

(Telephone number, including area code, of agent
for service)

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer" and "small reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer Accelerated filer Non-accelerated filer* Smaller reporting company
*(Do not check if a smaller reporting company)

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Amount to be registered ⁽¹⁾	Proposed maximum offering price per share	Proposed maximum aggregate offering price	Amount of registration fee
Common Stock underlying 2006 Equity Incentive Plan (the “ <i>2006 Plan</i> ”) reserved for future issuance	5,169,782	\$0.635 ⁽²⁾	\$3,282,812 ⁽²⁾	\$381.46 ⁽²⁾
Total	5,169,782			\$381.46

Represents 5,169,782 additional shares of common stock available for issuance under the 2006 Equity Incentive (1)Plan. This amount represents the shares by which the 2006 Plan automatically increased on July 1, 2013, July 1, 2014 and July 1, 2015 pursuant to the Evergreen Provision (as defined in the “Explanatory Note”).

Calculated in accordance with Rule 457(h) and (c) under the Securities Act of 1933, as amended, solely for the (2)purpose of calculating the registration fee, based on the average of the high and low price per share prices of the Company’s Common Stock on September 14, 2015, as reported by the NASDAQ Capital Market.

EXPLANATORY NOTE

Pursuant to General Instruction E to Form S-8 under the Securities Act of 1933 (the “*Securities Act*”), this Registration Statement is filed by Cesca Therapeutics Inc. (the “*Registrant*”) for the purpose of registering additional shares of Common Stock under the Plan. This Registration Statement registers 5,169,782 additional shares of Common Stock available for issuance under the 2006 Plan. Under the 2006 Equity Incentive Plan (the “2006 Plan”), the number of shares of Common Stock equal to 6% of the number of outstanding shares of the Company, are authorized to be issued. The number of shares available to grant for awards adjusts at the beginning of each fiscal year so that the total number of shares under the 2006 Plan equals six percent (6%) of the number of outstanding shares of the Company (the “*Evergreen Provision*”).

The shares of Common Stock registered pursuant to this Registration Statement for the 2006 Plan are of the same class of securities as the shares of Common Stock registered for issuance under the 2006 Plan pursuant to the currently effective Registration Statement on Form S-8 (Registration No. 333-140668) filed on February 13, 2007 (the “*Original Registration Statement*”) and supplemented by the Registration Statements on Form S-8 (Registration No. 333-171564) filed on January 6, 2011 and (Registration No. 333-187197) filed on March 12, 2013 (collectively with the Original Registration Statement, “*Prior Registration Statements*”). The contents of the Prior Registration Statements, including any amendments thereto or filings incorporated, therein, are incorporated herein by this reference. Any items in the Prior Registration Statements not expressly changed hereby shall be as set forth in the Prior Registration Statement.

PART I

INFORMATION REQUIRED IN SECTION 10(a) PROSPECTUS

Item 1. Plan Information.

Not filed as part of this Registration Statement pursuant to Note to Part I of Form S-8.

Item 2. Registrant Information and Employee Plan Annual Information.

Not filed as part of this Registration Statement pursuant to Note to Part I of Form S-8.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

Registrant hereby incorporates by reference into this Registration Statement the following documents and information previously filed with the Securities and Exchange Commission ("**Commission**"):

- (a) The Registrant's Annual Report on Form 10-K for the fiscal year ended June 30, 2015, filed with the Commission on September 17, 2015;
- (b) The Registrant's Current Reports on Form 8-K filed with the Commission on September 1, 2015 and September 15, 2015.

- (c) The description of Securities in Item 1 of the Registration Statement on Form 8A for registration of the Registrant's common stock pursuant to Section 12(g) of the Exchange Act; and

- All documents that we subsequently file under Sections 13(a), 13(c), 14 and 15(d) of the Securities Exchange Act of 1934, as amended ("*Exchange Act*") before we file a post-effective amendment which indicates that all securities offered have been sold or which deregisters all securities then remaining unsold, shall be deemed to be (d) incorporated by reference in this Registration Statement and to be a part hereof from the date of filing of such documents, except as to specific sections of such statements as set forth therein. Unless expressly incorporated into this Registration Statement, a report furnished on Form 8-K prior or subsequent to the date hereof, shall not be incorporated by reference into this Registration Statement

Any statement incorporated herein shall be deemed to be modified or superseded for the purposes of this Registration Statement to the extent that a statement contained herein or in any other subsequently filed document that is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Registration Statement.

Item 4. Description of Securities.

The Registrant's common stock to be offered under this registration statement is registered under Section 12 of the Exchange Act.

Item 5. Interests of Named Experts and Counsel.

None.

Item 6. Indemnification of Directors and Officers.

