmile Biopharma Investments I, L.P., (vii) 30,121 shares of Class A Preferred Stock held by P Redmile Ltd., and (viii) 119,183 shares of the Class A Preferred Stock held by Map 20 Segregated Portfolio, a segregated portfolio of LMA SPC. The Class A Preferred Stock is initially convertible into shares of Common Stock on a one-for-five basis. Pursuant to the Certificate of Designation of Preferences, Rights and Limitations of Class A Convertible Preferred Stock (the "Certificate of Designation"), the Issuer may not effect any conversion of the Class A Preferred Stock, and a holder of the Class A Preferred Stock does not have the right to convert any portion of the Class A Preferred Stock held by such holder, to the extent that, after giving effect to the attempted conversion set forth in a notice of conversion, such holder, together with such holder's affiliates and any other person whose beneficial ownership of Common Stock would be aggregated with such holder's for purposes of Section 13(d) or Section 16 of the Exchange Act and the applicable regulations of the Securities and Exchange Commission (the "SEC"), including any "group" of which such holder is a member, would beneficially own a number of shares of Common Stock in excess of the Beneficial Ownership Limitation (the "Beneficial Ownership Blocker"). The "Beneficial Ownership Limitation" is 9.99% of the shares of Common Stock then issued and outstanding, which percentage may be changed at a holder's election upon 61 days' notice to the Issuer. Because the percentage of shares of Common Stock collectively held directly by the Redmile Affiliates currently exceeds 9.99%, the conversion of the Class A Preferred Stock held by the Redmile Affiliates is currently limited in its entirety by the Beneficial Ownership Blocker and the Reporting Persons therefore cannot be deemed to have beneficial ownership over any of the shares of Common Stock issuable upon conversion of the Class A Preferred Stock and such shares have not been included in the aggregate amount of shares of Common Stock beneficially owned as reported in Section 4(b) below.

For purposes of this Schedule 13D, the percent of class was calculated based: (a) 53,419,189 shares of Common Stock issued and outstanding as of August 3, 2018, as reported by the Issuer in its Quarterly Report on Form 10-Q for the fiscal period ended June 30, 2018 filed with the SEC on August 6, 2018 (the "Form 10-Q"), plus (b) 10,648,149 shares of Common Stock issued by the Issuer in an underwritten public offering (the "Offering"), including 1,388,889 shares of Common Stock that were issued pursuant to the full exercise of the underwriters' option to purchase additional shares.

Item 5(b) of the Original Schedule 13D is hereby amended and restated to read in its entirety as follows:

(b) Redmile Group, LLC:

- (1) Sole Voting Power: 0
- (2) Shared Voting Power: 10,359,666
- (3) Sole Dispositive Power: 0
- (4) Shared Dispositive Power: 10,359,666

Jeremy C. Green:

- (1) Sole Voting Power: 0
- (2) Shared Voting Power: 10,359,666
- (3) Sole Dispositive Power: 0
- (4) Shared Dispositive Power: 10,359,666

ITEM 6. Contracts, Arrangements, Understandings or Relationship with Respect to the Securities of the Issuer.

Item 6 of the Original Schedule 13D is hereby amended and supplemented by adding the following paragraph immediately prior to the last paragraph of Item 6:

Public Offering

On September 25, 2018, the Redmile Affiliates purchased an aggregate 3,703,704 shares of Common Stock at a price of \$13.50 per share in the Issuer's underwritten public offering. Redmile Group, LLC is the investment manager/adviser to each of the Redmile Affiliates and, in such capacity, exercises sole voting and investment power over all of the shares held by such vehicles and accounts and may be deemed to be the beneficial owner of these shares. Jeremy C. Green serves as the managing member of Redmile Group, LLC and also may be deemed to be the beneficial owner of these shares. Redmile Group, LLC and Mr. Green each disclaim beneficial ownership of these shares, except to the extent of its or his pecuniary interest in such shares, if any.

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.

Dated: September 27, 2018

REDMILE GROUP, LLC

/s/ Jeremy C. Green

Name: Jeremy C. Green

Title: Managing Member

Dated: September 27, 2018

/s/ Jeremy C. Green

JEREMY C. GREEN