

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

SCHEDULE 13D

(Rule 13d-102)

INFORMATION TO BE INCLUDED IN STATEMENTS FILED PURSUANT  
TO RULE 13d-1(a) AND AMENDMENTS THERETO FILED PURSUANT  
TO RULE 13d-2(a)

(Amendment No. )\*

**Aprea Therapeutics, Inc.**

(Name of Issuer)

**Common Stock, par value \$0.001 per share**

(Title of Class of Securities)

**03836J102**

(CUSIP Number)

**Rebecca Lucia  
5AM Venture Management, LLC  
501 2<sup>nd</sup> Street, Suite 350  
San Francisco, CA 94107  
(415) 993-8565**

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

**October 7, 2019**

(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.

\* 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.

1. Name of Reporting Persons  
5AM Ventures IV, L.P.

---

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

(a)

---

(b)  (1)

---

3. SEC Use Only

---

4. Source of Funds (See Instructions)  
WC

---

5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Item 2(d) or 2(e)

---

6. Citizenship or Place of Organization  
Delaware

---

7. Sole Voting Power  
0

---

Number of  
Shares  
Beneficially  
Owned by  
Each  
Reporting  
Person With

8. Shared Voting Power  
2,418,548 shares of common stock (2)

---

9. Sole Dispositive Power  
0

---

10. Shared Dispositive Power  
2,418,548 shares of common stock (2)

---

11. Aggregate Amount Beneficially Owned by Each Reporting Person  
2,418,548 shares of common stock (2)

---

12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

---

13. Percent of Class Represented by Amount in Row 11  
11.7% (3)

---

14. Type of Reporting Person (See Instructions)

(1) This Schedule 13D is filed by 5AM Partners IV, LLC (“5AM Partners IV”), 5AM Ventures IV, L.P. (“5AM IV”), 5AM Co-Investors IV, L.P. (“5AM Co-Investors IV”), 5AM Opportunities I, L.P. (“5AM Opportunities”), 5AM Opportunities I (GP), LLC (“5AM Opportunities GP”), Dr. John D. Diekman (“Diekman”), Andrew J. Schwab (“Schwab”) and Dr. Scott M. Rocklage (“Rocklage”) and, with 5AM Partners IV, 5AM IV, 5AM Co-Investors IV, 5AM Opportunities, 5AM Opportunities GP, Diekman and Schwab, collectively, the “Reporting Persons”). The Reporting Persons expressly disclaim status as a “group” for purposes of this Schedule 13D.

(2) These shares are held by 5AM IV. Diekman, Schwab and Rocklage, as managing members of 5AM Partners IV, share voting and investment authority over the shares held by 5AM IV.

(3) Percentage based on 19,876,532 shares of Common Stock outstanding after the Issuer’s initial public offering, as disclosed in the Issuer’s final prospectus filed with the Securities and Exchange Commission pursuant to Rule 424(b) under the Securities Act of 1933, as amended, on October 4, 2019 (the “Final Prospectus”), plus 850,000 shares of Common Stock issued in the Issuer’s initial public offering pursuant to the full exercise of the underwriters’ option to purchase additional shares.

1. Name of Reporting Persons  
5AM Co-Investors IV, L.P.

---

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

(a)

---

(b)  (1)

---

3. SEC Use Only

---

4. Source of Funds (See Instructions)  
WC

---

5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Item 2(d) or 2(e)

---

6. Citizenship or Place of Organization  
Delaware

---

7. Sole Voting Power  
0

---

Number of  
Shares  
Beneficially  
Owned by  
Each  
Reporting  
Person With

8. Shared Voting Power  
100,772 shares of common stock (2)

---

9. Sole Dispositive Power  
0

---

10. Shared Dispositive Power  
100,772 shares of common stock (2)

---

11. Aggregate Amount Beneficially Owned by Each Reporting Person  
100,772 shares of common stock (2)

---

12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

---

13. Percent of Class Represented by Amount in Row 11  
0.5% (3)

---

14. Type of Reporting Person (See Instructions)

- (1) This Schedule 13D is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a “group” for purposes of this Schedule 13D.
- (2) These shares are held by 5AM Co-Investors IV. Diekman, Schwab and Rocklage, as managing members of 5AM Partners IV, share voting and investment authority over the shares held by 5AM Co-Investors IV.
- (3) Percentage based on 19,876,532 shares of Common Stock outstanding after the Issuer’s initial public offering, as disclosed in the Issuer’s Final Prospectus plus 850,000 shares of Common Stock issued in the Issuer’s initial public offering pursuant to the full exercise of the underwriters’ option to purchase additional shares.

