

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

SCHEDULE 13G

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

Spero Therapeutics, Inc.

(Name of Issuer)

Common Stock, par value \$0.001 per share

(Title of Class of Securities)

84833T103

(CUSIP Number)

November 6, 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).

1	NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY) Merck & Co., Inc.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION New Jersey	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER 0 shares
	6	SHARED VOTING POWER 935,942 shares
	7	SOLE DISPOSITIVE POWER 0 shares
	8	SHARED DISPOSITIVE POWER 935,942 shares
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 935,942 shares	
10	CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 6.5%*	
12	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) HC	

* Based on 14,369,182 shares of Common Stock outstanding as of November 14, 2017, according to information received from the Issuer.

1	NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY) Merck Sharp & Dohme Corp.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION New Jersey	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER 0 shares
	6	SHARED VOTING POWER 935,942 shares
	7	SOLE DISPOSITIVE POWER 0 shares
	8	SHARED DISPOSITIVE POWER 935,942 shares
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 935,942 shares	
10	CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 6.5%*	
12	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) HC	

* Based on 14,369,182 shares of Common Stock outstanding as of November 14, 2017, according to information received from the Issuer.

1	NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY) MRL Ventures Fund LLC	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (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 shares
	6	SHARED VOTING POWER 935,942 shares
	7	SOLE DISPOSITIVE POWER 0 shares
	8	SHARED DISPOSITIVE POWER 935,942 shares
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 935,942 shares	
10	CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 6.5%*	
12	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) PN	

* Based on 14,369,182 shares of Common Stock outstanding as of November 14, 2017, according to information received from the Issuer.

Item 1.

(a) Name of Issuer:
Spero Therapeutics, Inc.

(b) Address of Issuer's Principal Executive Offices:
675 Massachusetts Avenue, 14th Floor
Cambridge, Massachusetts 02139

Item 2.

(a) Name of Person Filing:

- (1) Merck & Co., Inc.
 - (2) Merck Sharp & Dohme Corp.
 - (3) MRL Ventures Fund LLC
-

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

- (1) Merck & Co., Inc.: 2000 Galloping Hill Road, Kenilworth, NJ 07033
 - (2) Merck Sharp & Dohme Corp.: One Merck Drive, Whitehouse Station, NJ 08889
 - (3) MRL Ventures Fund LLC: 320 Bent Street, Cambridge, Massachusetts 02141
-

(c) Citizenship:

- (1) Merck & Co., Inc.: New Jersey
 - (2) Merck Sharp & Dohme Corp.: New Jersey
 - (3) MRL Ventures Fund LLC: Delaware
-

(d) Title of Class of Securities:

Common Stock, par value \$0.001 per share

(e) CUSIP Number:

84833T103

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 association 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

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: 935,942

The reported securities are owned directly by (3) MRL Ventures Fund LLC ("MRL"), which is a wholly owned subsidiary of Merck Sharp & Dohme Corp. ("MSD"), which is a wholly owned subsidiary of Merck & Co., Inc. ("Merck"). Merck and MSD are indirect beneficial owners of the reported securities.

(b) Percent of class: 6.5%

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

(i) Sole power to vote or to direct the vote: See Cover Pages Items 5-8.

(ii) Shared power to vote or to direct the vote: See Cover Pages Items 5-8.

(iii) Sole power to dispose or to direct the disposition of: See Cover Pages Items 5-8.

(iv) Shared power to dispose or to direct the disposition of: See Cover Pages Items 5-8.

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 or Control Person

The reported securities are owned directly by MRL, which is a wholly owned subsidiary of MSD, which is a wholly owned subsidiary of Merck. Merck and MSD are indirect beneficial owners of the reported securities.

Item 8. Identification and Classification of Members of the Group

Not applicable.

Item 9. Notice of Dissolution of Group

Not applicable.

Item 10. Certifications

By signing below, each of the undersigned certifies that, to the best of each such signatory's 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.

Signatures

After reasonable inquiry and to the best of the knowledge and belief of each of the undersigned, each of the undersigned certifies that the information set forth in this statement is true, complete and correct.

November 15, 2017

MERCK & CO., INC.

/s/ Katie Fedosz

Signature

Senior Assistant Secretary

Name/Title

MERCK SHARP & DOHME CORP.

/s/ Katie Fedosz

Signature

Assistant Secretary

Name/Title

MRL VENTURES FUND LLC

By: MERCK SHARP & DOHME CORP., its managing member

/s/ Katie Fedosz

Signature

Assistant Secretary

Name/Title

Attention: Intentional misstatements or omissions of fact constitute federal criminal violations (see 18 U.S.C. 1001).

EXHIBIT INDEX

Exhibit No.	Description
99.1	Joint Filing Agreement

JOINT FILING AGREEMENT

In accordance with Rule 13d-1(k) under the Securities Exchange Act of 1934, as amended, each of the persons named below agrees to the joint filing of a Statement on Schedule 13G (including amendments thereto) with respect to the common stock, \$0.001 par value per share, of Spero Therapeutics, Inc., a Delaware corporation, and further agrees that this Joint Filing Agreement be included as an exhibit to such filings provided that, as contemplated by Section 13d-1(k)(1)(ii), no person shall be responsible for the completeness or accuracy of the information concerning the other persons making this filing, unless such person knows or has reason to believe that such information is in accurate. This Joint Filing Agreement may be executed in any number of counterparts, all of which together shall constitute one and the same instrument.

November 15, 2017

MERCK & CO., INC.

/s/ Katie Fedosz

Signature

Senior Assistant Secretary

Name/Title

MERCK SHARP & DOHME CORP.

/s/ Katie Fedosz

Signature

Assistant Secretary

Name/Title

MRL VENTURES FUND LLC

By: MERCK SHARP & DOHME CORP., its managing member

/s/ Katie Fedosz

Signature

Assistant Secretary

Name/Title