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

SCHEDULE 13G

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

NIGHTSTAR THERAPEUTICS PLC

(Name of Issuer)

**Ordinary Shares, nominal value £0.01
(represented by American Depositary Shares)**

(Title of Class of Securities)

65413A101

(CUSIP Number)

December 31, 2017

(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).

CUSIP No. 65413A101

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	Citizenship or Place of Organization Delaware		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	Sole Voting Power 0	
	6	Shared Voting Power 1,772,843 ⁽¹⁾	
	7	Sole Dispositive Power 0	
	8	Shared Dispositive Power 1,772,843 ⁽¹⁾	
9	Aggregate Amount Beneficially Owned by Each Reporting Person 1,772,843 ⁽¹⁾		
10	Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions)		
11	Percent of Class Represented by Amount in Row (9) 6.1% ⁽²⁾		
12	Type of Reporting Person (See Instructions) IA, OO		

(1) Redmile Group, LLC's beneficial ownership of the Issuer's ordinary shares ("Ordinary Shares") is comprised of 1,069,343 Ordinary Shares and 703,500 Ordinary Shares represented by American Depositary Shares (the "ADSs"), with each ADS representing one Ordinary Share, owned by certain private investment vehicles and separately managed accounts managed by Redmile Group, LLC, which Ordinary Shares may be deemed beneficially owned by Redmile Group, LLC as investment manager of such private investment vehicles and separately managed accounts. The reported securities may also be deemed beneficially owned by Jeremy C. Green as the principal of Redmile Group, LLC. 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.

(2) Percentage based on 28,904,714 Ordinary Shares outstanding as of December 31, 2017, as disclosed in the Issuer's Annual Report on Form 20-F for the fiscal year ended December 31, 2017, filed with the Securities and Exchange Commission on April 3, 2018 (the "Form 20-F").

CUSIP No. 65413A101

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	Citizenship or Place of Organization United Kingdom	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	Sole Voting Power 0
	6	Shared Voting Power 1,772,843 ⁽³⁾
	7	Sole Dispositive Power 0
	8	Shared Dispositive Power 1,772,843 ⁽³⁾
9	Aggregate Amount Beneficially Owned by Each Reporting Person 1,772,843 ⁽³⁾	
10	Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions)	
11	Percent of Class Represented by Amount in Row (9) 6.1% ⁽⁴⁾	
12	Type of Reporting Person (See Instructions) IN, HC	

(3) Jeremy C. Green's beneficial ownership of Ordinary Shares is comprised of 1,069,343 Ordinary Shares and 703,500 Ordinary Shares represented by ADSs owned by certain private investment vehicles and separately managed accounts managed by Redmile Group, LLC, which Ordinary Shares may be deemed beneficially owned by Redmile Group, LLC as investment manager of such private investment vehicles and separately managed accounts. The reported securities may also be deemed beneficially owned by Jeremy C. Green as the principal of Redmile Group, LLC. 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.

(4) Percentage based on 28,904,714 Ordinary Shares outstanding as of December 31, 2017, as disclosed in the Form 20-F.

Item 1.

- (a) Name of Issuer

Nightstar Therapeutics plc

- (b) Address of Issuer's Principal Executive Offices

215 Euston Road
London NW1 2BE United Kingdom

Item 2.

- (a) Names of Persons Filing

Redmile Group, LLC
Jeremy C. Green

- (b) Address of Principal Business office or, if None, Residence

Redmile Group, LLC
One Letterman Drive
Building D, Suite D3-300
The Presidio of San Francisco
San Francisco, California 94129
United States of America

Jeremy C. Green
c/o Redmile Group, LLC
One Letterman Drive
Building D, Suite D3-300
The Presidio of San Francisco
San Francisco, California 94129
United States of America

- (c) Citizenship

Redmile Group, LLC: Delaware
Jeremy C. Green: United Kingdom

- (d) Title of Class of Securities

Ordinary Shares, nominal value £0.01 (represented by American Depositary Shares)

- (e) CUSIP Number

65413A101

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) 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). If filing as a non-U.S. institution in accordance with § 240.13d-1(b)(1)(ii)(J), please specify the type of institution:

Item 4. Ownership.

(a) Amount beneficially owned:

Redmile Group, LLC – 1,772,843*
Jeremy C. Green – 1,772,843*

(b) Percent of class:

Redmile Group, LLC – 6.1%**
Jeremy C. Green – 6.1%**

(c) Number of shares as to which Redmile Group, LLC has:

(i) Sole power to vote or to direct the vote:

0

(ii) Shared power to vote or to direct the vote:

1,772,843*

(iii) Sole power to dispose or to direct the disposition of:

0

(iv) Shared power to dispose or to direct the disposition of:

1,772,843*

Number of shares as to which Jeremy C. Green has:

(i) Sole power to vote or to direct the vote:

0

(ii) Shared power to vote or to direct the vote:

1,772,843*

(iii) Sole power to dispose or to direct the disposition of:

0

(iv) Shared power to dispose or to direct the disposition of:

1,772,843*

* Redmile Group, LLC's and Jeremy C. Green's beneficial ownership of the Issuer's Common Stock is comprised of 1,069,343 Ordinary Shares and 703,500 Ordinary Shares represented by ADSs owned by certain private investment vehicles and separately managed accounts managed by Redmile Group, LLC, which Ordinary Shares may be deemed beneficially owned by Redmile Group, LLC as investment manager of such private investment vehicles and separately managed accounts. The reported securities may also be deemed beneficially owned by Jeremy C. Green as the principal of Redmile Group, LLC. 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.

** Percentage based on 28,904,714 Ordinary Shares outstanding as of December 31, 2017, as disclosed in the Form 20-F.

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 5 percent of the class of securities, check the following

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

N/A.

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

See Exhibit A attached hereto.

Item 8. Identification and Classification of Members of the Group.

N/A

Item 9. Notice of Dissolution of Group.

N/A

Item 10. Certifications.

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, other than activities solely in connection with a nomination under § 240.14a-11.

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: July 27, 2018

Redmile Group, LLC

By: /s/ Jeremy C. Green

Name: Jeremy C. Green

Title: Managing Member

/s/ Jeremy C. Green

Jeremy C. Green

Exhibit A

Redmile Group, LLC is the relevant entity for which Jeremy C. Green may be considered a control person.

Joint Filing Agreement

In accordance with Rule 13d-1(k)(1) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), the undersigned hereby agree to the joint filing on behalf of each of them of a Statement on Schedule 13G (including any and all amendments thereto, the "Schedule 13G") relating to the ordinary shares, nominal value £0.01 (represented by American Depositary Shares), of Nightstar Therapeutics plc, which may be deemed necessary pursuant to Regulation 13D or 13G promulgated under the Exchange Act.

The undersigned further agree that each party hereto is responsible for the timely filing of the Schedule 13G, and for the accuracy and completeness of the information concerning such party contained therein; provided, however, that no party is responsible for the accuracy or completeness of the information concerning any other party, unless such party knows or has a reason to believe that such information is inaccurate.

It is understood and agreed that a copy of this Joint Filing Agreement shall be attached as an exhibit to the Schedule 13G, filed on behalf of each of the parties hereto.

IN WITNESS WHEREOF, each of the undersigned has executed this Joint Filing Agreement as of the 27th day of July, 2018.

REDMILE GROUP, LLC

/s/ Jeremy C. Green

Name: Jeremy C. Green

Title: Managing Member

/s/ Jeremy C. Green

JEREMY C. GREEN