1. Name of Reporting Persons  
5AM Partners IV, LLC

---

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

(a)

(b)  (1)

---

3. SEC Use Only

---

4. Source of Funds (See Instructions)  
AF

---

5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Item 2(d) or 2(e)

---

6. Citizenship or Place of Organization  
Delaware

---

7. Sole Voting Power  
0

---

Number of  
Shares  
Beneficially  
Owned by  
Each  
Reporting  
Person With

8. Shared Voting Power  
2,519,320 shares of common stock (2)

---

9. Sole Dispositive Power  
0

---

10. Shared Dispositive Power  
2,519,320 shares of common stock (2)

---

11. Aggregate Amount Beneficially Owned by Each Reporting Person  
2,519,320 shares of common stock (2)

---

12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

---

13. Percent of Class Represented by Amount in Row 11  
12.2% (3)

---

14. Type of Reporting Person (See Instructions)

- (1) This Schedule 13D is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a “group” for purposes of this Schedule 13D.
- (2) Includes (i) 2,418,548 shares held by 5AM IV; and (ii) 100,772 shares held by 5AM Co-Investors IV. Diekman, Schwab and Rocklage, as managing members of 5AM Partners IV, share voting and investment authority over the shares held by 5AM IV and 5AM Co-Investors IV.
- (3) Percentage based on 19,876,532 shares of Common Stock outstanding after the Issuer’s initial public offering, as disclosed in the Issuer’s Final Prospectus plus 850,000 shares of Common Stock issued in the Issuer’s initial public offering pursuant to the full exercise of the underwriters’ option to purchase additional shares.

1. Name of Reporting Persons  
5AM Opportunities I, L.P.

---

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

(a)

---

(b)  (1)

---

3. SEC Use Only

---

4. Source of Funds (See Instructions)  
WC

---

5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Item 2(d) or 2(e)

---

6. Citizenship or Place of Organization  
Delaware

---

7. Sole Voting Power  
0

---

Number of  
Shares  
Beneficially  
Owned by  
Each  
Reporting  
Person With

8. Shared Voting Power  
333,333 shares of common stock (2)

---

9. Sole Dispositive Power  
0

---

10. Shared Dispositive Power  
333,333 shares of common stock (2)

---

11. Aggregate Amount Beneficially Owned by Each Reporting Person  
333,333 shares of common stock (2)

---

12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

---

13. Percent of Class Represented by Amount in Row 11  
1.6% (3)

---

14. Type of Reporting Person (See Instructions)

- (1) This Schedule 13D is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a “group” for purposes of this Schedule 13D.
- (2) These shares are held by 5AM Opportunities. Schwab and Kush Parmar, as managing members of 5AM Opportunities GP, share voting and investment authority over the shares held by 5AM Opportunities.
- (3) Percentage based on 19,876,532 shares of Common Stock outstanding after the Issuer’s initial public offering, as disclosed in the Issuer’s Final Prospectus plus 850,000 shares of Common Stock issued in the Issuer’s initial public offering pursuant to the full exercise of the underwriters’ option to purchase additional shares.

1. Name of Reporting Persons  
5AM Opportunities I (GP), LLC

---

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

(a)

---

(b)  (1)

---

3. SEC Use Only

---

4. Source of Funds (See Instructions)  
AF

---

5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Item 2(d) or 2(e)

