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

SCHEDULE 13G

**UNDER THE SECURITIES EXCHANGE ACT OF 1934
(Amendment No. 2)***

Pliant Therapeutics, Inc.
(Name of Issuer)

COMMON STOCK, \$0.0001 PAR VALUE PER SHARE
(Title of Class of Securities)

729139 105
(CUSIP Number)

December 31, 2023
(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 Third Rock Ventures III, L.P. | | |
| 2. | CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input checked="" 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 339,160 | |
| | 7. | SOLE DISPOSITIVE POWER 0 | |
| | 8. | SHARED DISPOSITIVE POWER 339,160 | |
| 9. | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 339,160 | | |
| 10. | CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES <input type="checkbox"/> | | |
| 11. | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9 0.6% (1) | | |
| 12. | TYPE OF REPORTING PERSON PN | | |

(1) The percent of class was calculated based on 59,895,958 shares of common stock issued and outstanding as of November 3, 2023, as disclosed in the Issuer's 10-Q filed with the Securities and Exchange Commission on November 9, 2023.

| | | |
|--|--|-------------------------------------|
| 1. | NAMES OF REPORTING PERSONS Third Rock Ventures GP III, L.P. | |
| 2. | CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input checked="" 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 339,160 |
| | 7. | SOLE DISPOSITIVE POWER 0 |
| | 8. | SHARED DISPOSITIVE POWER 339,160 |
| 9. | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 339,160 | |
| 10. | CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES <input type="checkbox"/> | |
| 11. | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9 0.6% (1) | |
| 12. | TYPE OF REPORTING PERSON PN | |

| | | |
|--|--|--------------------------|
| 1. | NAMES OF REPORTING PERSONS | |
| | TRV GP III, LLC | |
| 2. | CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input checked="" 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 |
| | | 339,160 |
| | 7. | SOLE DISPOSITIVE POWER |
| | | 0 |
| | 8. | SHARED DISPOSITIVE POWER |
| | | 339,160 |
| 9. | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON | |
| | 339,160 | |
| 10. | CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES | |
| | <input type="checkbox"/> | |
| 11. | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9 | |
| | 0.6% (1) | |
| 12. | TYPE OF REPORTING PERSON | |
| | OO | |

| | | |
|--|--|--------------------------|
| 1. | NAMES OF REPORTING PERSONS | |
| | Third Rock Ventures IV, L.P. | |
| 2. | CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input checked="" 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 |
| | | 2,132,867 |
| | 7. | SOLE DISPOSITIVE POWER |
| | | 0 |
| | 8. | SHARED DISPOSITIVE POWER |
| | | 2,132,867 |
| 9. | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON | |
| | 2,132,867 | |
| 10. | CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES | |
| | <input type="checkbox"/> | |
| 11. | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9 | |
| | 3.6% (1) | |
| 12. | TYPE OF REPORTING PERSON | |
| | PN | |

| | | |
|--|--|---------------------------------------|
| 1. | NAMES OF REPORTING PERSONS Third Rock Ventures GP IV, L.P. | |
| 2. | CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input checked="" 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 2,132,867 |
| | 7. | SOLE DISPOSITIVE POWER 0 |
| | 8. | SHARED DISPOSITIVE POWER 2,132,867 |
| 9. | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,132,867 | |
| 10. | CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES <input type="checkbox"/> | |
| 11. | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9 3.6% (1) | |
| 12. | TYPE OF REPORTING PERSON PN | |

| | | |
|--|--|--------------------------|
| 1. | NAMES OF REPORTING PERSONS | |
| | TRV GP IV, LLC | |
| 2. | CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input checked="" 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 |
| | | 2,132,867 |
| | 7. | SOLE DISPOSITIVE POWER |
| | | 0 |
| | 8. | SHARED DISPOSITIVE POWER |
| | | 2,132,867 |
| 9. | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON | |
| | 2,132,867 | |
| 10. | CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES | |
| | <input type="checkbox"/> | |
| 11. | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9 | |
| | 3.6% (1) | |
| 12. | TYPE OF REPORTING PERSON | |
| | OO | |

