

Mirati Therapeutics, Inc.  
Form SC 13G  
January 22, 2018  
UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

SCHEDULE 13G

Under the Securities Exchange Act of 1934

(Amendment No. \_\_)\*

Mirati Therapeutics, Inc.  
(Name of Issuer)

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

60468T105  
(CUSIP Number)

January 11, 2018  
(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)

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\* 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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Names of Reporting Persons.

I.R.S. Identification Nos. of above persons (entities only)

1

Cormorant Global Healthcare Master Fund, LP

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

(a)

(b)

3 SEC Use Only

Citizenship or Place of Organization.

4

Cayman Islands

5 Sole Voting Power

0 shares

6 Shared Voting Power

Number of Shares 1,193,328 shares (1,667,353 as of the date of filing)

Beneficially Owned by Refer to Item 4 below.

Owned by

Each Reporting Person 7 Sole Dispositive Power

Reporting

Person With 0 shares

8 Shared Dispositive Power

1,193,328 shares (1,667,353 as of the date of filing)

Refer to Item 4 below.

Aggregate Amount Beneficially Owned by Each Reporting Person

9 1,193,328 shares (1,667,353 as of the date of filing)

Refer to Item 4 below.

10 Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions)  N/A

Percent of Class Represented by Amount in Row (9)\*

114.27% (5.97% as of the date of filing)

Refer to Item 4 below.

Type of Reporting Person (See Instructions)

<sup>12</sup>PN (Partnership)

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Names of Reporting Persons.

I.R.S. Identification Nos. of above persons (entities only)

1

Cormorant Global Healthcare GP, LLC

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

(a)

(b)

3 SEC Use Only

Citizenship or Place of Organization.

4

Delaware

5 Sole Voting Power

0 shares

6 Shared Voting Power

Number of Shares 1,193,328 shares (1,667,353 as of the date of filing)

Beneficially

Owned by Refer to Item 4 below.

Each

Reporting Person 7 Sole Dispositive Power

With 0 shares

Person With 0 shares

8 Shared Dispositive Power

1,193,328 shares (1,667,353 as of the date of filing)

Refer to Item 4 below.

Aggregate Amount Beneficially Owned by Each Reporting Person

9 1,193,328 shares (1,667,353 as of the date of filing)

Refer to Item 4 below.

10 Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions)  N/A

Percent of Class Represented by Amount in Row (9)\*

11 4.27% (5.97% as of the date of filing)

Refer to Item 4 below.

Type of Reporting Person (See Instructions)

12 OO (Limited Liability Company)

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Names of Reporting Persons.

I.R.S. Identification Nos. of above persons (entities only)

1

Cormorant Asset Management, LLC

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

(a)

(b)

3 SEC Use Only

Citizenship or Place of Organization.

4

Delaware

5 Sole Voting Power

0 shares

6 Shared Voting Power

Number of Shares 1,430,600 shares (2,000,000 as of the date of filing)

Beneficially

Owned by Refer to Item 4 below.

Owned by

Each 7 Sole Dispositive Power

Reporting

Person With 0 shares

8 Shared Dispositive Power

1,430,600 shares (2,000,000 as of the date of filing)

Refer to Item 4 below.

Aggregate Amount Beneficially Owned by Each Reporting Person

9 1,430,600 shares (2,000,000 as of the date of filing)

Refer to Item 4 below.

10 Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions)  N/A

Percent of Class Represented by Amount in Row (9)\*

11 5.12% (7.16% as of the date of filing)

Refer to Item 4 below.

Type of Reporting Person (See Instructions)

12 OO (Limited Liability Company)

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Names of Reporting Persons.

I.R.S. Identification Nos. of above persons (entities only)

1

Bihua Chen

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

(a)

(b)

3 SEC Use Only

Citizenship or Place of Organization.

4

United States

5 Sole Voting Power

0 shares

6 Shared Voting Power

Number of Shares 1,430,600 shares (2,000,000 as of the date of filing)

Beneficially

Owned by Refer to Item 4 below.

Each

7 Sole Dispositive Power

Reporting

Person With 0 shares

8 Shared Dispositive Power

1,430,600 shares (2,000,000 as of the date of filing)

Refer to Item 4 below.

Aggregate Amount Beneficially Owned by Each Reporting Person

9 1,430,600 shares (2,000,000 as of the date of filing)

Refer to Item 4 below.



10 Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions)  N/A

Percent of Class Represented by Amount in Row (9)\*

11 5.12% (7.16% as of the date of filing)

Refer to Item 4 below.

Type of Reporting Person (See Instructions)

<sup>12</sup> IN (Individual)

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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, California 92121

Item 2.