---

6. Citizenship or Place of Organization  
Delaware

---

7. Sole Voting Power  
0

---

Number of  
Shares  
Beneficially  
Owned by  
Each  
Reporting  
Person With

8. Shared Voting Power  
333,333 shares of common stock (2)

---

9. Sole Dispositive Power  
0

---

10. Shared Dispositive Power  
333,333 shares of common stock (2)

---

11. Aggregate Amount Beneficially Owned by Each Reporting Person  
333,333 shares of common stock (2)

---

12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

---

13. Percent of Class Represented by Amount in Row 11  
1.6% (3)

---

14. Type of Reporting Person (See Instructions)

- (1) This Schedule 13D is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a “group” for purposes of this Schedule 13D.
- (2) Includes 333,333 shares held by 5AM Opportunities. Schwab and Kush Parmar, as managing members of 5AM Opportunities GP, share voting and investment authority over the shares held by 5AM Opportunities.
- (3) Percentage based on 19,876,532 shares of Common Stock outstanding after the Issuer’s initial public offering, as disclosed in the Issuer’s Final Prospectus plus 850,000 shares of Common Stock issued in the Issuer’s initial public offering pursuant to the full exercise of the underwriters’ option to purchase additional shares.

1. Name of Reporting Persons  
Dr. John D. Diekman

---

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

(a)

---

(b)  (1)

---

3. SEC Use Only

---

4. Source of Funds (See Instructions)  
AF

---

5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Item 2(d) or 2(e)

---

6. Citizenship or Place of Organization  
United States

---

7. Sole Voting Power  
0

---

Number of  
Shares  
Beneficially  
Owned by  
Each  
Reporting  
Person With

8. Shared Voting Power  
2,519,320 shares of common stock (2)

---

9. Sole Dispositive Power  
0

---

10. Shared Dispositive Power  
2,519,320 shares of common stock (2)

---

11. Aggregate Amount Beneficially Owned by Each Reporting Person  
2,519,320 shares of common stock (2)

---

12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

---

13. Percent of Class Represented by Amount in Row 11  
12.2% (3)

---

14. Type of Reporting Person (See Instructions)

- (1) This Schedule 13D is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a “group” for purposes of this Schedule 13D.
- (2) Includes (i) 2,418,548 shares held by 5AM IV; and (ii) 100,772 shares held by 5AM Co-Investors IV. Diekman, Schwab and Rocklage, as managing members of 5AM Partners IV, share voting and investment authority over the shares held by 5AM IV and 5AM Co-Investors IV.
- (3) Percentage based on 19,876,532 shares of Common Stock outstanding after the Issuer’s initial public offering, as disclosed in the Issuer’s Final Prospectus plus 850,000 shares of Common Stock issued in the Issuer’s initial public offering pursuant to the full exercise of the underwriters’ option to purchase additional shares.

1. Name of Reporting Persons  
Andrew J. Schwab

---

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

(a)

---

(b)  (1)

---

3. SEC Use Only

---

4. Source of Funds (See Instructions)  
AF

---

5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Item 2(d) or 2(e)

---

6. Citizenship or Place of Organization  
United States

---

7. Sole Voting Power  
0

---

Number of  
Shares  
Beneficially  
Owned by  
Each  
Reporting  
Person With

8. Shared Voting Power  
2,852,653 shares of common stock (2)

---

9. Sole Dispositive Power  
0

---

10. Shared Dispositive Power  
2,852,653 shares of common stock (2)

---

11. Aggregate Amount Beneficially Owned by Each Reporting Person  
2,852,653 shares of common stock (2)

---

12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

---

13. Percent of Class Represented by Amount in Row 11  
13.8% (3)

---

14. Type of Reporting Person (See Instructions)

- (1) This Schedule 13D is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a “group” for purposes of this Schedule 13D.
- (2) Includes (i) 2,418,548 shares held by 5AM IV; (ii) 100,772 shares held by 5AM Co-Investors IV; and (iii) 333,333 shares held by 5AM Opportunities. Diekman, Schwab and Rocklage, as managing members of 5AM Partners IV, share voting and investment authority over the shares held by 5AM IV and 5AM Co-Investors IV. Schwab and Kush Parmar, as managing members of 5AM Opportunities GP, share voting and investment authority over the shares held by 5AM Opportunities.
- (3) Percentage based on 19,876,532 shares of Common Stock outstanding after the Issuer’s initial public offering, as disclosed in the Issuer’s Final Prospectus plus 850,000 shares of Common Stock issued in the Issuer’s initial public offering pursuant to the full exercise of the underwriters’ option to purchase additional shares.

