

Mirati Therapeutics, Inc.  
Form SC 13G/A  
February 11, 2016

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**UNITED STATES**

**SECURITIES AND EXCHANGE COMMISSION**  
**Washington, DC 20549**

**SCHEDULE 13G/A**

**Under the Securities Exchange Act of 1934**

**(Amendment No. 2)\***

Mirati Therapeutics, Inc.  
(Name of Issuer)

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

60468T105  
(CUSIP Number)

December 31, 2015  
(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).

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CUSIP No. 60468T105

SCHEDULE 13G/A

Page 2 of 9 Pages

NAME OF REPORTING PERSONS

1

OrbiMed Advisors LLC

CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP

2

(a)   
 (b)

SEC USE ONLY

3

CITIZENSHIP OR PLACE OF ORGANIZATION

4

Delaware

SOLE VOTING POWER

5

0

SHARED VOTING POWER

6

376,999

SOLE DISPOSITIVE POWER

7

0

SHARED DISPOSITIVE POWER

8

376,999

AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

9

376,999

CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN  SHARES

10

PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

11

1.92%\*

TYPE OF REPORTING PERSON

12

IA

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\* This percentage is based upon 19,265,922 shares outstanding as of October 30, 2015, as set forth in the Issuer's Form 10-Q filed with the Securities and Exchange Commission on November 6, 2015 and includes 344,799 shares issuable upon the exercise of warrants.

CUSIP No. 60468T105

SCHEDULE 13G/A

Page 3 of 9 Pages

NAME OF REPORTING PERSONS

1

OrbiMed Capital GP IV LLC

CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP

2

(a)

(b)

SEC USE ONLY

3

CITIZENSHIP OR PLACE OF ORGANIZATION

4

Delaware

SOLE VOTING POWER

5

0

NUMBER OF  
SHARES  
BENEFICIALLY  
OWNED BY  
EACH  
REPORTING  
PERSON

6

SHARED VOTING POWER

376,999

SOLE DISPOSITIVE POWER

7

WITH

0

SHARED DISPOSITIVE POWER

8

376,999

AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

9

376,999

CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN   
SHARES

10

PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

11

1.92%\*

TYPE OF REPORTING PERSON

12

OO

\* This percentage is based upon 19,265,922 shares outstanding as of October 30, 2015, as set forth in the Issuer's Form 10-Q filed with the Securities and Exchange Commission on November 6, 2015 and includes 344,799 shares issuable upon the exercise of warrants.

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CUSIP No. 60468T105

SCHEDULE 13G/A

Page 4 of 9 Pages

NAME OF REPORTING PERSONS

1

Samuel D. Isaly

CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP

2

(a)   
 (b)

SEC USE ONLY

3

CITIZENSHIP OR PLACE OF ORGANIZATION

4

United States

SOLE VOTING POWER

5

0

SHARED VOTING POWER

6

376,999

SOLE DISPOSITIVE POWER

7

0

SHARED DISPOSITIVE POWER

8

376,999

AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

9

376,999

CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN  SHARES

10

PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

11

1.92%\*

TYPE OF REPORTING PERSON

12

IN

\* This percentage is based upon 19,265,922 shares outstanding as of October 30, 2015, as set forth in the Issuer's Form 10-Q filed with the Securities and Exchange Commission on November 6, 2015 and includes 344,799 shares issuable upon the exercise of warrants.

CUSIP No. 60468T105

SCHEDULE 13G/A

Page 5 of 9 Pages

**Item 1. (a) Name of Issuer:**

Mirati Therapeutics, Inc.

**(b) Address of Issuer's Principal Executive Offices:**

9393 Towne Centre Drive, Suite 200

San Diego, CA 92121

**Item 2.**

**(a) Name of Person Filing:**

This Schedule 13G is being filed by each of the following persons (each, a "Reporting Person" and together, the "Reporting Persons"):

(i) OrbiMed Capital GP IV LLC ("GP IV")

(ii) OrbiMed Advisors LLC ("Advisors")

(iii) Samuel D. Isaly ("Isaly")

See Exhibit A for the Reporting Persons' agreement for a joint filing of a single statement on their behalf.

**(b) Address of Principal Business Office:**

The address of the principal business office of each of GP IV, Advisors and Isaly is 601 Lexington Avenue, 54th Floor, New York, NY 10022.

**(c) Citizenship:**

Please refer to Item 4 on each cover sheet for each filing person.

**(d) Title of Class of Securities:**

Common Stock, par value \$0.001 per share (the "Common Stock")

**(e) CUSIP No.:**

60468T105

CUSIP No. 60468T105

SCHEDULE 13G/A

Page 6 of 9 Pages



CUSIP No. 60468T105

SCHEDULE 13G/A

Page 7 of 9 Pages

**Item 4. Ownership:**

GP IV is the General Partner of OrbiMed Private Investments IV, LP (“OPI IV”), which holds 32,200 shares of Common Stock (“Shares”) and warrants to purchase 344,799 Shares. Advisors is an investment advisor in accordance with § 240.13d-1(b)(1)(ii)(E) and the Managing Member of GP IV. Isaly is the Managing Member of Advisors and a control person in accordance with § 240.13d-1(b)(1)(ii)(G). On the basis of these relationships, GP IV, Advisors and Isaly may be deemed to share beneficial ownership of the Shares and warrants to purchase Shares directly held by OPI IV.

(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 the 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.**

X

**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 or Control Person.**

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.**

Not Applicable

CUSIP No. 60468T105

SCHEDULE 13G/A

Page 8 of 9 Pages

**SIGNATURES**

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: February 11, 2016

ORBIMED ADVISORS LLC

By: Samuel D. Isaly  
Name: Samuel D. Isaly  
Title: Managing Member

ORBIMED CAPITAL GP IV  
LLC

By: OrbiMed Advisors LLC,  
its Managing Member

By: Samuel D. Isaly  
Name: Samuel D. Isaly  
Title: Managing Member

SAMUEL D. ISALY

Samuel D. Isaly  
Name: Samuel D. Isaly

CUSIP No. 60468T105

SCHEDULE 13G/A

Page 9 of 9 Pages

**EXHIBIT A**

**JOINT FILING AGREEMENT**

Pursuant to Rule 13d-1(k)(1) under the Securities Exchange Act of 1934, as amended, the undersigned hereby consent to the joint filing on behalf of a single Schedule 13G and any amendment thereto, with respect to the beneficial ownership by each of the undersigned of the common stock of Mirati Therapeutics, Inc. The undersigned hereby further agree that this Joint Filing Agreement be included as an exhibit to such statement and any such amendment. 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 the others. The undersigned hereby further agree that this Joint Filing Agreement may be executed in any number of counterparts, each of which when so executed shall be deemed to be an original, but all of which counterparts shall together constitute one and the same instrument.

IN WITNESS WHEREOF, the undersigned have executed this Agreement as of February 11, 2016.

ORBIMED ADVISORS LLC

By: Samuel D. Isaly  
Name: Samuel D. Isaly  
Title: Managing Member

ORBIMED CAPITAL GP IV  
LLC

By: OrbiMed Advisors LLC,  
its Managing Member

By: Samuel D. Isaly  
Name: Samuel D. Isaly  
Title: Managing Member

SAMUEL D. ISALY

Samuel D. Isaly  
Name: Samuel D. Isaly

