

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

SCHEDULE 13G
Under the Securities Exchange Act of 1934
(Amendment No.)*

Fate Therapeutics Inc.
(Name of Issuer)

Common Shares, par value \$0.001 per share
(Title of Class of Securities)

31189P102
(CUSIP Number)

December 31, 2015
(Date of Event Which Requires Filing of this Statement)

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).

(1)	Names of Reporting Persons.	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)	Citizenship or Place of Organization	DELAWARE
	NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	
(5)	Sole Voting Power	2,371,001
(6)	Shared Voting Power	0
(7)	Sole Dispositive Power	2,371,001
(8)	Shared Dispositive Power	0
(9)	Aggregate Amount Beneficially Owned by Each Reporting Person	2,371,001
(10)	Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions)	<input type="checkbox"/>
(11)	Percent of Class Represented by Amount in Row (9)	8.26%
(12)	Type of Reporting Person (See Instructions)	OO

(1)	Names of Reporting Persons.	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)	Citizenship or Place of Organization	UNITED STATES
	NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	
(5)	Sole Voting Power	0
(6)	Shared Voting Power	2,371,001
(7)	Sole Dispositive Power	0
(8)	Shared Dispositive Power	2,371,001
(9)	Aggregate Amount Beneficially Owned by Each Reporting Person	2,371,001
(10)	Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions)	<input type="checkbox"/>
(11)	Percent of Class Represented by Amount in Row (9)	8.26%
(12)	Type of Reporting Person (See Instructions)	IN

Item 1(a). Name of Issuer:

Fate Therapeutics Inc.

Item 1(b). Address of Issuer's Principal Executive Offices:

3535 General Atomics Court
Suite 200
San Diego, CA 92121

Item 2(a). Names of Persons Filing:

Redmile Group, LLC ("Redmile")
Jeremy C. Green ("Jeremy Green")
The principal business address of each reporting person is One Letterman Drive, Bldg D, Ste D3-300, San Francisco, CA 94129.

Item 2(c). Citizenship:

Reference is made to Item 4 of pages 2–3 of this Schedule 13G (this "Schedule"), which Items are incorporated by reference herein.

Item 2(d). Title of Class of Securities:

Common Shares, par value \$0.001 per share.

Item 2(e). CUSIP Number:

31189P102

Item 3. If this statement is filed pursuant to §§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 §240.13d-1(b)(1)(ii)(E);
- (f) An employee benefit plan or endowment fund in accordance with §240.13d-1(b)(1)(ii)(F);
- (g) A parent holding company or control person in accordance with § 240.13d-1(b)(1)(ii)(G);

- (h) A savings associations 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) Group, in accordance with §240.13d-1(b)(1)(ii)(J).

Item 4. Ownership.

Reference is hereby made to Items 5-9 and 11 of pages 2 - 3 of this Schedule, which Items are incorporated by reference herein.

The securities to which this Schedule relates (the "Securities") are owned by certain investment limited partnerships, pooled investment vehicle(s), separately managed accounts, etc. for which Redmile serves as the general partner and/or investment manager. Redmile, as the general partner and/or investment manager to the limited partnerships, pooled investment vehicle(s), separately managed accounts, etc. and Jeremy Green, as the majority managing member and owner of Redmile, may therefore be deemed to beneficially own Securities owned by such investment limited partnerships, pooled investment vehicle(s), separately managed accounts, etc. for the purposes of Rule 13d-3 of the Securities Exchange Act of 1934, as amended (the "Act"), insofar as they may be deemed to have the power to direct the voting or disposition of those Securities.

Neither the filing of this Schedule nor any of its contents shall be deemed to constitute an admission that Redmile or Jeremy Green is, for any other purpose, the beneficial owner of any of the Securities, and each of Redmile and Jeremy Green disclaims beneficial ownership as to the Securities, except to the extent of his or its pecuniary interests therein.

Under the definition of "beneficial ownership" in Rule 13d-3 under the Act, it is also possible that the individual general partners, executive officers, and members of the foregoing entities might be deemed the "beneficial owners" of some or all of the Securities insofar as they may be deemed to share the power to direct the voting or disposition of the Securities. Neither the filing of this Schedule nor any of its contents shall be deemed to constitute an admission that any of such individuals is, for any purpose, the beneficial owner of any of the Securities, and such beneficial ownership is expressly disclaimed.

The calculation of percentage of beneficial ownership in item 11 above was derived from the Issuer's Quarterly Report on Form 10-Q filed with the Securities and Exchange Commission on November 3, 2015 in which the Issuer stated that the number of shares of its common stock outstanding as of November 2, 2015 was 28,716,570.

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

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following [].

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

Redmile serves as general partner and investment manager to certain investment limited partnerships, pooled investment vehicle(s), separately managed accounts, etc. that have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the Securities. Other than as reported in this Schedule, no investment limited partnerships, pooled investment vehicle(s), separately managed accounts, etc. holdings exceed five percent of the Issuer's common stock.

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

Not Applicable.

Item 8. Identification and Classification of Members of the Group

Not Applicable.

Item 9. Notice of Dissolution of Group

Not Applicable.

Item 10. Certification

By signing below the undersigned certify that, to the best of their knowledge and belief, the securities referred to above were acquired and are held in the ordinary course of business and 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.

Signature

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

Dated: February 16, 2016

REDMILE GROUP, LLC

By: /s/ Jeremy C. Green
Jeremy C. Green
Its Managing Member