
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

SCHEDULE 13D
(Rule 13d-101)

**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. 4)***

Idera Pharmaceuticals, Inc.
(Name of Issuer)

Common Stock, \$0.001 par value per share
(Title of Class of Securities)

45168K306
(CUSIP number)

Youssef El Zein
c/o Pillar Invest Offshore SAL
Starco Center, Bloc B, Third Floor
Omar Daouk Street
Beirut 2020-3313, Lebanon

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

October 13, 2016
(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 Rule 13d-1(e), 13d-1(f) or 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 (the "Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act.

(Continued on the following pages)

(Page 1 of 22 Pages)

| | | |
|--|--|---|
| 1. | NAMES OF REPORTING PERSONS Pillar Pharmaceuticals I, 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. | SOURCE OF FUNDS* WC | |
| 5. | CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) or 2(e) <input type="checkbox"/> | |
| 6. | CITIZENSHIP OR PLACE OF ORGANIZATION Cayman Islands | |
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH | 7. | SOLE VOTING POWER 29,253,114(1) |
| | 8. | SHARED VOTING POWER 0 |
| | 9. | SOLE DISPOSITIVE POWER 29,253,114(1) |
| | 10. | SHARED DISPOSITIVE POWER 0 |
| 11. | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 29,253,114(1) | |
| 12. | CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/> | |
| 13. | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 11 19.9%(1) | |
| 14. | TYPE OF REPORTING PERSON PN | |

- (1) This Amendment No. 4 to Schedule 13D is filed by Pillar Pharmaceuticals I, L.P. (“Pillar”), Pillar Pharmaceuticals II, L.P. (“Pillar II”), Pillar Pharmaceuticals III, L.P. (“Pillar III”), Pillar Pharmaceuticals IV, L.P. (“Pillar IV”), Pillar Pharmaceuticals V, L.P. (“Pillar V”), Pillar Invest Corporation (“Pillar GP”) and Youssef El Zein (together with Pillar, Pillar II, Pillar III, Pillar IV, Pillar V, and Pillar GP, the “Reporting Persons”). The Reporting Persons expressly disclaim status as a “group” for purposes of this Amendment No. 4 to Schedule 13D. Pillar, Pillar II, Pillar III, Pillar IV, Pillar V, and Pillar GP expressly disclaim beneficial ownership of any shares of the Issuer’s common stock, par value \$0.001 per share (the “Common Stock”), held directly by Mr. El Zein, and Mr. El Zein expressly disclaims beneficial ownership of any shares of Common Stock held directly by Pillar, Pillar II, Pillar III, Pillar IV, Pillar V and indirectly by Pillar GP (including the Besancon Shares). Pillar, Pillar II, Pillar III, Pillar IV and Pillar V expressly disclaim beneficial ownership of any shares of Common Stock over which Pillar GP has investment discretion (the “Besancon Shares”) pursuant to that certain Advisory Agreement (the “Advisory Agreement”) between Pillar GP and Participations Besancon (“Besancon”). Besancon is an investment fund having no affiliation with the Reporting Persons. Pillar directly holds (i) 2,090,125 shares of Common Stock; and (ii) warrants (the “Series D Pillar Warrants”) representing 2,810,650 shares of Common Stock, which are presently exercisable (subject to the Conversion Cap). Pillar II directly holds (i) 6,135,132 shares of Common Stock; and (ii) warrants (the “Series E Pillar II Warrants”) representing 5,034,061 shares of Common Stock, which are presently exercisable (subject to the Conversion Cap). Pursuant to the Advisory Agreement, Pillar GP also has investment discretion over 2,328,921 of Common Stock, Series E Pillar Warrants representing 2,218,020 shares of Common Stock, which are presently exercisable (subject to the Conversion Cap), 2,400,000 of Common Stock and warrants representing 1,900,000 shares of Common Stock, each acquired in a public offering of the Issuer on May 7, 2013 (the “May 7 Offering”) which are presently exercisable, and in each case are held directly by Besancon, and 929,032 shares of Common Stock of the Issuer acquired in a public offering of the Issuer on September 30, 2013 (the “September 30 Offering”) and 1,000,000 shares of Common Stock of the Issuer acquired in a public offering of the Issuer on October 7, 2016 (the “October 7 Offering”) which are held directly by Besancon. Pillar III directly holds 3,871,839 shares of Common Stock of the Issuer. Pillar IV directly holds 200,000 shares of Common Stock of the Issuer acquired in the September 30 Offering. Mr. El Zein directly holds 516,892 shares of Common Stock and options to buy 198,917 shares of Common Stock, which are exercisable within sixty days of the Closing Date. Pillar V directly holds 875,000 shares of Common Stock of the Issuer acquired in the October 7 Offering. Pursuant to Rule 13d-3 of the Securities Exchange Act of 1934 (the “Exchange Act”), the number of shares of Common Stock beneficially owned by the Reporting Persons, and the applicable percentage, represent (prior to the application of the Conversion Cap and the Voting Cap) (A) shares of Common Stock issued upon Pillar’s exercise of its Series D Pillar Warrants, assuming that no other holder of Series D Pillar Warrants exercisable for shares of Common Stock exercised any such Series D Pillar Warrants; (B) shares of Common Stock issued upon Pillar II’s exercise of its Series E Pillar Warrants, assuming that no other holder of Series E Pillar Warrants exercisable for shares of Common Stock exercised any such Series E Pillar Warrants; (C) shares of Common Stock issued upon Besancon’s exercise of its Series E Pillar Warrants, assuming that no other holder of Series E Pillar Warrants exercisable for shares of Common Stock exercised any such Series E Pillar Warrants; (D) shares of Common Stock issued upon Pillar III’s exercise of its Pillar III Offering Warrants, assuming that no other holder of Pillar III Offering Warrants exercisable for shares of Common Stock exercised any such Pillar III Offering Warrants; and (E) shares of Common Stock issued upon Mr. El Zein’s exercise of his vested options, assuming that no other holder of options exercisable for shares of Common Stock exercises any such options. In addition, the terms of the Series D Pillar Warrants and the Series E Pillar Warrants (together, the “Warrants”), provide that the Issuer shall not effect any exercise of Warrants, for a number of shares of Common Stock in excess of that number of shares of Common Stock which, upon giving effect to such exercise would cause (a) the aggregate number of shares of Common Stock beneficially owned by Pillar and Pillar II and their affiliates to exceed 19.99% of the total number of issued and outstanding shares of Common Stock of the Issuer as of the Closing Date, or (b) the combined voting power of the securities of the Issuer beneficially owned by Pillar and Pillar II and their affiliates to exceed 19.99% of the combined voting power of all of the securities of the Issuer outstanding as of the Closing Date (collectively, the “Conversion Cap”). In addition, the terms of the Preferred Stock provide that, for so long as the total number of shares of Common Stock beneficially owned by Pillar and Pillar II and their affiliates exceeds 19.99% (subject to an increase to 25% upon approval of the stockholders of the Issuer as described below) of the then outstanding shares of Common Stock, in any election of directors and in any other vote to be taken by the stockholders of the Issuer, Pillar and Pillar II and their affiliates will vote such number of shares of Common Stock beneficially owned by them in excess of 19.99% (subject to an increase to 25% upon approval of the stockholders of the Issuer as described below) in the same manner as, and in the same proportion to, the votes cast by the other holders of the Issuer’s Common Stock or other voting securities (the “Voting Cap”). Accordingly, the 29,253,114 shares of Common Stock reported above represent 19.99% of the 146,338,744 shares of Common Stock outstanding as of the consummation of the October 7 Offering (the “Closing Date”).

