

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

SCHEDULE 13D

**Under the Securities Exchange Act of 1934
(Amendment No. 2)***

CRISPR THERAPEUTICS AG

(Name of Issuer)

Common Shares, par value CHF 0.03 per share

(Title of Class of Securities)

H17182108

(CUSIP Number)

Ian F. Smith
Vertex Pharmaceuticals Incorporated
50 Northern Avenue
Boston, Massachusetts 02210
(617) 341-6100

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

December 26, 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 that 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 §240.13d-7 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 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 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 I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Vertex Pharmaceuticals Incorporated ("Vertex US")

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP
(see instructions)

(a)

(b)

3. SEC USE ONLY

4. SOURCE OF FUNDS (see instructions)

WC

5. CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e)

6. CITIZENSHIP OR PLACE OF ORGANIZATION

Massachusetts

7. SOLE VOTING POWER

0

8. SHARED VOTING POWER

5,380,940 (1)

9. SOLE DISPOSITIVE POWER

0

10. SHARED DISPOSITIVE POWER

5,380,940 (1)

NUMBER OF SHARES
BENEFICIALLY OWNED
BY EACH REPORTING
PERSON WITH

11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

5,380,940 (1)

12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES
(see instructions)

13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

10.4% (2)

14. TYPE OF REPORTING PERSON (see instructions)

CO

(1) Amount consists of 5,380,940 Common Shares held by Vertex Europe. Vertex US may be deemed to have beneficial ownership over such shares since Vertex Europe is an indirect wholly-owned subsidiary of Vertex US.

(2) The ownership percentage has been calculated on the basis of 51,896,995 Common Shares outstanding as of November 1, 2018 as reported in the Company's Quarterly Report on Form 10-Q, filed with the Securities and Exchange Commission on November 7, 2018.

1. NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Vertex Pharmaceuticals (Europe) Limited ("Vertex Europe")

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP
(see instructions)

(a)

(b)

3. SEC USE ONLY

4. SOURCE OF FUNDS (see instructions)

WC

5. CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e)

6. CITIZENSHIP OR PLACE OF ORGANIZATION

England and Wales

7. SOLE VOTING POWER

0

8. SHARED VOTING POWER

5,380,940

9. SOLE DISPOSITIVE POWER

0

10. SHARED DISPOSITIVE POWER

5,380,940

NUMBER OF SHARES
BENEFICIALLY OWNED
BY EACH REPORTING
PERSON WITH

11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

5,380,940

12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES
(see instructions)

13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

10.4% (1)

14. TYPE OF REPORTING PERSON (see instructions)

OO

(1) The ownership percentage has been calculated on the basis of 51,896,995 Common Shares outstanding as of November 1, 2018 as reported in the Company's Quarterly Report on Form 10-Q, filed with the Securities and Exchange Commission on November 7, 2018.

Item 1. Security and Issuer.

This Amendment No. 2 to Schedule 13D amends and supplements the statement on Schedule 13D originally filed with the Securities and Exchange Commission on December 21, 2018, as subsequently amended by Amendment No. 1 filed on December 26, 2018 (the "Schedule 13D") with respect to the common shares, par value CHF 0.03 per share (the "Shares"), of CRISPR Therapeutics AG, which is organized under the laws of Switzerland (the "Company"). The principal business address of the Company is Baarerstrasse 14, 6300 Zug, Switzerland. Unless otherwise indicated, each capitalized term used but not defined herein shall have the meaning assigned to such term in the Schedule 13D.

Item 3. Source or Amount of Funds or Other Consideration.

Item 3 of the Schedule 13D is hereby amended and supplemented as follows:

Between December 26 and December 27, 2018 Vertex Europe acquired 40,198 Shares for an aggregate of \$1,002,193.47 in the public market.

Item 5. Interest in Securities of the Issuer.

The responses set forth in Items 5(a) – (c) of the Schedule 13D are hereby amended by deleting the previous responses in their entirety and replacing them with the following:

(a) Vertex Europe holds and beneficially owns 5,380,940 Shares. As Vertex Europe is an indirect wholly-owned subsidiary of Vertex US, Vertex US beneficially owns the same 5,380,940 Shares. This number represents approximately 10.4% of the outstanding Shares of the Company, based on 51,896,995 Shares outstanding on November 1, 2018, as reported in the Company's 10-Q filed on November 7, 2018, as calculated under Rule 13d-3 of the Securities Exchange Act of 1934, as amended. To the knowledge of Vertex Europe and Vertex US, no director or officer of either Vertex Europe or Vertex US, respectively, beneficially owns any Shares.

(b) As Vertex Europe is indirectly wholly-owned by Vertex US, Vertex Europe and Vertex US share voting and investment power over the 5,380,940 Shares.

(c) Between December 26 and December 27, 2018 Vertex Europe acquired 40,198 Shares in the public market using funds from Vertex's working capital. Other than the transactions described in this Item 5, neither Vertex US nor Vertex Europe nor, to the knowledge of Vertex US or Vertex Europe, any director or executive officer of Vertex US or Vertex Europe, respectively, has effected any transaction in the Shares since the filing of the Schedule 13D.

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.

VERTEX PHARMACEUTICALS INCORPORATED

/s/ Ian F. Smith

Ian F. Smith

EVP, Chief Operating Officer and interim Chief Financial Officer

December 28, 2018

VERTEX PHARMACEUTICALS (EUROPE) LIMITED

/s/ Ian F. Smith

Ian F. Smith

Director

December 28, 2018