

OMB APPROVAL	
OMB Number:	3235-0287
Estimated average burden hours per response:	0.5

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

1. Name and Address of Reporting Person* <u>Flagship Ventures Fund IV General Partner LLC</u> (Last) (First) (Middle) C/O RUBIUS THERAPEUTICS, INC. 325 VASSAR STREET, SUITE 1A (Street) CAMBRIDGE MA 02139 (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>Rubius Therapeutics, Inc. [RUBY]</u>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <input checked="" type="checkbox"/> Director <input checked="" type="checkbox"/> 10% Owner Officer (give title below) Other (specify below)
	3. Date of Earliest Transaction (Month/Day/Year) 07/20/2018	
	4. If Amendment, Date of Original Filed (Month/Day/Year)	

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)		4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			
Common Stock							5,000,000	I	See Footnote ⁽¹⁾	
Common Stock	07/20/2018		C		15,323,593	A	(2)	15,323,593	I	See Footnote ⁽³⁾
Common Stock	07/20/2018		C		3,830,402	A	(2)	3,830,402	I	See Footnote ⁽⁴⁾
Common Stock	07/20/2018		C		5,000,000	A	(2)	5,000,000	I	See Footnote ⁽⁵⁾
Common Stock	07/20/2018		C		5,000,000	A	(2)	5,000,000	I	See Footnote ⁽⁶⁾
Common Stock	07/20/2018		C		593,948	A	(2)	5,593,948	I	See Footnote ⁽⁵⁾
Common Stock	07/20/2018		C		593,948	A	(2)	5,593,948	I	See Footnote ⁽⁶⁾
Common Stock	07/20/2018		C		1,781,843	A	(2)	1,781,843	I	See Footnote ⁽⁷⁾
Common Stock	07/20/2018		C		195,466	A	(2)	5,789,414	I	See Footnote ⁽⁵⁾
Common Stock	07/20/2018		C		195,466	A	(2)	5,789,414	I	See Footnote ⁽⁶⁾
Common Stock	07/20/2018		C		781,860	A	(2)	2,563,703	I	See Footnote ⁽⁷⁾

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4)		8. Price of Derivative Security (Instr. 5)	9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares				
Series A Preferred Stock	(2)	07/20/2018		C			15,323,593	(2)	(2)	Common Stock	15,323,593	(2)	0	I	See Footnote ⁽³⁾

**Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned
(e.g., puts, calls, warrants, options, convertible securities)**

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4)		8. Price of Derivative Security (Instr. 5)	9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares				
Series A Preferred Stock	(2)	07/20/2018		C			3,830,402	(2)	(2)	Common Stock	3,830,402	(2)	0	I	See Footnote(4)
Series A Preferred Stock	(2)	07/20/2018		C			5,000,000	(2)	(2)	Common Stock	5,000,000	(2)	0	I	See Footnote(5)
Series A Preferred Stock	(2)	07/20/2018		C			5,000,000	(2)	(2)	Common Stock	5,000,000	(2)	0	I	See Footnote(6)
Series B Preferred Stock	(2)	07/20/2018		C			593,948	(2)	(2)	Common Stock	593,948	(2)	0	I	See Footnote(5)
Series B Preferred Stock	(2)	07/20/2018		C			593,948	(2)	(2)	Common Stock	593,948	(2)	0	I	See Footnote(6)
Series B Preferred Stock	(2)	07/20/2018		C			1,781,843	(2)	(2)	Common Stock	1,781,843	(2)	0	I	See Footnote(7)
Series C Preferred Stock	(2)	07/20/2018		C			195,466	(2)	(2)	Common Stock	195,466	(2)	0	I	See Footnote(5)
Series C Preferred Stock	(2)	07/20/2018		C			195,466	(2)	(2)	Common Stock	195,466	(2)	0	I	See Footnote(6)
Series C Preferred Stock	(2)	07/20/2018		C			781,860	(2)	(2)	Common Stock	781,860	(2)	0	I	See Footnote(7)