| | | |
|--|--|---|
| 1. | NAMES OF REPORTING PERSONS Pillar Pharmaceuticals II, 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. | SOURCE OF FUNDS* WC | |
| 5. | CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) or 2(e) <input type="checkbox"/> | |
| 6. | CITIZENSHIP OR PLACE OF ORGANIZATION Cayman Islands | |
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH | 7. | SOLE VOTING POWER 29,253,114(1) |
| | 8. | SHARED VOTING POWER 0 |
| | 9. | SOLE DISPOSITIVE POWER 29,253,114(1) |
| | 10. | SHARED DISPOSITIVE POWER 0 |
| 11. | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 29,253,114(1) | |
| 12. | CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/> | |
| 13. | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 11 19.9%(1) | |
| 14. | TYPE OF REPORTING PERSON PN | |

| | | |
|--|--|---|
| 1. | NAMES OF REPORTING PERSONS Pillar Pharmaceuticals 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. | SOURCE OF FUNDS* WC | |
| 5. | CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) or 2(e) <input type="checkbox"/> | |
| 6. | CITIZENSHIP OR PLACE OF ORGANIZATION Cayman Islands | |
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH | 7. | SOLE VOTING POWER 29,253,114(1) |
| | 8. | SHARED VOTING POWER 0 |
| | 9. | SOLE DISPOSITIVE POWER 29,253,114(1) |
| | 10. | SHARED DISPOSITIVE POWER 0 |
| 11. | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 29,253,114(1) | |
| 12. | CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/> | |
| 13. | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 11 19.9%(1) | |
| 14. | TYPE OF REPORTING PERSON PN | |

| | | |
|--|--|---|
| 1. | NAMES OF REPORTING PERSONS Pillar Pharmaceuticals 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. | SOURCE OF FUNDS* WC | |
| 5. | CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) or 2(e) <input type="checkbox"/> | |
| 6. | CITIZENSHIP OR PLACE OF ORGANIZATION Cayman Islands | |
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH | 7. | SOLE VOTING POWER 29,253,114(1) |
| | 8. | SHARED VOTING POWER 0 |
| | 9. | SOLE DISPOSITIVE POWER 29,253,114(1) |
| | 10. | SHARED DISPOSITIVE POWER 0 |
| 11. | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 29,253,114(1) | |
| 12. | CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/> | |
| 13. | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 11 19.9%(1) | |
| 14. | TYPE OF REPORTING PERSON PN | |

| | | |
|--|--|---|
| 1. | NAMES OF REPORTING PERSONS Pillar Pharmaceuticals V, 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. | SOURCE OF FUNDS* WC | |
| 5. | CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) or 2(e) <input type="checkbox"/> | |
| 6. | CITIZENSHIP OR PLACE OF ORGANIZATION Cayman Islands | |
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH | 7. | SOLE VOTING POWER 29,253,114(1) |
| | 8. | SHARED VOTING POWER 0 |
| | 9. | SOLE DISPOSITIVE POWER 29,253,114(1) |
| | 10. | SHARED DISPOSITIVE POWER 0 |
| 11. | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 29,253,114(1) | |
| 12. | CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/> | |
| 13. | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 11 19.9%(1) | |
| 14. | TYPE OF REPORTING PERSON PN | |

| | | |
|--|--|---|
| 1. | NAMES OF REPORTING PERSONS Pillar Invest Corporation | |
| 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. | SOURCE OF FUNDS* AF | |
| 5. | CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) or 2(e) <input type="checkbox"/> | |
| 6. | CITIZENSHIP OR PLACE OF ORGANIZATION Cayman Islands | |
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH | 7. | SOLE VOTING POWER 29,253,114(1) |
| | 8. | SHARED VOTING POWER 0 |
| | 9. | SOLE DISPOSITIVE POWER 29,253,114(1) |
| | 10. | SHARED DISPOSITIVE POWER 0 |
| 11. | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 29,253,114(1) | |
| 12. | CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/> | |
| 13. | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 11 19.9%(1) | |
| 14. | TYPE OF REPORTING PERSON PN | |

| | | |
|--|--|---|
| 1. | NAMES OF REPORTING PERSONS Youssef El Zein | |
| 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. | SOURCE OF FUNDS* AF | |
| 5. | CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) or 2(e) <input type="checkbox"/> | |
| 6. | CITIZENSHIP OR PLACE OF ORGANIZATION France and Lebanon | |
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH | 7. | SOLE VOTING POWER 29,253,114(1) |
| | 8. | SHARED VOTING POWER 0 |
| | 9. | SOLE DISPOSITIVE POWER 29,253,114(1) |
| | 10. | SHARED DISPOSITIVE POWER 0 |
| 11. | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 29,253,114(1) | |
| 12. | CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/> | |
| 13. | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 11 19.9%(1) | |
| 14. | TYPE OF REPORTING PERSON IN | |

ITEM 1. Security and Issuer.

This Amendment No. 4 to Schedule 13D relates to the common stock, par value \$0.001 per share (the "Common Stock"), of Idera Pharmaceuticals, Inc., a corporation organized under the laws of the state of Delaware (the "Company" or the "Issuer"), with its principal executive offices located at 167 Sidney Street, Cambridge, MA 02139. Information given in response to each item shall be deemed incorporated by reference in all other items, as applicable.

ITEM 2. Identity and Background.

(a) This Amendment No. 4 to Schedule 13D is being filed by Pillar Pharmaceuticals I, L.P., a Cayman Island limited partnership ("Pillar"), Pillar Pharmaceuticals II, L.P., a Cayman Island limited partnership ("Pillar II"), Pillar Pharmaceuticals III, L.P., a Cayman Island limited partnership ("Pillar III"), Pillar Pharmaceuticals IV, L.P., a Cayman Island limited partnership ("Pillar IV"), Pillar Pharmaceuticals V, L.P., a Cayman Island limited partnership ("Pillar V"), Pillar Invest Corporation, a Cayman Island exempted company ("Pillar GP"), and Youssef El Zein.

Each of the foregoing persons or entities is referred to herein as a "Reporting Person" or collectively as the "Reporting Persons."

Pillar is the direct holder of certain warrants (the "Series D Pillar Warrants") to purchase shares of Common Stock described in this Amendment No. 4 to Schedule 13D. Pillar II is the direct holder of certain warrants (the "Series E Pillar II Warrants") to purchase shares of Common Stock more fully described in this Amendment No. 4 to Schedule 13D. Pillar III is the direct holder of certain shares of Common Stock (the "Pillar III Common Stock") and certain warrants (the "Pillar III Offering Warrants") to purchase shares of Common Stock more fully described in this Amendment No. 4 to Schedule 13D. Pillar IV is the direct holder of certain shares of Common Stock (the "Pillar IV Common Stock") and Pillar V is the direct holder of certain shares of Common Stock (the "Pillar V Common Stock"). Mr. El Zein is the direct holder of certain shares of Common Stock and options to purchase shares of Common Stock described in this Amendment No. 4 to Schedule 13D. Pillar, Pillar II, Pillar III, Pillar IV and Pillar V are a private investment funds engaged in the business of acquiring, holding and disposing of investments in various companies. Pillar GP is the general partner of Pillar, Pillar II, Pillar III, Pillar IV and Pillar V. Pursuant to that certain Advisory Agreement (the "Advisory Agreement") between Pillar GP and Participations Besancon ("Besancon"), Pillar GP also has investment discretion over certain shares of Series E Preferred Stock and Series E Pillar Warrants held directly by Besancon and certain shares of Common Stock of the Issuer and warrants representing shares of Common Stock, each acquired in a public offering of the Issuer on May 7, 2013 (the "May 7 Offering") which are presently exercisable, and in each case are held directly by Besancon, and certain shares of Common Stock of the Issuer acquired in a public offering of the Issuer on September 30, 2013 (the "September 30 Offering") and in a public offering of the Issuer on October 7, 2016 (the "October 7 Offering") held directly by Besancon. Besancon is an investment fund having no affiliation with the Reporting Persons. Mr. El Zein is a director and controlling stockholder of Pillar GP.

(b) The business address of each of the foregoing Reporting Persons is c/o Pillar Invest Offshore SAL, Starco Center, Bloc B, Third Floor, Omar Daouk Street, Beirut 2020-3313, Lebanon.

(c) Youssef El Zein is a director and controlling stockholder of Pillar GP. Pillar GP's principal business consists of investment management.

(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 were a party to a civil proceeding of a judicial or administrative body of competent jurisdiction and as a result of such proceeding was or is 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) Youssef El Zein is a citizen of France and the Republic of Lebanon.

ITEM 3. Source and Amount of Funds or Other Consideration.

The information set forth in Item 4 hereof is hereby incorporated by reference into this Item 3, as applicable.

ITEM 4. Purpose of Transaction.***Series D Financing*****Convertible Preferred Stock and Warrant Purchase Agreement**

On November 4, 2011, Pillar and the Issuer entered into a Convertible Preferred Stock and Warrant Purchase Agreement (the "Series D Purchase Agreement") pursuant to which Pillar agreed to acquire from the Issuer (i) 1,124,260 shares of Series D Preferred Stock and (ii) Series D Warrants to purchase 2,810,650 shares of Common Stock, for an aggregate purchase price of \$9,499,997. The transaction closed on November 4, 2011 (the "Series D Closing Date"). The source of funds for the purchase was the working capital of Pillar.