(a) Name of Person Filing

Cormorant Global Healthcare Master Fund, LP  
Cormorant Global Healthcare GP, LLC  
Cormorant Asset Management, LLC  
Bihua Chen

(b) Address of Principal Business Office or, if none, Residence

200 Clarendon Street, 52nd Floor  
Boston, MA 02116

(c) Citizenship

Cormorant Global Healthcare Master Fund, LP - Cayman Islands  
Cormorant Global Healthcare GP, LLC - Delaware  
Cormorant Asset Management, LLC - Delaware  
Bihua Chen - United States

(d) Title of Class of Securities

Common Stock

(e) CUSIP Number

60468T105

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

(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)  A non-U.S. institution in accordance with §240.13d-1(b)(1)(ii)(J);
- (k)  Group, in accordance with §240.13d-1(b)(1)(ii)(K).

Item 4. Ownership\*\*\*

Provide the following information regarding the aggregate number and percentage of the class of securities of the issuer identified in Item 1.

(a) Amount Beneficially Owned\*\*\*

Cormorant Global Healthcare Master Fund, LP – 1,193,328 shares (1,667,353 as of the date of filing)  
Cormorant Global Healthcare GP, LLC – 1,193,328 shares (1,667,353 as of the date of filing)  
Cormorant Asset Management, LLC – 1,430,600 shares (2,000,000 as of the date of filing)  
Bihua Chen – 1,430,600 shares (2,000,000 as of the date of filing)

(b) Percent of Class

Cormorant Global Healthcare Master Fund, LP – 4.27% (5.97% as of the date of filing)  
Cormorant Global Healthcare GP, LLC – 4.27% (5.97% as of the date of filing)  
Cormorant Asset Management, LLC – 5.12% (7.16% as of the date of filing)  
Bihua Chen – 5.12% (7.16% as of the date of filing)

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

(i) sole power to vote or to direct the vote

Cormorant Global Healthcare Master Fund, LP - 0 shares  
Cormorant Global Healthcare GP, LLC - 0 shares  
Cormorant Asset Management, LLC - 0 shares  
Bihua Chen - 0 shares

(ii) shared power to vote or to direct the vote

Cormorant Global Healthcare Master Fund, LP – 1,193,328 shares (1,667,353 as of the date of filing)  
Cormorant Global Healthcare GP, LLC – 1,193,328 shares (1,667,353 as of the date of filing)  
Cormorant Asset Management, LLC – 1,430,600 shares (2,000,000 as of the date of filing)  
Bihua Chen – 1,430,600 shares (2,000,000 as of the date of filing)

(iii) sole power to dispose or to direct the disposition of

Cormorant Global Healthcare Master Fund, LP – 0 shares  
Cormorant Global Healthcare GP, LLC – 0 shares  
Cormorant Asset Management, LLC – 0 shares  
Bihua Chen – 0 shares

- (iv) shared power to dispose or to direct the disposition of  
Cormorant Global Healthcare Master Fund, LP – 1,193,328 shares (1,667,353 as of the date of filing)  
Cormorant Global Healthcare GP, LLC – 1,193,328 shares (1,667,353 as of the date of filing)  
Cormorant Asset Management, LLC – 1,430,600 shares (2,000,000 as of the date of filing)  
Bihua Chen – 1,430,600 shares (2,000,000 as of the date of filing)

\*\*\* Shares reported herein for Cormorant Asset Management, LLC represent shares which are beneficially owned by Cormorant Global Healthcare Master Fund, LP (the “Master Fund”), as reported herein, and shares which are beneficially owned by Cormorant Private Healthcare Fund I, LP (“Fund I”) and a managed account (the “Account”). Cormorant Global Healthcare GP, LLC serves as the general partner of the Master Fund. Cormorant Asset Management, LLC serves as the investment manager to the Master Fund, Fund I and the Account. Bihua Chen serves as the managing member of Cormorant Global Healthcare GP, LLC and Cormorant Asset Management, LLC. Each of the Reporting Persons disclaims beneficial ownership of the shares reported herein except to the extent of its or his pecuniary interest therein. The percentages reported herein are calculated based upon (i) the statement in the Issuer's prospectus dated November 16, 2017, as filed with the Securities and Exchange Commission on such date, that there would be 26,993,621 shares of Common Stock of the Issuer outstanding immediately after public offering to which the prospectus related and (ii) the statement in the Issuer's press release dated November 20, 2017 that, at the closing of such offering, the Issuer sold an additional 923,085 shares of Common Stock in connection with the exercise in full by the underwriters of their option to purchase such additional shares.

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

Not applicable.

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 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.

Exhibits

99.1 Joint Filing Agreement by and among the Reporting Persons.

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.

January 22, 2018

CORMORANT GLOBAL HEALTHCARE MASTER FUND, LP

By: Cormorant Global Healthcare GP, LLC

its General Partner

By: /s/ Bihua Chen

Bihua Chen, Managing Member

CORMORANT GLOBAL HEALTHCARE GP, LLC

By: /s/ Bihua Chen

Bihua Chen, Managing Member

CORMORANT ASSET MANAGEMENT, LLC

By: /s/ Bihua Chen

Bihua Chen, Managing Member

/s/ Bihua Chen

Bihua Chen