| | | |
|--|--|--------------------------|
| 1. | NAMES OF REPORTING PERSONS | |
| | Robert I. Tepper | |
| 2. | CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> | |
| 3. | SEC USE ONLY | |
| 4. | CITIZENSHIP OR PLACE OF ORGANIZATION | |
| | United States | |
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH | 5. | SOLE VOTING POWER |
| | | 318,672 |
| | 6. | SHARED VOTING POWER |
| | | 339,160 |
| | 7. | SOLE DISPOSITIVE POWER |
| | | 318,672 |
| | 8. | SHARED DISPOSITIVE POWER |
| | | 339,160 |
| 9. | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON | |
| | 657,832 | |
| 10. | CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES | |
| | <input type="checkbox"/> | |
| 11. | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9 | |
| | 1.1% (1) | |
| 12. | TYPE OF REPORTING PERSON | |
| | IN | |

Item 1. Issuer

- (a) Name of Issuer:
Pliant Therapeutics, Inc. (the “**Issuer**”)
- (b) Address of Issuer’s Principal Executive Offices:
260 Littlefield Avenue
South San Francisco, CA 94080

Item 2. Filing Person

- (a) – (c) Name of Persons Filing; Address; Citizenship:
- (i) Third Rock Ventures III, L.P. (“**TRV III**”);
 - (ii) Third Rock Ventures GP III, L.P. (“**TRV GP III**”), which is the sole general partner of TRV III;
 - (iii) TRV GP III, LLC (“**TRV GP III LLC**”), which is the sole general partner of TRV GP III;
 - (iv) Third Rock Ventures IV, L.P. (“**TRV IV**”);
 - (v) Third Rock Ventures GP IV, L.P. (“**TRV GP IV**”), which is the sole general partner of TRV IV;
 - (vi) TRV GP IV, LLC (“**TRV GP IV LLC**”), which is the sole general partner of TRV GP IV; and
 - (vii) Robert I. Tepper (“**Tepper**,” and collectively with TRV III, TRV GP III, TRV GP III LLC, TRV IV, TRV GP IV and TRV GP IV LLC, the “**Reporting Persons**”), the managing member of TRV GP III LLC.

The address of the principal business office of each of the Reporting Persons is Third Rock Ventures, LLC, 201 Brookline Ave, Suite 1401, Boston, MA 02215.

Each of TRV III, TRV GP III, TRV IV and TRV GP IV is a Delaware limited partnership. Each of TRV GP III LLC and TRV GP IV LLC is a Delaware limited liability company. Tepper is a United States citizen.

- (d) Title of Class of Securities:
Common stock, \$0.0001 par value per share, (the “**Common Stock**”)
- (e) CUSIP Number:
729139105

Item 3. If this statement is filed pursuant to Rules 13d-1(b), or 13d-2(b) or (c), check whether the person filing is a:

- (a) Broker or dealer registered under Section 15 of the Act;
- (b) Bank as defined in Section 3(a)(6) of the Act;
- (c) Insurance company as defined in Section 3(a)(19) of the Act;
- (d) Investment company registered under Section 8 of the Investment Company Act of 1940;
- (e) An investment adviser in accordance with Rule 13d-1(b)(1)(ii)(E);
- (f) An employee benefit plan or endowment fund in accordance with Rule 13d-1(b)(1)(ii)(F);
- (g) A parent holding company or control person in accordance with Rule 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;
- (j) A non-U.S. institution in accordance with Rule 240.13d-1(b)(1)(ii)(J);
- (k) Group, in accordance with Rule 240.13d-1(b)(1)(ii)(K). If filing as a non-U.S. institution in accordance with Rule 240.13d-1(b)(1)(ii)(J), please specify the type of institution:

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) and (b) Amount beneficially owned:

- (i) TRV III directly owns 339,160 shares of Common Stock (the “**III Shares**”), which represents approximately 0.6% of the outstanding shares of Common Stock.
- (ii) TRV GP III is the general partner of TRV III and may be deemed to beneficially own the III Shares.
- (iii) TRV GP III LLC is the general partner of TRV GP III and may be deemed to beneficially own the III Shares.
- (iv) TRV IV directly owns 2,132,867 shares of Common Stock (the “**IV Shares**”), which represents approximately 3.6% of the outstanding shares of Common Stock.
- (v) TRV GP IV is the general partner of TRV IV and may be deemed to beneficially own the IV Shares.
- (vi) TRV GP IV LLC is the general partner of TRV GP IV and may be deemed to beneficially own the IV Shares.
- (vii) As a managing member of TRV GP III LLC, Tepper may be deemed to beneficially own the III Shares. Additionally, Tepper directly owns 318,672 shares of Common Stock, which, together with the III Shares, represents approximately 1.1% of the outstanding shares of Common Stock.

Each of TRV III, TRV GP III, TRV GP III LLC and Tepper, on the one hand, and TRV IV, TRV GP IV and TRV GP IV LLC, on the other hand, disclaim the existence of a “group” for purposes of Rule 13d-5 of the Securities Exchange Act of 1934, as amended, and nothing contained in this report shall be deemed an admission that any such group exists or may exist.

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

| Reporting Person | Number of Shares of Common Stock | | | |
|------------------|----------------------------------|-----------|---------|-----------|
| | (i) | (ii) | (iii) | (iv) |
| TRV III | 0 | 339,160 | 0 | 339,160 |
| TRV GP III | 0 | 339,160 | 0 | 339,160 |
| TRV GP III LLC | 0 | 339,160 | 0 | 339,160 |
| TRV IV | 0 | 2,132,867 | 0 | 2,132,867 |
| TRV GP IV | 0 | 2,132,867 | 0 | 2,132,867 |
| TRV GP IV LLC | 0 | 2,132,867 | 0 | 2,132,867 |
| Tepper | 318,672 | 339,160 | 318,672 | 339,160 |

(i) Sole power to vote or direct the vote

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

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

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

The percent of class was calculated based on 59,895,958 shares of common stock issued and outstanding as of November 3, 2023, as disclosed in the Issuer's 10-Q filed with the Securities and Exchange Commission on November 9, 2023.

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.

Not applicable.

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

Not applicable.

Item 9. Notice of Dissolution of Group.

Not applicable.

Item 10. Certification.

Not applicable.

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: February 14, 2024

THIRD ROCK VENTURES III, L.P.

By: THIRD ROCK VENTURES GP III, L.P.,
General Partner

By: TRV GP III, LLC,
General Partner

By: /s/ Kevin Gillis
Kevin Gillis
Chief Operating Officer

THIRD ROCK VENTURES GP III, L.P.

By: TRV GP III, LLC,
General Partner

By: /s/ Kevin Gillis
Kevin Gillis
Chief Operating Officer

TRV GP III, LLC

By: /s/ Kevin Gillis
Kevin Gillis
Chief Operating Officer

THIRD ROCK VENTURES IV, L.P.

By: THIRD ROCK VENTURES GP IV, L.P.,
General Partner

By: TRV GP IV, LLC,
General Partner

By: /s/ Kevin Gillis
Kevin Gillis
Chief Operating Officer

THIRD ROCK VENTURES GP IV, L.P.

By: TRV GP IV, LLC,
General Partner

By: /s/ Kevin Gillis
Kevin Gillis
Chief Operating Officer

TRV GP IV, LLC

By: /s/ Kevin Gillis
Kevin Gillis
Chief Operating Officer

ROBERT I. TEPPER

/s/ Kevin Gillis, As attorney-in-fact
Robert I. Tepper