Limitations on Conversion and Exercise

The terms of the Series D Preferred Stock and the Series D Warrants provide that the Issuer shall not effect (i) any conversion of Series D Preferred Stock or (ii) any exercise of Series D Warrants, for a number of shares of Common Stock in excess of that number of shares of Common Stock which, upon giving effect to such conversion or exercise, as the case may be, would cause (A) the aggregate number of shares of Common Stock beneficially owned by Pillar and its affiliates to exceed 19.99% of the total number of issued and outstanding shares of Common Stock of the Issuer as of the Series D Closing Date, or (B) the combined voting power of the securities of the Issuer beneficially owned by Pillar and its affiliates to exceed 19.99% of the combined voting power of all of the securities of the Issuer outstanding as of the Series D Closing Date. As described below, the limitation on the exercise of the Series D Warrants was amended pursuant to the Warrant Amendment. As of the date of this filing, the Series D Preferred Stock has been converted to Common Stock of the Issuer.

Standstill

The Series D Purchase Agreement provides that, for so long as the total number of shares of Common Stock beneficially owned by Pillar and its affiliates exceeds 15% of the then outstanding shares of Common Stock, neither Pillar nor its affiliates will, directly or indirectly (unless specifically invited in writing by the Issuer to do so):

- (a) effect or seek, initiate, offer or propose (whether publicly or otherwise) or participate in, any acquisition of any securities (or beneficial ownership thereof) or assets of the Issuer; any tender or exchange offer, merger, consolidation or other business combination involving the Issuer; any recapitalization, restructuring, liquidation, dissolution or other extraordinary transaction with respect to the Issuer; or any "solicitation" of "proxies" or consents to vote any voting securities of the Issuer; provided, that this clause (a) shall not restrict the ability of any director of the Issuer that is affiliated with Pillar to (i) acquire, exercise or dispose of any stock options or other equity securities of the Issuer received as compensation for serving as a director or (ii) perform his or her duties as a director of the Issuer;
- (b) form, join or in any way participate in a "group" with respect to any securities of the Issuer;
- (c) otherwise act, alone or in concert with others, to seek to control or influence the management, the Company's Board of Directors (the "Board") or policies of the Issuer;
- (d) take any action which could reasonably be expected to force the Issuer to make a public announcement regarding any of the types of matters set forth in clause (a), (b) or (c) above; or
- (e) enter into any agreements, discussions or arrangements with any third party with respect to any of the foregoing.

This standstill provision shall not restrict Pillar's ability to exercise its preemptive rights as more fully described below under the heading "Preemptive Rights".

Voting

On any matter presented to the stockholders of the Issuer for their action or consideration at any meeting of stockholders of the Corporation, each holder of outstanding shares of Series D Preferred Stock shall be entitled to cast a number of votes equal to the number of whole shares of Common Stock into which the shares of Series D Preferred Stock held by such holder are convertible as of the record date for determining stockholders entitled to vote on such matter.

The Series D Purchase Agreement provides that, for so long as the total number of shares of Common Stock beneficially owned by Pillar and its affiliates exceeds 15% of the then outstanding shares of Common Stock, in any election of directors and in any other vote to be taken by the stockholders of the Issuer (whether taken at an annual or special meeting of stockholders or by written action), Pillar and its affiliates will vote such number of shares of Common Stock beneficially owned by Pillar and its affiliates in excess of 15% in the same manner as, and in the same proportion to, the votes cast by the other holders of the Company's Common Stock or other voting securities. As described below, this voting limitation was amended pursuant to the Purchase Agreement Amendment.

Preemptive Rights

The Series D Purchase Agreement provides that, in the event the Issuer on or prior to the earlier of (i) November 4, 2014 and (ii) the day that Pillar holds a number of shares of Series D Preferred Stock (including shares of Common Stock issued upon conversion of the Series D Preferred Stock) which is less than 50% of the number of shares of Series D Preferred Stock purchased by Pillar, proposes to:

(a) privately sell and issue securities of the Issuer, Pillar shall have the option to purchase, on the same terms and conditions offered by the Issuer to the other purchasers of such securities in such additional financing, up to that percentage of the securities sold in such additional financing equal to (A) the number of shares then held by Pillar as compared to (B) the total number of shares then outstanding, which pro rata amount shall not exceed 19.99% of such additional financing or

(b) enter into a loan financing for the purpose of raising capital and not for the purpose of purchasing equipment, or privately sell and issue convertible debt securities or preferred stock of the Issuer that ranks senior to the Preferred Stock, Pillar shall have the option to participate in such loan financing or other senior financings, on the same terms and conditions offered by the Issuer to the other participants or purchasers of securities in such senior financings, up to that percentage of the amount of the loan financing or of the securities sold in such senior financing equal to the product of:

(I) A fraction, the numerator of which equals the number of shares then held by Pillar and the denominator of which equals the total number of shares issued to Pillar; and

(II) If the closing date of the senior financing is on or prior to (i) November 4, 2012, 50%, (ii) November 4, 2013, 40%, or (iii) November 4, 2014, 30%.

Registration Rights Agreement

In connection with the Series D Purchase Agreement, Pillar entered into a Registration Rights Agreement, dated November 4, 2011 (the "Series D Registration Rights Agreement"), with the Issuer. The Series D Registration Rights Agreement provides that the Company will file a resale registration statement (the "Series D Resale Registration Statement") covering the shares of Common Stock issuable upon conversion of the Series D Preferred Stock and exercise of the Series D Warrants. The Issuer agreed to use its reasonable best efforts to cause to become effective the Series D Resale Registration Statement on or prior to February 2, 2012.

If (i) the Series D Resale Registration Statement is not declared effective on or before March 4, 2012 or (ii) after the Series D Resale Registration Statement has been declared effective, sales of any of the Registrable Securities (as defined in the Series D Registration Rights Agreement) cannot be made pursuant to such Series D Resale Registration Statement because such Series D Resale Registration Statement has been suspended (except as a result of a permitted suspension as provided in the Series D Registration Rights Agreement), then the Issuer shall pay to Pillar an amount equal to the product of (A) the aggregate purchase price of the Series D Preferred Stock then held by Pillar, multiplied by (B) one hundredths (.01), for each thirty (30) day period thereafter. Notwithstanding the foregoing, in no event shall the Issuer be obligated to make payments to Pillar in an aggregate amount that exceeds 10% of the aggregate purchase price paid by Pillar for the Series D Preferred Stock.

The Issuer will pay all registration expenses, other than underwriting discounts and commissions, related to the Issuer's performance of the Series D Registration Rights Agreement. The Series D Registration Rights Agreement contains customary cross-indemnification provisions.

The foregoing descriptions of the Series D Purchase Agreement and the Series D Registration Rights Agreement and of the terms the Certificate of Designations, Preferences and Rights of the Series D Preferred Stock and the Form of Series D Warrant issued to Pillar (collectively, the "Series D Transaction Documents"), do not purport to be complete and are qualified in their entirety by the terms of each such document, which are attached hereto as Exhibit 2, Exhibit 3, Exhibit 4 and Exhibit 5, respectively, and are incorporated herein by reference.

Series E Financing

Convertible Preferred Stock and Warrant Purchase Agreement

On November 9, 2012, Pillar II, Participations Besancon and the Issuer entered into a Convertible Preferred Stock and Warrant Purchase Agreement (the "Series E Purchase Agreement") pursuant to which (i) Pillar II acquired from the Issuer (a) 313,341 shares of Series E Preferred Stock (convertible into 6,266,820 shares of Common Stock) and (b) Series E Warrants to purchase 6,266,820 shares of Common Stock, and (ii) Participations Besancon acquired from the Issuer (a) 110,901 shares of Series E Preferred Stock (convertible into 2,218,020 shares of Common Stock) and (b) Series E Warrants to purchase 2,218,020 shares of Common Stock for an aggregate purchase price of \$6,999,993. The transaction closed on November 9, 2012 (the "November Closing Date"). In connection with the closing of the transaction, Abdul-Wahab Umari, a managing partner of Pillar GP, was elected to the Board upon the recommendation of its Nominating and Corporate Governance Committee effective immediately following the closing of the transactions contemplated by the Series E Purchase Agreement. The source of funds for the purchase by Pillar II was the working capital of Pillar II and the source of funds for the purchase by Besancon was the working capital of Besancon. As of the date of this filing, the Series E Preferred Stock has been converted to Common Stock of the Issuer.

Limitations on Transfer

The Series E Purchase Agreement provides restrictions on the transfer of any securities issued to Pillar II and Besancon (including securities convertible into or exercisable for Common Stock) pursuant to the Series E Purchase Agreement, including to not sell or transfer any such securities in one or a series of transactions if such transfer would, in the aggregate, result in the transfer more than 5% of the then outstanding combined voting power of the outstanding securities of the Company (excluding from this restriction certain transfers to permitted transferees or in connection with an underwritten public offering by the Company that has been approved by the Board).