1. Name of Reporting Persons

Dr. Scott M. Rocklage

---

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

(a)

(b)  (1)

---

3. SEC Use Only

---

4. Source of Funds (See Instructions)

AF

---

5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Item 2(d) or 2(e)

---

6. Citizenship or Place of Organization

United States

---

7. Sole Voting Power

0

---

8. Shared Voting Power

2,519,320 shares of common stock (2)

---

9. Sole Dispositive Power

0

---

10. Shared Dispositive Power

2,519,320 shares of common stock (2)

---

11. Aggregate Amount Beneficially Owned by Each Reporting Person

2,519,320 shares of common stock (2)

---

12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

---

13. Percent of Class Represented by Amount in Row 11

12.2% (3)

---

14. Type of Reporting Person (See Instructions)

Number of  
Shares  
Beneficially  
Owned by  
Each  
Reporting  
Person With

- (1) This Schedule 13D is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a “group” for purposes of this Schedule 13D.
- (2) Includes (i) 2,418,548 shares held by 5AM IV; and (ii) 100,772 shares held by 5AM Co-Investors IV. Diekman, Schwab and Rocklage, as managing members of 5AM Partners IV, share voting and investment authority over the shares held by 5AM IV and 5AM Co-Investors IV.
- (3) Percentage based on 19,876,532 shares of Common Stock outstanding after the Issuer’s initial public offering, as disclosed in the Issuer’s Final Prospectus plus 850,000 shares of Common Stock issued in the Issuer’s initial public offering pursuant to the full exercise of the underwriters’ option to purchase additional shares.

**Explanatory Note:** This 13D relates to shares of Common Stock, \$0.001 par value per share (“Common Stock”), of Aprea Therapeutics, Inc., a Delaware corporation.

### Item 1. Security and Issuer

The class of equity security to which this statement on Schedule 13D relates is the Common Stock of Aprea Therapeutics, Inc., a Delaware corporation organized under the laws of the state of Delaware (the “Issuer” or “Aprea”). The address of the principal executive offices of the Issuer is 535 Boylston Street, Boston, MA 02116. Information given in response to each item shall be deemed incorporated by reference in all other items, as applicable.

### Item 2. Identity and Background

This Schedule 13D is filed by 5AM Partners IV, LLC (“5AM Partners IV”), 5AM Ventures IV, L.P. (“5AM IV”), 5AM Co-Investors IV, L.P. (“5AM Co-Investors IV”), 5AM Opportunities I, L.P. (“5AM Opportunities”), 5AM Opportunities I (GP), LLC (“5AM Opportunities GP”), Dr. John D. Diekman (“Diekman”), Andrew J. Schwab (“Schwab”) and Dr. Scott M. Rocklage (“Rocklage”) and, with 5AM Partners IV, 5AM IV, Co-Investors IV, 5AM Opportunities, 5AM Opportunities GP, Diekman and Schwab, collectively, the “Reporting Persons”). The Reporting Persons expressly disclaim status as a “group” for purposes of this Schedule 13D.

The principal business and principal business office of the Reporting Persons is 5AM Ventures IV, L.P., 501 2<sup>nd</sup> Street, Suite 350, San Francisco, CA 94107.

(c) The principal business of the Reporting Persons is venture capital investments. Each of the individuals serves as a managing member of 5AM Partners IV, which is the general partner of 5AM IV and 5AM Co-Investors IV. Schwab serves as a managing member of 5AM Opportunities GP, which is the general partner of 5AM Opportunities.

(d) During the last five years, none of the Reporting Persons has been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors).

(e) During the last five years, none of the Reporting Persons was a party to a civil proceeding of a judicial or administrative body of competent jurisdiction or were subject to a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws.

(f) Each of 5AM Partners IV, 5AM IV, 5AM Co-Investors IV, 5AM Opportunities and 5AM Opportunities GP are incorporated in the state of Delaware and each of the individuals is a citizen of the United States.

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

5AM IV and 5AM Co-Investors IV acquired 12,163 shares and 507 shares of the Issuer’s Common Stock, respectively, for aggregate purchase prices of \$901 and \$38, respectively, on March 15, 2016.

5AM IV and 5AM Co-Investors IV acquired 1,913,910 shares and 79,746 shares of the Issuer’s Series B Preferred Stock, respectively, for aggregate purchase prices of \$13,183,735 and \$549,327, respectively, at various times between March 2016 and October 2017. Such shares of Series B Preferred Stock automatically converted to 1,913,910 shares and 79,746 shares of Common Stock, respectively, upon the closing of the Issuer’s initial public offering without payment of consideration.