1. Name and Address of Reporting Person*

[Flagship Ventures Fund IV General Partner LLC](#)

(Last) (First) (Middle)

C/O RUBIUS THERAPEUTICS, INC.
325 VASSAR STREET, SUITE 1A

(Street)

CAMBRIDGE MA 02139

(City) (State) (Zip)

1. Name and Address of Reporting Person*

[Flagship VentureLabs IV, LLC](#)

(Last) (First) (Middle)

C/O RUBIUS THERAPEUTICS, INC.
325 VASSAR STREET, SUITE 1A

(Street)

CAMBRIDGE MA 02139

(City) (State) (Zip)

1. Name and Address of Reporting Person*

[Flagship Ventures Fund IV, L.P.](#)

(Last) (First) (Middle)

C/O RUBIUS THERAPEUTICS, INC.
325 VASSAR STREET, SUITE 1A

(Street)

CAMBRIDGE MA 02139

(City) (State) (Zip)

1. Name and Address of Reporting Person*

[Flagship Ventures Fund IV-Rx, L.P.](#)

(Last) (First) (Middle)

C/O RUBIUS THERAPEUTICS, INC.
325 VASSAR STREET, SUITE 1A

(Street)

CAMBRIDGE MA 02139

(City) (State) (Zip)

1. Name and Address of Reporting Person*

[Flagship Ventures Fund V, L.P.](#)

(Last) (First) (Middle)

C/O RUBIUS THERAPEUTICS, INC.
325 VASSAR STREET, SUITE 1A

(Street)

CAMBRIDGE MA 02139

(City) (State) (Zip)

1. Name and Address of Reporting Person*

[Flagship V VentureLabs Rx Fund, L.P.](#)

(Last) (First) (Middle)

C/O RUBIUS THERAPEUTICS, INC.
325 VASSAR STREET, SUITE 1A

(Street)

CAMBRIDGE MA 02139

(City) (State) (Zip)

1. Name and Address of Reporting Person*

[Flagship Ventures Opportunities Fund I, L.P.](#)

(Last) (First) (Middle)

C/O RUBIUS THERAPEUTICS, INC.
325 VASSAR STREET, SUITE 1A

(Street)

CAMBRIDGE MA 02139

(City) (State) (Zip)

1. Name and Address of Reporting Person*

[AFEYAN NOUBAR](#)

(Last) (First) (Middle)

C/O RUBIUS THERAPEUTICS, INC.
325 VASSAR STREET, SUITE 1A

(Street)

CAMBRIDGE MA 02139

(City) (State) (Zip)

1. Name and Address of Reporting Person*		
KANIA EDWIN M JR		
(Last)	(First)	(Middle)
C/O RUBIUS THERAPEUTICS, INC.		
325 VASSAR STREET, SUITE 1A		
(Street)		
CAMBRIDGE	MA	02139
(City)	(State)	(Zip)

Explanation of Responses:

- Shares held by Flagship VentureLabs IV LLC ("VentureLabs IV"). Flagship Ventures Fund IV, L.P. ("Flagship Fund IV") is a member of VentureLabs IV and also serves as its manager. Flagship Ventures Fund IV General Partner LLC ("Flagship Fund IV GP") is the general partner of Flagship Fund IV. Noubar B. Afeyan, Ph.D. and Edwin M. Kania, Jr. are the managers of Flagship Fund IV GP. Each of these individuals and entities may be deemed to share voting and investment power with respect to all shares held by VentureLabs IV. Each of the filing persons disclaims beneficial ownership of such shares except to the extent of his or its pecuniary interest therein.
- The preferred stock is convertible into the Issuer's common stock on a one-for-one basis at the holder's election and has no expiration date. The preferred stock automatically convert into common stock upon the closing of the Issuer's initial public offering held on July 20, 2018.
- Shares held by Flagship Fund IV. Flagship Fund IV GP is the general partner of Flagship Fund IV. Noubar B. Afeyan, Ph.D. and Edwin M. Kania, Jr. are the managers of Flagship Fund IV GP and each of these individuals may be deemed to share voting and investment power with respect to all shares held by Flagship Fund IV. Each of the filing persons disclaims beneficial ownership of such shares except to the extent of his or its pecuniary interest therein.
- Shares held by Flagship Ventures Fund IV-Rx, L.P. ("Flagship Fund IV-Rx"). Flagship Fund IV GP is the general partner of Flagship IV-Rx. Noubar B. Afeyan, Ph.D. and Edwin M. Kania, Jr. are the managers of Flagship Fund IV GP. Flagship Fund IV GP and each of these individuals may be deemed to share voting and investment power with respect to all shares held by Flagship IV-Rx. Each of the filing persons disclaims beneficial ownership of such shares except to the extent of his or its pecuniary interest therein.
- Shares held by Flagship Ventures Fund V, L.P. ("Flagship Fund V"). Flagship Ventures Fund V General Partner LLC ("Flagship Fund V GP") is the general partner of Flagship Fund V. Noubar B. Afeyan, Ph.D. is the sole manager of Flagship Fund V GP and may be deemed to possess sole voting and investment power with respect to all shares held by Flagship Fund V. Each of the filing persons disclaims beneficial ownership of such shares except to the extent of his or its pecuniary interest therein.
- Shares held by Flagship V VentureLabs Rx Fund, L.P. ("VentureLabs Rx V"). Flagship Fund V GP is the general partner of VentureLabs Rx V. Noubar B. Afeyan, Ph.D. is the sole manager of Flagship Fund V GP and may be deemed to possess sole voting and investment power with respect to all shares held by VentureLabs Rx V. Each of the filing persons disclaims beneficial ownership of such shares except to the extent of his or its pecuniary interest therein.
- Shares held by Flagship Ventures Opportunities Fund I, L.P. ("Flagship Opportunities Fund I"). Flagship Ventures Opportunities Fund I General Partner LLC ("Flagship Opportunities GP") is the general partner of Flagship Opportunities I. Noubar B. Afeyan, Ph.D. is the sole manager of Flagship Opportunities GP and may be deemed to possess sole voting and investment power with respect to all shares held by Flagship Opportunities I. Each of the filing persons disclaims beneficial ownership of such shares except to the extent of his or its pecuniary interest therein.

[Flagship Ventures Fund IV
General Partner LLC By: /s/
Noubar B. Afeyan Name: 07/23/2018
Noubar B. Afeyan, Ph.D. Title:
Manager](#)

[Flagship VentureLabs IV LLC
By: Flagship Ventures Fund
IV, L.P., its manager By:
Flagship Ventures Fund IV
General Partner LLC, its
general partner By: /s/ Noubar
B. Afeyan Name: Noubar B.
Afeyan, Ph.D. Title: Manager](#)

[Flagship Ventures Fund IV,
L.P. By: Flagship Ventures
Fund IV General Partner LLC,
its general partner By: /s/ 07/23/2018
Noubar B. Afeyan Name:
Noubar B. Afeyan, Ph.D. Title:
Manager](#)

[Flagship Ventures Fund V,
L.P. By: Flagship Ventures
Fund V General Partner LLC,
its general partner By: /s/ 07/23/2018
Noubar B. Afeyan Name:
Noubar B. Afeyan, Ph.D. Title:
Manager](#)

[Flagship VentureLabs Rx
Fund, L.P. By: Flagship
Ventures Fund V General
Partner LLC, its general 07/23/2018
partner By: /s/ Noubar B.
Afeyan Name: Noubar B.
Afeyan, Ph.D. Title: Manager](#)

Flagship Ventures
Opportunities Fund I, L.P. By:
Flagship Ventures Fund V
General Partner LLC, its 07/23/2018
general partner By: /s/ Noubar
B. Afeya Name: Noubar B.
Afeyan, Ph.D. Title: Manager
/s/ Noubar B. Afeyan Ph.D. 07/23/2018
/s/ Edwin M. Kania, Jr. 07/23/2018
** Signature of Reporting Person Date

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

* If the form is filed by more than one reporting person, see Instruction 4 (b)(v).

** Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.