Limitations on Conversion and Exercise

The terms of the Series E Preferred Stock and the Series E Warrants provide that the Issuer shall not effect (i) any conversion of Series E Preferred Stock or (ii) any exercise of Series E Warrants, for a number of shares of Common Stock in excess of that number of shares of Common Stock which, upon giving effect to such conversion or exercise, as the case may be, would cause (A) the aggregate number of shares of Common Stock beneficially owned by Pillar II, Besancon and/or its affiliates to exceed 19.99% (subject to an increase to 35% upon the approval by the stockholders of the Company of the issuance and sale by the Company to Pillar II and Besancon (together with all prior issuances and sales to Pillar) of a number of Shares of Common Stock (including securities convertible into or exercisable for Common Stock) that is greater than 19.99% of the outstanding Common Stock or outstanding voting power of the Company after such issuance and sale in accordance with Nasdaq Listing Rule 5636(b) (the "Nasdaq Proposal")) of the total number of issued and outstanding shares of Common Stock of the Issuer as of the November Closing Date, or (B) the combined voting power of the securities of the Issuer beneficially owned by Pillar II, Besancon and/or its affiliates to exceed 19.99% (subject to an increase to 35% upon stockholder approval of the Nasdaq Proposal) of the combined voting power of all of the securities of the Issuer outstanding as of the November Closing Date.

Standstill

The Series E Purchase Agreement provides that, for so long as the total number of shares of Common Stock beneficially owned by Pillar II, Besancon and/or its affiliates exceeds 15% of the then outstanding shares of Common Stock, neither Pillar II, Besancon nor their respective affiliates will, directly or indirectly (unless specifically invited in writing by the Issuer to do so):

- (a) effect or seek, initiate, offer or propose (whether publicly or otherwise) or participate in, any acquisition of any securities (or beneficial ownership thereof) or assets of the Issuer; any tender or exchange offer, merger, consolidation or other business combination involving the Issuer; any recapitalization, restructuring, liquidation, dissolution or other extraordinary transaction with respect to the Issuer; or any "solicitation" of "proxies" or consents to vote any voting securities of the Issuer; provided, that this clause (a) shall not restrict the ability of any director of the Issuer that is affiliated with Pillar II or Besancon to (i) acquire, exercise or dispose of any stock options or other equity securities of the Issuer received as compensation for serving as a director or (ii) perform his or her duties as a director of the Issuer;
- (b) form, join or in any way participate in a "group" with respect to any securities of the Issuer;
- (c) otherwise act, alone or in concert with others, to seek to control or influence the management, Board or policies of the Issuer;
- (d) nominate or otherwise support the election of any person as a director of the Company except as approved by the Board, subject to certain exceptions;
- (e) take any action which could reasonably be expected to force the Issuer to make a public announcement regarding any of the types of matters set forth in clause (a), (b), (c) or (d) above; or

(f) enter into any agreements, discussions or arrangements with any third party with respect to any of the foregoing.

This standstill provision shall not restrict Pillar II's or Besancon's ability to exercise its preemptive rights as more fully described below under the heading "Preemptive Rights".

Voting; Protective Provisions

For so long as at least 84,849 shares of Series E Preferred Stock (subject to adjustment) remain outstanding, the Company has agreed that it will not, directly or indirectly, (a) amend the Certificate of Incorporation or bylaws of the Company in a manner that adversely and uniquely affects the Series E Preferred Stock, (b) except as expressly permitted by the Certificate of Designations for the Series E Preferred Stock, purchase or redeem or pay or declare any dividend or make any distribution on, any shares of capital stock of the Company, or (c) recapitalize or reclassify any of the Common Stock, without in each case the written consent or affirmative vote of the holders of at least 51% of the then outstanding shares of Series E Preferred Stock (in addition to any other vote required by law or the Certificate of Incorporation).

Unless and until the stockholders of the Company approve the Nasdaq Proposal, the Series E Preferred Stock will have no voting rights. Subject to and effective upon the date that the stockholders of the Company approve the Nasdaq Proposal, each holder of outstanding shares of Series E Preferred Stock will be entitled to cast a number of votes equal to the lesser of (a) the number of whole shares of Common Stock into which the shares of Series E Preferred Stock held by such holder are convertible and (b) the product of the Voting Adjustment Percentage (as defined in the Certificate of Designations for the Series E Preferred Stock) multiplied by the number of whole shares of Common Stock into which the shares of Series E Preferred Stock held by such holder are convertible. The intent of the Voting Adjustment Percentage is to provide that the maximum aggregate voting power that the holders of Series E Preferred Stock and their affiliates may hold does not exceed 35% of the total outstanding voting power of the Company at any time. The Voting Adjustment Percentage does not modify the provisions set forth in the Series E Purchase Agreement that require the Pillar II, Besancon and their affiliates to vote any shares held by them in excess of the number of shares equal to 19.99% or 25%, as applicable, of the outstanding Common Stock (including shares of Common Stock issuable upon conversion or exercise of securities that are convertible into or exercisable for shares of Common Stock held by them and their affiliates) in the same manner and percentage as the holders of the Common Stock (other than Pillar II, Besancon and their affiliates) vote on such matter as more fully described below.

The Series E Purchase Agreement provides that, for so long as the total number of shares of Common Stock beneficially owned by Pillar II, Besancon and/or its affiliates exceeds 19.99% (subject to an increase to 25% upon stockholder approval of Nasdaq Proposal) of the then outstanding shares of Common Stock, in any election of directors and in any other vote to be taken by the stockholders of the Issuer (whether taken at an annual or special meeting of stockholders or by written action), Pillar II, Besancon and/or its affiliates will vote such number of shares of Common Stock beneficially owned by Pillar II, Besancon and/or its affiliates in excess of 19.99% (subject to an increase to 25% upon stockholder approval of Nasdaq Proposal) in the same manner as, and in the same proportion to, the votes cast by the other holders of the Company's Common Stock or other voting securities.

Each of Pillar II and Besancon agreed to refrain from exercising any dissenters' rights or rights of appraisal under applicable law at any time with respect to any sale of the Company to the extent such sale has been approved by the Board.

Preemptive Rights

The Series E Purchase Agreement provides that, in the event the Issuer on or prior to the earlier of (i) November 9, 2015 and (ii) the day that Pillar II or Besancon, respectively, holds a number of shares of Series E Preferred Stock (including shares of Common Stock issued upon conversion of the Series E Preferred Stock) which is less than 50% of the number of shares of Series E Preferred Stock purchased by Pillar II or Besancon, respectively, proposes to:

(a) privately sell and issue securities of the Issuer, Pillar II and Besancon, respectively, shall have the option to purchase, on the same terms and conditions offered by the Issuer to the other purchasers of such securities in such additional financing, up to that percentage of the securities sold in such additional financing equal to (A) the number of shares then held by each of Pillar II and Besancon, respectively, as compared to (B) the total number of shares then outstanding, which pro rata amount shall not exceed 19.99% (subject to an increase to 35% upon stockholder approval of Nasdaq Proposal) of such additional financing or

(b) enter into a loan financing for the purpose of raising capital and not for the purpose of purchasing equipment, or privately sell and issue convertible debt securities or preferred stock of the Issuer that ranks senior to the Series E Preferred Stock, each of Pillar II and Besancon, respectively, shall have the option to participate in such loan financing or other senior financings, on the same terms and conditions offered by the Issuer to the other participants or purchasers of securities in such senior financings, up to that percentage of the amount of the loan financing or of the securities sold in such senior financing equal to the product of:

(I) A fraction, the numerator of which equals the number of shares then held by each of Pillar II and Besancon, respectively, and the denominator of which equals the total number of shares issued to each of Pillar II and Besancon, respectively; and

(II) If the closing date of the senior financing is on or prior to (i) November 9, 2013, 50%, (ii) November 9, 2014, 40%, or (iii) November 9, 2015, 30%.

Automatic Adjustments to Series D Preferred Stock and Series D Warrants

As a result of the transactions contemplated by the Series E Purchase Agreement, the conversion price of the Series D Preferred Stock automatically adjusted downward to \$1.46 and the exercise price of the Series D Warrants automatically adjusted downward to \$1.46.