---

5AM IV and 5AM Co-Investors IV acquired 492,475 shares and 20,519 shares of the Issuer's Series C Preferred Stock, respectively, for aggregate purchase prices of \$5,977,851 and \$249,011, respectively, at various times between November 2018 and February 2019. Such shares of Series C Preferred Stock automatically converted to 492,475 shares and 20,519 shares of Common Stock, respectively, upon the closing of the Issuer's initial public offering without payment of consideration. On October 7, 2019, 5AM Opportunities purchased 333,333 shares of Common Stock, respectively, in the Issuer's initial public offering (the "IPO") at the price of \$15.00 per share.

The source of funds for the purchases of the Issuer's securities was working capital of 5AM IV, 5AM Co-Investors IV and 5AM Opportunities.

#### **Item 4. Purpose of Transaction**

The Reporting Persons purchased the aforementioned securities for investment purposes with the aim of increasing the value of their investments and the Issuer. Subject to applicable legal requirements, one or more of the Reporting Persons may purchase additional securities of the Issuer from time to time in open market or private transactions, depending on its evaluation of the Issuer's business, prospects and financial condition, the market for the Issuer's securities, other developments concerning the Issuer, the reaction of the Issuer to the Reporting Persons' ownership of the Issuer's securities, other opportunities available to the Reporting Persons, and general economic, money market and stock market conditions. In addition, depending upon the factors referred to above, the Reporting Persons may dispose of all or a portion of their securities of the Issuer at any time. Each of the Reporting Persons reserve the right to increase or decrease its holdings on such terms and at such times as each may decide.

Except as set forth in this Item 4 and Item 6 below, none of the Reporting Persons have a present plan or proposal that relates to or would result in any of the actions specified in clauses (a) through (j) of Item 4 of Schedule 13D of the Act. However, each of the Reporting Persons reserves the right to propose or participate in future transactions which may result in one or more of such actions, including but not limited to, an extraordinary corporate transaction, such as a merger, reorganization or liquidation, sale of a material amount of assets of the Issuer or its subsidiaries, or other transactions which might have the effect of causing the Common Stock to become eligible for termination of registration under Section 12(g) of the Securities Exchange Act of 1934 (the "Act"). The Reporting Persons also retain the right to change their investment intent at any time, to acquire additional shares of Common Stock or other securities of the Issuer from time to time, or to sell or otherwise dispose of all or part of the Common Stock beneficially owned by them (or any shares of Common Stock into which such securities are converted) in any manner permitted by law. The Reporting Persons may engage from time to time in ordinary course transactions with financial institutions with respect to the securities described herein.

**Item 5. Interest in Securities of the Issuer**

(a) – (b). The following information with respect to the ownership of the Common Stock of the Issuer by the persons filing this statement on Schedule 13D is provided as of October 7, 2019:

Reporting Persons	Shares Held Directly	Sole Voting Power	Shared Voting Power(1)	Sole Dispositive Power	Shared Dispositive Power (1)	Beneficial Ownership	Percentage of Class (3)
5AM IV	2,418,548	0	2,418,548	0	2,418,548	2,418,548	11.7%
5AM Co-Investors IV	100,772	0	100,772	0	100,772	100,772	0.5%
5AM Partners IV (1)	0	0	2,519,320	0	2,519,320	2,519,320	12.2%
5AM Opportunities	333,333	0	333,333	0	333,333	333,333	1.6%
5AM Opportunities GP (2)	0	0	333,333	0	333,333	333,333	1.6%
Diekman (1)	0	0	2,519,320	0	2,519,320	2,519,320	12.2%
Schwab (1) (2)	0	0	2,852,653	0	2,852,653	2,852,653	13.8%
Rocklage (1)	0	0	2,519,320	0	2,519,320	2,519,320	12.2%

(1) Includes 2,418,548 shares of Common Stock held by 5AM IV and 100,772 shares of Common Stock held by 5AM Co-Investors IV. Diekman, Schwab and Rocklage, as managing members of 5AM Partners IV, share voting and investment authority over the shares held by 5AM IV and 5AM Co-Investors IV.