Registration Rights Agreement

In connection with the Series E Purchase Agreement, Pillar II and Besancon entered into a Registration Rights Agreement, dated November 9, 2012 (the "Series E Registration Rights Agreement"), with the Issuer. The Series E Registration Rights Agreement provides that the Company will file a resale registration statement (the "Series E Resale Registration Statement") covering the shares of Common Stock issuable upon conversion of the Series E Preferred Stock and exercise of the Series E Warrants. The Issuer agreed to use its reasonable best efforts to cause to become effective the Series E Resale Registration Statement on or prior to February 7, 2013.

If (i) the Series E Resale Registration Statement is not declared effective on or before March 30, 2013 or (ii) after the Series E Resale Registration Statement has been declared effective, sales of any of the Registrable Securities (as defined in the Series E Registration Rights Agreement) cannot be made pursuant to such Series E Resale Registration Statement because such Series E Resale Registration Statement has been suspended (except as a result of a permitted suspension as provided in the Series E Registration Rights Agreement), then the Issuer shall pay to Pillar II and Besancon an amount equal to the product of (A) the aggregate purchase price of the Series E Preferred Stock then held by Pillar II and Besancon, multiplied by (B) one hundredths (.01), for each thirty (30) day period thereafter. Notwithstanding the foregoing, in no event shall the Issuer be obligated to make payments to Pillar II and Besancon in an aggregate amount that exceeds 10% of the aggregate purchase price paid by Pillar II and Besancon for the Series E Preferred Stock.

The Issuer will pay all registration expenses, other than underwriting discounts and commissions, related to the Issuer's performance of the Series E Registration Rights Agreement. The Series E Registration Rights Agreement contains customary cross-indemnification provisions.

Amendment No. 1 to Series D Convertible Preferred Stock and Warrant Purchase Agreement

In connection with the Series E Purchase Agreement, Pillar entered into Amendment No. 1 to Convertible Preferred Stock and Warrant Purchase Agreement, dated November 9, 2012 (the "Purchase Agreement Amendment"), with the Issuer. The Purchase Agreement Amendment provides that, for so long as the total number of shares of Common Stock beneficially owned by Pillar or its affiliates exceeds 19.99% (subject to an increase to 25% upon stockholder approval of the Nasdaq Proposal) of the then outstanding shares of Common Stock, in any election of directors and in any other vote to be taken by the stockholders of the Issuer (whether taken at an annual or special meeting of stockholders or by written action), Pillar or its affiliates will vote such number of shares of Common Stock beneficially owned by Pillar or its affiliates in excess of 19.99% (subject to an increase to 25% upon stockholder approval of the Nasdaq Proposal) in the same manner as, and in the same proportion to, the votes cast by the other holders of the Company's Common Stock or other voting securities. Pillar agreed to refrain from exercising any dissenters' rights or rights of appraisal under applicable law at any time with respect to any sale of the Company to the extent such sale has been approved by the Board.

The Purchase Agreement Amendment also provides for certain restrictions on the transfer of any securities issued to Pillar (including securities convertible into or exercisable for Common Stock) pursuant to the Series D Purchase Agreement, including to not sell or transfer any such securities in one or a series of transactions if such transfer would, in the aggregate, result in the transfer more than 5% of the then outstanding combined voting power of the outstanding securities of the Company (excluding from this restriction certain transfers to permitted transferees or in connection with an underwritten public offering by the Company that has been approved by the Board).

Amendment No. 1 to Common Stock Purchase Warrant

In connection with the Series E Purchase Agreement, Pillar entered into Amendment No. 1 to Common Stock Purchase Warrant, dated November 9, 2012 (the "Warrant Amendment"), with the Issuer. The Warrant Amendment provides that the exercise limitation set forth therein shall be amended to increase the 19.99% limitation on exercise to 35% upon the Company's receipt of stockholder approval of the Nasdaq Proposal.

The foregoing descriptions of the Series E Purchase Agreement and the Series E Registration Rights Agreement and of the terms the Certificate of Designations, Preferences and Rights of the Series E Preferred Stock and the Form of Series E Warrant issued to Pillar and Besancon, the Purchase Agreement Amendment and the Warrant Amendment (collectively, the "Series E Transaction Documents"), do not purport to be complete and are qualified in their entirety by the terms of each such document, which are attached hereto as Exhibit 6, Exhibit 7, Exhibit 8, Exhibit 9, Exhibit 10 and Exhibit 11, respectively, and are incorporated herein by reference.

Amendments to Series D and Series E**April 22 Amendment Agreement**

On April 22, 2013, Pillar I and Pillar II entered into an agreement with the Issuer pursuant to which, in connection with a public offering of the Issuer on May 7, 2013 (the "Offering"), Pillar I irrevocably agreed to waive and not exercise the rights, powers, preferences and other terms of the Series D Preferred Stock under Section 6 of the Certificate of Designations, Preferences and Rights of Series D Preferred Stock (the "Series D Certificate of Designations"), including without limitation the right to require the Issuer to purchase all or any portion of the shares of the Issuer's Series D Preferred Stock at a price equal to the original Series D Preferred Stock purchase price per share plus all accrued or declared but unpaid dividends thereon upon the occurrence of specified fundamental changes such as mergers, consolidations, business combinations, stock purchases or similar transactions resulting in a person or group unaffiliated with any holder of the Series D Preferred Stock owning 66.67% or more of the outstanding voting securities of the Issuer or successor entity.

Under the agreement, the Issuer and Pillar I and Pillar II agreed, among other things:

- to an amendment to the Series D Certificate of Designations for the Series D Preferred Stock that would cause:
 - the dividend provisions of the Series D Certificate of Designations to change the date after which the Issuer may elect to pay dividends in shares of its common stock from December 31, 2014 to October 1, 2013, and to allow for the payment of such dividends in shares of a to-be-created new series of non-voting preferred stock in the event that payment of such dividends may not be made in shares of its common stock; and
 - in connection with the waiver of the right to require the Issuer to purchase the Series D Preferred Stock upon the occurrence of specified fundamental changes, to modify the Series D Certificate of Designations to provide, in the event of a sale of the Issuer, for the distribution of any assets that remain available for distribution to the Issuer's stockholders, after payment to the holders of the Issuer's Series A Convertible Preferred Stock and any other class of the Issuer's capital stock that ranks senior to the Series D Preferred Stock, to the holders of the Series D Preferred Stock on a pro rata basis with the holders of the Issuer's common stock, Series E Preferred Stock and such new series of non-voting preferred stock; and
- to an amendment to the Certificate of Designations, Preferences and Rights of Series E Preferred Stock (the "Series E Certificate of Designations"), that:
 - modified the dividend provisions of the Series E Certificate of Designations to allow for the payment of dividends in shares of the Issuer's common stock commencing October 1, 2013; and
 - allowed for the payment of dividends in shares of a to-be-created new series of non-voting preferred stock in the event that payment of such dividends may not be made in shares of the Issuer's common stock as a result of the application of the beneficial ownership and voting power limitations set forth in the Series E Certificate of Designations.

In addition, the Issuer agreed to seek approval from its stockholders at the 2013 annual meeting of stockholders of amendments to the Series D Certificate of Designations and Series E Certificate of Designations to effect these changes to the dividend provisions of the Series D Preferred Stock and Series E Preferred Stock, the redemption rights of the holders of the Series D Preferred Stock and the rights of the holders of the Series D Preferred Stock to distributions in the event of a sale of the Issuer. Each of Pillar I and Pillar II agreed:

- to vote, and to cause its affiliates to vote, all shares of the Issuer's voting stock held by Pillar I, Pillar II and their affiliates, and over which they have the power to vote, in favor of such amendments; and
- not to, and to cause their affiliates not to, sell or transfer any shares of common stock, Series D Preferred Stock or Series E Preferred Stock held by them to any person, entity or group unless such proposed transferee agrees in a written instrument executed by such transferee, the applicable entity and the Issuer to take and hold such securities subject to, among other things, the agreement and to be bound by the terms of the agreement, including the waiver of rights, voting agreements and restrictions on transfer set forth therein.

The agreement became effective upon the consummation of the May 7 Offering on May 7, 2013.

April 22 Amendment Warrants

Under the April 22 agreement, in consideration of the agreements of Pillar I and Pillar II under the agreement and the delivery of the waiver by Pillar I, and for no additional cash consideration, the Issuer agreed to issue to Series D Pillar Warrants to purchase up to 1,000,000 shares of the Issuer's common stock. These Series D Pillar Warrants have an exercise price per share equal to \$0.61. The Pillar I Warrants are exercisable immediately, and will expire if not exercised on or prior to the fifth anniversary from the date of issuance. The Series D Pillar Warrants provide that, after the second anniversary of the date of issuance, the Issuer may redeem the Series D Pillar Warrants for \$0.01 per share of common stock issuable on exercise of the Series D Pillar Warrants following notice to the holder thereof if the closing price of the Issuer's common stock for 20 or more trading days in a period of 30 consecutive trading days is greater than or equal to \$2.80 per share.

April 30 Amendment Agreement

On April 30, 2013, Pillar I, Pillar II and Besancon entered into an agreement with the Issuer pursuant to which Pillar I, in its capacity as holder of 100% of the Series D Preferred Stock, irrevocably agreed to waive the right of the holders of the Series D Preferred Stock under Section 2.1 of the Series D Certificate of Designations to receive, in the event of a voluntary or involuntary liquidation, dissolution or winding up of the Issuer (a "Liquidation") an amount per share of Series D Preferred Stock equal to the original issue price of such share of Series D Preferred Stock plus any dividends accrued or declared but unpaid thereon to the extent such amount is greater than the amount that would have been payable with respect to such share had all shares of Series D Preferred Stock been converted into shares of the Issuer's Common Stock immediately prior to such Liquidation, and that upon a Liquidation the holders of the Series D Preferred Stock will receive an amount per share of Series D Preferred Stock equal to the amount that would be payable with respect to such share had all shares of Series D Preferred Stock been converted into shares of the Issuer's Common Stock immediately prior to such Liquidation.

In addition, under the agreement, Pillar II and Besancon, together the holders of 100% of the Issuer's Series E Preferred Stock, irrevocably agreed to waive the right of the holders of the Series E Preferred Stock under Section 2.1.1 of the Series E Certificate of Designations to receive, in the event of a Liquidation, an amount per share of Series E Preferred Stock equal to the original issue price of such share of Series E Preferred Stock plus any dividends accrued or declared but unpaid thereon to the extent such amount is greater than the amount that would have been payable with respect to such share had all shares of Series E Preferred Stock been converted into shares of the Issuer's Common Stock immediately prior to such Liquidation, and that upon a Liquidation the holders of the Series E Preferred Stock will receive under Section 2.1 of the Series E Certificate of Designations an amount per share of Series E Preferred Stock equal to the amount that would be payable with respect to such share had all shares of Series E Preferred Stock been converted into shares of the Issuer's Common Stock immediately prior to such Liquidation.

Under the agreement, the Issuer agreed to seek approval from its stockholders at its 2013 annual meeting of stockholders of amendments to the Series D Certificate of Designations and Series E Certificate of Designations to effect these changes to the liquidation provisions of the Series D Preferred Stock and Series E Preferred Stock, and each of Pillar I, Pillar II and Besancon agreed:

- to vote, and to cause its affiliates to vote, all shares of the Issuer's voting stock held by them or their affiliates, and over which they have the power to vote, in favor of such amendments; and
- not to, and to cause their affiliates not to, sell or transfer any shares of Common Stock, Series D Preferred Stock or Series E Preferred Stock held by them to any person, entity or group unless such proposed transferee agrees in a written instrument executed by such transferee, the applicable entity and the Issuer to take and hold such securities subject to, among other things, the agreement and to be bound by the terms of the agreement, including the waiver of rights, voting agreements and restrictions on transfer set forth therein.

The agreement became effective upon the consummation of the May 7 Offering on May 7, 2013.

April 30 Amendment Warrants

In consideration of the agreements of Pillar I, Pillar II and Besancon under the April 30 agreement and the delivery of the waivers by Pillar I, Pillar II and Besancon, and for no additional cash consideration, the Issuer agreed to issue to Pillar I, Pillar II and Besancon warrants (the "Pillar/Besancon Warrants" and together with the Series D Pillar Warrants, the "Amendment Warrants") to purchase up to an aggregate of 1,000,000 shares of the Issuer's Common Stock (with each of Pillar I, Pillar II and Besancon receiving its pro rata portion thereof). The Pillar/Besancon Warrants have an exercise price per share equal to \$0.79.

Registration Rights Agreement

In addition, Pillar I, Pillar II and Besancon entered into a Registration Rights Agreement with the Issuer pursuant to which the Issuer agreed to file a registration statement with the Securities and Exchange Commission regarding the resale of the shares of common stock issuable upon exercise of the Amendment Warrants. The Issuer will be subject to specified cash penalties if it fails to file and maintain an effective registration statement. Such penalties are limited to a cumulative maximum penalty equal to 10% of the aggregate exercise price of the Amendment Warrants then held by Pillar I, Pillar II and Besancon which are not able to be sold pursuant to a registration statement. The Issuer will be required to use its reasonable best efforts to maintain the registration statement's effectiveness until no shares of common stock issued or issuable upon exercise of the Amendment Warrants remain outstanding or issuable, as applicable.

The foregoing descriptions of the Amendment Warrants, the April 22 Amendment Agreement, the April 30 Amendment Agreement, and the Registration Rights Agreement and of the terms the amended Series D and Series E preferred stock and Amendment Warrants, do not purport to be complete and are qualified in their entirety by the terms of each such document, which are attached hereto as Exhibit 12, Exhibit 13, Exhibit 14, Exhibit 15, and Exhibit 3, respectively, and are incorporated herein by reference.

May 2013 Underwritten Public Offering

On May 1, 2013, the Issuer priced an underwritten public offering of its Common Stock and Warrants to Purchase Common Stock. In that offering, (i) Pillar Pharmaceuticals III, L.P. purchased 2,600,000 shares of Common Stock and Warrants to Purchase 2,600,000 shares of Common Stock from the underwriter for gross proceeds of \$1,300,000 and (ii) Besancon purchased 2,400,000 shares of Common Stock and Warrants to Purchase 2,400,000 shares of Common Stock from the underwriter for gross proceeds of \$1,200,000. The public offering closed on May 7, 2013.

September 2013 Underwritten Public Offering

On September 26, 2013, the Issuer priced an underwritten public offering of its Common Stock and Warrants to Purchase Common Stock. In that offering, (i) Pillar Pharmaceuticals IV, L.P. purchased 845,161 shares of Common Stock from the underwriter for gross proceeds of \$1,310,000 and (ii) Besancon purchased 929,032 shares of Common Stock from the underwriter for gross proceeds of \$1,440,000. The public offering closed on September 30, 2013.

October 2016 Underwritten Public Offering

On October 7, 2016, the Issuer priced an underwritten public offering of its Common Stock. In that offering, (i) Pillar Pharmaceuticals V, L.P. purchased 875,000 shares of Common Stock from the underwriter for gross proceeds of \$1,750,000 and (ii) Besancon purchased 1,000,000 shares of Common Stock from the underwriter for gross proceeds of \$2,000,000. The public offering closed on October 13, 2016.

Additional Disclosure

The Series D Preferred Stock, Series E Preferred Stock, Series D Warrants, Series E Warrants, Amendment Warrants, Common Stock and Warrants to Purchase Common Stock reported herein were acquired solely for investment purposes. The Reporting Persons do not have any present plans or proposals that relate to or would result in any change in the business, policies, management, structure or capitalization of the Issuer.

The Reporting Persons will continue to evaluate the business and prospects of the Issuer, and its present and future interest in, and intentions with respect to, the Issuer, and in connection therewith expects from time to time to consult with management and other stockholders of the Issuer. The Reporting Persons reserve the right to formulate plans and/or make proposals, and take such actions with respect to their investment in the Issuer, including subject to applicable law, (i) to hold its shares as a passive investor or as an active investor (whether or not as a member of a "group" with other beneficial owners of Shares or otherwise), (ii) to acquire beneficial ownership of additional shares in the open market, in privately negotiated transactions or otherwise, (iii) to dispose of all or part of its holdings of the shares, (iv) to take other actions which could involve one or more of the types of transactions or have one or more of the results described in Item 4 of this Amendment No. 1 to Schedule 13D, or (v) to change its intention with respect to any or all of the matters referred to in this Item 4.

Other than as described above and as set forth in the Series D Transaction Documents and the Series E Transaction Documents and the related amendment agreements executed in connection with certain amendments to the Series D and Series E preferred stock, the Reporting Persons do not have any plans or proposals which would result in any of the following:

- (a) The acquisition by any person of additional securities of the Issuer, or the disposition of securities of the Issuer;
- (b) An extraordinary corporate transaction, such as a merger, reorganization or liquidation, involving the Issuer or any of its subsidiaries;
- (c) A sale or transfer of a material amount of assets of the Issuer or any of its subsidiaries;
- (d) Any change in the present Board or management of the Issuer, including any plans or proposals to change the number or term of directors or to fill any existing vacancies on the Board;
- (e) Any material change in the present capitalization or dividend policy of the Issuer;
- (f) Any other material change in the Issuer's business or corporate structure;
- (g) Changes in the Issuer's charter, bylaws or instruments corresponding thereto or other actions that may impede the acquisition of control of the Issuer by any person;
- (h) Causing a class of securities of the Issuer to be delisted from a national securities exchange or to cease to be authorized to be quoted in an inter-dealer quotation system of a registered national securities association;
- (i) A class of equity securities of the Issuer becoming eligible for termination of registration pursuant to Section 12(g)(4) of the Securities Exchange Act of 1934, as amended; or
- (j) Any action similar to any of those enumerated above.