(2) Includes 333,333 shares of Common Stock held by 5AM Opportunities. Schwab and Parmar, as managing members of 5AM Opportunities GP, share voting and investment authority over the shares held by 5AM Opportunities.

(3) Percentage based on 19,876,532 shares of Common Stock outstanding after the Issuer's initial public offering, as disclosed in the Issuer's Final Prospectus plus 850,000 shares of Common Stock issued in the Issuer's initial public offering pursuant to the full exercise of the underwriters' option to purchase additional shares.

(c) Except as set forth herein, none of the Reporting Persons has effected any transactions in shares of the Issuer's Common Stock during the last 60 days.

(d) No other person is known to have the right to receive or the power to direct the receipt of dividends from, or any proceeds from the sale of, the shares of Common Stock beneficially owned by any of the Reporting Persons.

(e) Not applicable.

**Item 6. Contracts, Arrangements, Understandings or Relationships with Respect to Securities of the Issuer****Registration Rights**

Certain of the Reporting Persons and certain other stockholders of the Issuer entered into an Amended and Restated Registration Rights Agreement dated September 20, 2019 (the "**Registration Rights Agreement**"), with the Issuer. Under the Registration Rights Agreement, holders of registrable securities ("**Holders**"), including certain of the Reporting Persons, can demand that the Issuer file a registration statement or request that their registrable shares (the "**Registrable Securities**") be included on a registration statement that the Issuer is otherwise filing, in either case, registering the resale of their shares of Common Stock. These registration rights are subject to conditions and limitations, including the agreement not to exercise their registration rights during the lock-up period.

---

*Demand Registration Rights*

At any time beginning 180 days after the completion of the IPO, upon the written request of the Holders representing at least 50% of the Registrable Securities, the Issuer is obligated to register the sale of all registrable securities that the holders may request in writing to be registered if the anticipated aggregate offering price would exceed \$10 million. The Issuer is not required to file a registration statement pursuant to these demand registration rights (i) on more than one occasion within any six-month period or (ii) if at the time of such request, four or more such demand registrations and underwritten takedowns, as defined in the Registration Rights Agreement, have previously been effected or deemed effected.

*Piggyback Registration Rights*

If the Issuer proposes to file a registration statement to register any of its Common Stock under the Securities Act (other than (i) a registration statement on Form S-3 or (ii) a registration statement relating to any employee benefit plan), either for its own account or for the account of any of its stockholders that are not Holders, the Holders are entitled to notice of registration and, subject to specified exceptions, the Issuer will be required to use its commercially reasonable efforts to register the registrable securities then held by them that they request that the Issuer registers.

*Form S-3 Registration Rights*

If, at any time beginning after the first anniversary of the IPO, the Issuer becomes eligible to file a registration statement on Form S-3 under the Securities Act, subject to specified limitations, a shareholder or a group of shareholders, as defined in the Registration Rights Agreement, may demand in writing that the Issuer register on Form S-3 all or part of the registrable securities held by them. The Issuer will not be obligated to effect more than one such registration within any six-month period.

*Expenses of Registration*

The Issuer will pay the registration expenses (other than underwriting discounts, selling commissions and stock transfer taxes) of the shares registered pursuant to the Registration Rights Agreement.

**Lock-Up Agreements**

Each of 5AM IV and 5AM Co-Investors IV, along with all of the Issuer's directors (including Rocklage), executive officers and the holders of substantially all outstanding shares have agreed with the underwriters, subject to certain exceptions, to not to dispose of or hedge any shares of the Issuer's Common Stock or securities convertible into or exchangeable for shares of common stock during the period from the date of the lock-up agreement continuing through the date 180 days beginning October 7, 2019, except with the prior written consent of J.P. Morgan Securities LLC and Morgan Stanley & Co. LLC.

Other than as described in this Schedule 13D, to the knowledge of the Reporting Persons, there are no other contracts, arrangements, understandings or relationships (legal or otherwise) among the persons named in Item 2 and between such persons and any person with respect to any securities of the Issuer.

---

The foregoing descriptions of the terms of the Registration Rights Agreement and the lock-up agreement are not complete and are qualified in their entirety by reference to the text of the Registration Rights Agreement and form of lock-up agreement, which are filed herewith as Exhibits B and C, respectively, and incorporated herein by reference.