ITEM 5. Interest in Securities of the Issuer.

(a) and (b) Pillar directly holds (i) 2,090,125 shares of Common Stock and (ii) Series D Pillar Warrants representing 2,810,650 shares of Common Stock. Pillar II directly holds (i) 6,135,132 shares of Common Stock and (ii) Series E Pillar Warrants representing 5,034,061 shares of Common Stock. Pillar III directly holds 3,871,839 shares of Common Stock. Pillar IV directly holds 200,000 shares of Common Stock and Pillar V directly holds 875,000 shares of Common Stock. Pillar GP, as the general partner of Pillar, Pillar II, Pillar III, Pillar IV and Pillar V has investment discretion over the shares of Pillar III Common Stock, Series D Pillar Warrants, Series E Pillar Warrants, Pillar III Offering Warrants and Pillar IV and Pillar V Common Stock directly held by Pillar, Pillar II, Pillar III, Pillar IV and Pillar V, respectively. Pursuant to the Advisory Agreement, Pillar GP also has investment discretion over 6,657,953 shares of Common Stock, Series E Pillar Warrants representing 2,218,020 shares of Common Stock and Warrants representing 1,900,000 shares of Common Stock that are held directly by Besancon (the "Besancon Shares").

Pursuant to Rule 13d-3 of the Securities Exchange Act of 1934 (the "Exchange Act"), the number of shares of Common Stock beneficially owned by the Reporting Persons, and the applicable percentage, represent (prior to the application of the Conversion Cap and the Voting Cap) (A) shares of Common Stock into which Pillar's shares of Series D Preferred Stock are convertible assuming that only Pillar converted its shares of Series D Preferred Stock and that no other holder of Series D Preferred Stock converted any shares of Series D Preferred Stock; (B) shares of Common Stock issued upon Pillar's exercise of its Series D Pillar Warrants, assuming that no other holder of Series D Pillar Warrants exercisable for shares of Common Stock exercised any such Series D Pillar Warrants; (C) shares of Common Stock into which Pillar II's shares of Series E Preferred Stock are convertible assuming that only Pillar II converted its shares of Series E Preferred Stock and that no other holder of Series E Preferred Stock converted any shares of Series E Preferred Stock; (D) shares of Common Stock issued upon Pillar II's exercise of its Series E Pillar Warrants, assuming that no other holder of Series E Pillar Warrants exercisable for shares of Common Stock exercised any such Series E Pillar Warrants; (E) shares of Common Stock into which Besancon's shares of Series E Preferred Stock are convertible assuming that only Besancon converted its shares of Series E Preferred Stock and that no other holder of Series E Preferred Stock converted any shares of Series E Preferred Stock; (F) shares of Common Stock issued upon Besancon's exercise of its Series E Pillar Warrants, assuming that no other holder of Series E Pillar Warrants exercisable for shares of Common Stock exercised any such Series E Pillar Warrants; (G) shares of Common Stock issued upon Pillar III's exercise of its Pillar III Offering Warrants, assuming that no other holder of Pillar III Offering Warrants exercisable for shares of Common Stock exercised any such Pillar III Offering Warrants; and (H) shares of Common Stock issued upon Mr. El Zein's exercise of his vested options, assuming that no other holder of options exercisable for shares of Common Stock exercises any such options. As a result of the application of the Conversion Cap and the Voting Cap, each of Pillar, Pillar II, Pillar III, Pillar IV, Pillar V and Pillar GP is reporting beneficial ownership 29,253,114 shares of Common Stock, which represents 19.99% of the 146,338,744 shares of Common Stock outstanding as of the Closing Date. Pillar, Pillar II, Pillar III, Pillar IV, Pillar V and Pillar GP expressly disclaim beneficial ownership of the shares of Common Stock held directly by Mr. El Zein. Pillar, Pillar II, Pillar III, Pillar IV and Pillar V expressly disclaim beneficial ownership of any of the Besancon Shares.

Mr. El Zein, as director and controlling stockholder of Pillar GP, may be deemed to have sole power to direct the voting and disposition of the shares of Common Stock directly held by Pillar, Pillar II, Pillar III, Pillar IV and Pillar V and all shares that may be deemed to be beneficially owned by Pillar GP (which include the shares held directly by Pillar, Pillar II, Pillar III, Pillar IV and Pillar V, and the Besancon Shares, with respect to which Pillar GP has investment discretion). Mr. El Zein also directly holds 516,892 shares of Common Stock and options to buy 198,917 shares of Common Stock, which are exercisable within sixty days of the Closing Date. As a result of the application of the Conversion Cap and the Voting Cap, Mr. El Zein is reporting beneficial ownership 29,253,114 shares of Common Stock, which represents 19.99% of the 146,338,744 shares of Common Stock outstanding as of the Closing Date. Mr. El Zein expressly disclaims beneficial ownership of the shares of Common Stock held directly by Pillar, Pillar II, Pillar III, Pillar IV and Pillar V and indirectly by Pillar GP (including the Besancon Shares).

(c) Except as described in this Amendment No. 4 to Schedule 13D, none of the Reporting Persons has effected any transaction in the securities of the Issuer in the last 60 days.

(d) No persons other than the Reporting Persons and their investment clients have the right to participate in the receipt of dividends from, or the proceeds from the sale of, the shares of Common Stock covered hereby.

(e) Not Applicable.

ITEM 6. Contracts, Arrangements, Understandings or Relationships With Respect to Securities of the Issuer.

The information set forth in Item 4 hereof is hereby incorporated by reference into this Item 6. Except as referenced above or described in Item 4 hereof, there are no contracts, arrangements, understandings or relationships among the Reporting Persons or between such Reporting Persons and any other person with respect to any securities of the Company.

ITEM 7. Materials to be Filed as Exhibits.

- Exhibit 1: Joint Filing Agreement as required by Rule 13d-1(k)(1) under the Securities Exchange Act of 1934, as amended.
- Exhibit 2: Convertible Preferred Stock and Warrant Purchase Agreement, dated November 4, 2011, between the Company and Pillar (*incorporated by reference to the Issuer's Current Report on Form 8-K as filed with the Securities and Exchange Commission on November 10, 2011*)
- Exhibit 3: Registration Rights Agreement, between the Company and Pillar, dated November 4, 2011 (*incorporated by reference to the Issuer's Current Report on Form 8-K as filed with the Securities and Exchange Commission on November 10, 2011*)
- Exhibit 4: Certificate of Designations, Preferences and Rights of Series D Preferred Stock of the Company (*incorporated by reference to the Issuer's Current Report on Form 8-K as filed with the Securities and Exchange Commission on November 10, 2011*)
- Exhibit 5: Form of Warrant issued to Purchaser pursuant to Convertible Preferred Stock and Warrant Purchase Agreement, dated November 4, 2011, among the Company and the Pillar (*incorporated by reference to the Issuer's Current Report on Form 8-K as filed with the Securities and Exchange Commission on November 10, 2011*)
- Exhibit 6: Convertible Preferred Stock and Warrant Purchase Agreement, dated November 9, 2012, between the Company and Pillar II (*incorporated by reference to the Issuer's Current Report on Form 8-K as filed with the Securities and Exchange Commission on November 15, 2012*)
- Exhibit 7: Registration Rights Agreement, between the Company and Pillar II, dated November 9, 2012 (*incorporated by reference to the Issuer's Current Report on Form 8-K as filed with the Securities and Exchange Commission on November 15, 2012*)
- Exhibit 8: Certificate of Designations, Preferences and Rights of Series E Preferred Stock of the Company (*incorporated by reference to the Issuer's Current Report on Form 8-K as filed with the Securities and Exchange Commission on November 15, 2012*)
- Exhibit 9: Form of Warrant issued to Purchaser pursuant to Convertible Preferred Stock and Warrant Purchase Agreement, dated November 9, 2012, among the Company and the Pillar (*incorporated by reference to the Issuer's Current Report on Form 8-K as filed with the Securities and Exchange Commission on November 15, 2012*)
- Exhibit 10: Amendment No. 1 to Convertible Preferred Stock and Warrant Purchase Agreement, dated November 9, 2012, between the Company and Pillar (*incorporated by reference to the Issuer's Current Report on Form 8-K as filed with the Securities and Exchange Commission on November 15, 2012*)
- Exhibit 11: Amendment No. 1 to Common Stock Purchase Warrant, dated November 9, 2012, between the Company and Pillar (*incorporated by reference to the Issuer's Current Report on Form 8-K as filed with the Securities and Exchange Commission on November 15, 2012*)
- Exhibit 12: Form of Warrant (*incorporated by reference to Exhibit 4.3 to the Issuer's Registration Statement on Form S-1/A as filed with the Securities and Exchange Commission on May 1, 2013*)
- Exhibit 13: Form of Pre-Funded Warrant (*incorporated by reference to Exhibit 4.4 to the Issuer's Registration Statement on Form S-1/A as filed with the Securities and Exchange Commission on May 1, 2013*)
- Exhibit 14: Agreement, dated as of April 22, 2013, by and among the Company, Pillar Pharmaceuticals I, L.P. and Pillar Pharmaceuticals II, L.P. (*incorporated by reference to Exhibit 10.1 the Issuer's Current Report on Form 8-K as filed with the Securities and Exchange Commission on April 23, 2013*)
- Exhibit 15: Agreement, dated April 30, 2013, by and among the Company, Pillar Pharmaceuticals I, L.P., Pillar Pharmaceuticals II, L.P. and Participations Besancon (*incorporated by reference to Exhibit 10.50 to the Issuer's Registration Statement on Form S-1/A as filed with the Securities and Exchange Commission on May 1, 2013*)

SIGNATURE

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

EXECUTED as a sealed instrument this 14th day of October, 2016.

PILLAR PHARMACEUTICALS I, L.P.

By: Pillar Invest Corporation, its general partner

By: /s/ Youssef El Zein
Name: Youssef El Zein
Title: Director

PILLAR PHARMACEUTICALS II, L.P.

By: Pillar Invest Corporation, its general partner

By: /s/ Youssef El Zein
Name: Youssef El Zein
Title: Director

PILLAR PHARMACEUTICALS III, L.P.

By: Pillar Invest Corporation, its general partner

By: /s/ Youssef El Zein
Name: Youssef El Zein
Title: Director

PILLAR PHARMACEUTICALS IV, L.P.

By: Pillar Invest Corporation, its general partner

By: /s/ Youssef El Zein
Name: Youssef El Zein
Title: Director

PILLAR PHARMACEUTICALS V, L.P.

By: Pillar Invest Corporation, its general partner

By: /s/ Youssef El Zein
Name: Youssef El Zein
Title: Director

PILLAR INVEST CORPORATION

By: /s/ Youssef El Zein
Name: Youssef El Zein
Title: Director

/s/ Youssef El Zein
Youssef El Zein

EXHIBIT INDEX

- Exhibit 1: Joint Filing Agreement as required by Rule 13d-1(k)(1) under the Securities Exchange Act of 1934, as amended.
- Exhibit 2: Convertible Preferred Stock and Warrant Purchase Agreement, dated November 4, 2011, between the Company and Pillar (*incorporated by reference to the Issuer's Current Report on Form 8-K as filed with the Securities and Exchange Commission on November 10, 2011*)
- Exhibit 3: Registration Rights Agreement, between the Company and Pillar, dated November 4, 2011 (*incorporated by reference to the Issuer's Current Report on Form 8-K as filed with the Securities and Exchange Commission on November 10, 2011*)
- Exhibit 4: Certificate of Designations, Preferences and Rights of Series D Preferred Stock of the Company (*incorporated by reference to the Issuer's Current Report on Form 8-K as filed with the Securities and Exchange Commission on November 10, 2011*)
- Exhibit 5: Form of Warrant issued to Purchaser pursuant to Convertible Preferred Stock and Warrant Purchase Agreement, dated November 4, 2011, among the Company and the Pillar (*incorporated by reference to the Issuer's Current Report on Form 8-K as filed with the Securities and Exchange Commission on November 10, 2011*)
- Exhibit 6: Convertible Preferred Stock and Warrant Purchase Agreement, dated November 9, 2012, between the Company and Pillar II (*incorporated by reference to the Issuer's Current Report on Form 8-K as filed with the Securities and Exchange Commission on November 15, 2012*)
- Exhibit 7: Registration Rights Agreement, between the Company and Pillar II, dated November 9, 2012 (*incorporated by reference to the Issuer's Current Report on Form 8-K as filed with the Securities and Exchange Commission on November 15, 2012*)
- Exhibit 8: Certificate of Designations, Preferences and Rights of Series E Preferred Stock of the Company (*incorporated by reference to the Issuer's Current Report on Form 8-K as filed with the Securities and Exchange Commission on November 15, 2012*)
- Exhibit 9: Form of Warrant issued to Purchaser pursuant to Convertible Preferred Stock and Warrant Purchase Agreement, dated November 9, 2012, among the Company and the Pillar (*incorporated by reference to the Issuer's Current Report on Form 8-K as filed with the Securities and Exchange Commission on November 15, 2012*)
- Exhibit 10: Amendment No. 1 to Convertible Preferred Stock and Warrant Purchase Agreement, dated November 9, 2012, between the Company and Pillar (*incorporated by reference to the Issuer's Current Report on Form 8-K as filed with the Securities and Exchange Commission on November 15, 2012*)
- Exhibit 11: Amendment No. 1 to Common Stock Purchase Warrant, dated November 9, 2012, between the Company and Pillar (*incorporated by reference to the Issuer's Current Report on Form 8-K as filed with the Securities and Exchange Commission on November 15, 2012*)
- Exhibit 12: Form of Warrant (*incorporated by reference to Exhibit 4.3 to the Issuer's Registration Statement on Form S-1/A as filed with the Securities and Exchange Commission on May 1, 2013*)
- Exhibit 13: Form of Pre-Funded Warrant (*incorporated by reference to Exhibit 4.4 to the Issuer's Registration Statement on Form S-1/A as filed with the Securities and Exchange Commission on May 1, 2013*)
- Exhibit 14: Agreement, dated as of April 22, 2013, by and among the Company, Pillar Pharmaceuticals I, L.P. and Pillar Pharmaceuticals II, L.P. (*incorporated by reference to Exhibit 10.1 the Issuer's Current Report on Form 8-K as filed with the Securities and Exchange Commission on April 23, 2013*)
- Exhibit 15: Agreement, dated April 30, 2013, by and among the Company, Pillar Pharmaceuticals I, L.P., Pillar Pharmaceuticals II, L.P. and Participations Besancon (*incorporated by reference to Exhibit 10.50 to the Issuer's Registration Statement on Form S-1/A as filed with the Securities and Exchange Commission on May 1, 2013*)

JOINT FILING AGREEMENT PURSUANT TO RULE 13d-1(k)(1)

The undersigned acknowledge and agree that the foregoing statement on Schedule 13D is filed on behalf of each of the undersigned and that all subsequent amendments to this statement on Schedule 13D shall be filed on behalf of each of the undersigned without the necessity of filing additional joint filing statements. The undersigned acknowledge that each shall be responsible for the timely filing of such amendments, and for the completeness and accuracy of the information concerning him, her or it contained herein, but shall not be responsible for the completeness and accuracy of the information concerning the other entities or persons, except to the extent that he, she or it knows or has reason to believe that such information is inaccurate.

Date: October 14, 2016

PILLAR PHARMACEUTICALS I, L.P.

By: Pillar Invest Corporation, its general partner

By: /s/ Youssef El Zein
Name: Youssef El Zein
Title: Director

PILLAR PHARMACEUTICALS II, L.P.

By: Pillar Invest Corporation, its general partner

By: /s/ Youssef El Zein
Name: Youssef El Zein
Title: Director

PILLAR PHARMACEUTICALS III, L.P.

By: Pillar Invest Corporation, its general partner

By: /s/ Youssef El Zein
Name: Youssef El Zein
Title: Director

PILLAR PHARMACEUTICALS IV, L.P.

By: Pillar Invest Corporation, its general partner

By: /s/ Youssef El Zein
Name: Youssef El Zein
Title: Director

PILLAR PHARMACEUTICALS V, L.P.

By: Pillar Invest Corporation, its general partner

By: /s/ Youssef El Zein
Name: Youssef El Zein
Title: Director

PILLAR INVEST CORPORATION

By: /s/ Youssef El Zein

Name: Youssef El Zein

Title: Director

/s/ Youssef El Zein

Youssef El Zein