Other than as described in this Item 6, to the knowledge of the Reporting Persons, there are no contracts, arrangements, understandings or relationships (legal or otherwise) between the Reporting Persons and any person with respect to any securities of the Issuer, including, but not limited to, the transfer or voting of any of the securities, finder's fees, joint ventures, loan or option arrangements, puts or calls, guarantees of profits, division of profits or loss, or the giving or withholding of proxies or any pledge or contingency, the occurrence of which would give another person voting or investment power of the securities of the Issuer.

**Item 7. Materials to be Filed as Exhibits.**

- A. Joint Filing Agreement as required by Rule 13d-1(k)(1) under the Securities Exchange Act of 1934, as amended.
- B. Amended and Restated Registration Rights Agreement (incorporated by reference to Exhibit 10.4 to the Issuer's Registration Statement on Form S-1/A (Registration No. 333-233662, filed September 25, 2019).
- C. Form of Lock-up Agreement (incorporated by reference to Exhibit D to Exhibit 1.1 to the Issuer's Registration Statement on Form S-1/A (Registration No. 333-233662, filed September 23, 2019).

SIGNATURES

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: October 17, 2019

**5AM Ventures IV, L.P.**

By: 5AM Partners IV, LLC,  
Its General Partner

By: /s/ Andrew J. Schwab  
\_\_\_\_\_  
Andrew J. Schwab  
Managing Member

**5AM Co-Investors IV, L.P.**

By: 5AM Partners IV, LLC,  
Its General Partner

By: /s/ Andrew J. Schwab  
\_\_\_\_\_  
Andrew J. Schwab  
Managing Member

**5AM Partners IV, LLC**

By: /s/ Andrew J. Schwab  
\_\_\_\_\_  
Andrew J. Schwab  
Managing Member

**5AM Opportunities I, L.P.**

By: 5AM Opportunities I (GP), LLC,  
Its General Partner

By: /s/ Andrew J. Schwab  
\_\_\_\_\_  
Andrew J. Schwab  
Managing Member

**5AM Opportunities I (GP), LLC**

By: /s/ Andrew J. Schwab  
\_\_\_\_\_  
Andrew J. Schwab  
Managing Member

**DR. JOHN D. DIEKMAN**

By: /s/ Dr. John D. Diekman  
\_\_\_\_\_  
Dr. John D. Diekman

**ANDREW J. SCHWAB**

By: /s/ Andrew J. Schwab  
Andrew J. Schwab

**DR. SCOTT M. ROCKLAGE**

By: /s/ Dr. Scott M. Rocklage  
Dr. Scott M. Rocklage

---

**Exhibit 1****Joint Filing Agreement**

The undersigned hereby agree that a single Schedule 13D (or any amendment thereto) relating to the Common Stock of Aprea Therapeutics, Inc. shall be filed on behalf of each of the undersigned and that this Agreement shall be filed as an exhibit to such Schedule 13D.

Date: October 17, 2019

**5AM Ventures IV, L.P.**

By: 5AM Partners IV, LLC,  
Its General Partner

By: /s/ Andrew J. Schwab  
Andrew J. Schwab  
Managing Member

**5AM Co-Investors IV, L.P.**

By: 5AM Partners IV, LLC,  
Its General Partner

By: /s/ Andrew J. Schwab  
Andrew J. Schwab  
Managing Member

**5AM Partners IV, LLC**

By: /s/ Andrew J. Schwab  
Andrew J. Schwab  
Managing Member

**5AM Opportunities I, L.P.**

By: 5AM Opportunities I (GP), LLC,  
Its General Partner

By: /s/ Andrew J. Schwab  
Andrew J. Schwab  
Managing Member

**5AM Opportunities I (GP), LLC**

By: /s/ Andrew J. Schwab  
Andrew J. Schwab  
Managing Member

**DR. JOHN D. DIEKMAN**

By: /s/ Dr. John D. Diekman  
Dr. John D. Diekman

**ANDREW J. SCHWAB**

By: /s/ Andrew J. Schwab  
Andrew J. Schwab

**DR. SCOTT M. ROCKLAGE**

By: /s/ Dr. Scott M. Rocklage  
Dr. Scott M. Rocklage