The Company is incorporated in Delaware. Under Section 145 of the General Corporation Law of the State of Delaware, a Delaware corporation has the power to indemnify its directors, officers, employees and agents from expenses (including attorney's fees), judgments, fines, and amounts paid in settlement actually and reasonably incurred in connection with a threatened, pending, or completed action, suit or proceeding, whether civil, criminal, administrative, or investigative, in which such person is involved by reason of the fact such person were or are directors, officers, employees or agents of the Company, provided that such person acted in good faith and in a manner that such person reasonably believed to be in the best interests of the corporation and, in the case of a criminal proceeding, such person had no reasonable cause to believe his or her conduct was unlawful. Such person may not be indemnified if the person has been adjudged liable to the corporation in the performance of such person's duties to the corporation, unless the Court of Chancery or the court in which such action or suit was brought determines that, in view of the circumstances of the case, such person is fairly and reasonably entitled to indemnity. To the extent that such person has been successful on the merits or otherwise in defense of any proceeding, the General Corporate Law of the State of Delaware provides that such person shall be indemnified against expenses (including attorney's fees) reasonably and actually incurred. The Certificate of Incorporation and the By-laws of the Company provide for indemnification of directors and officers to the fullest extent permitted by the General Corporation Law of the State of Delaware.

Section 102(b)(7) of the General Corporation Law of the State of Delaware provides that a certificate of incorporation may contain a provision eliminating the personal liability of a director to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director provided that such provision shall not eliminate or limit the liability of a director (i) for any breach of the director's duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) for unlawful payment of dividends or stock redemption, or (iv) for any transaction from which the director derived an improper personal benefit. The Company's Certificate of Incorporation contains such a provision.

Item 7. Exemption from Registration Claimed.

Not applicable.

Item 8. Exhibits.

<u>Exhibit Number</u>	<u>Description of Exhibit</u>
3.2.2	Restated Bylaws of Cesca Therapeutics Inc. ⁽¹⁾
3.3	Certificate of Amendment to the Amended and Restated Certificate of Incorporation of Cesca Therapeutics Inc. ⁽²⁾
10.6	Amended and Restated 2006 Equity Incentive Plan ⁽³⁾
5.1	Opinion of Weintraub Tobin Chediak Coleman Grodin
23.1	Consent of Weintraub Tobin Chediak Coleman Grodin (contained in Exhibit 5.1)
23.2	Consent of Marcum LLP, Independent Registered Public Accounting Firm
23.3	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm

(1) Incorporated by reference to Registrant's Current Report on Form 8-K filed with the SEC on October 30, 2014.

(2) Incorporated by reference to Registrant's Current Report on Form 8-K filed with the SEC on August 26, 2010.

(3) Incorporated by reference to Form 8-K dated April 25, 2014 filed with the SEC on May 1, 2014.

Item 9. Undertakings.

(a) The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933 (the "Securities Act");

To reflect in the prospectus any facts or events arising after the effective date of this Registration Statement (or (ii) the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in this Registration Statement; and

To include any material information with respect to the plan of distribution not previously disclosed in this Registration Statement or any material change to such information in this Registration Statement; provided, (iii) however, that paragraphs (a)(1)(i) and (a)(1)(ii) do not apply if the Registration Statement is on Form S-8 and the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed by the Registrant pursuant to Section 13 or 15(d) of the Exchange Act that are incorporated by reference in this Registration Statement.

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new Registration Statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(b) The undersigned Registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers, and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer, or controlling person of the Registrant in the successful defense of any action, suit, or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Rancho Cordova, State of California.

CESCA THERAPEUTICS INC,

a Delaware corporation

Dated: September 17, 2015 /s/ Robin C. Stracey

Robin C. Stracey

Chief Executive Officer

(Principal Executive Officer)

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Robin C. Stracey, his attorney-in-fact and agent, each with the power of substitution and resubstitution, for him or her and in his or her name, place or stead, in any and all capacities, to sign any amendments to this Registration Statement on Form S-8, and to file such amendments, together with exhibits and other documents in connection therewith, with the Securities and Exchange Commission, granting to each attorney-in-fact and agent, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully as he or she might or could do in person, and ratifying and confirming all that the attorneys-in-fact and agents, or his or her substitute or substitutes, may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

Date: September 17, 2015 By: /s/ Robin C. Stracey
Robin C. Stracey,

Chief Executive Officer

(Principal Executive Officer)

Date: September 17, 2015 By: /s/ Michael Bruch
Michael Bruch,

Interim Chief Financial Officer

(Principal Financial Officer and Principal Accounting Officer)

Date: September 17, 2015 By: /s/ Craig W. Moore
Craig W. Moore,

Chairman of the Board

Date: September 17, 2015 By: /s/ Kenneth L. Harris
Kenneth L. Harris,

President and Director

Date: September 17, 2015 By: /s/ Mahendra S. Rao
Mahendra S. Rao,

Director

Date: September 17, 2015 By: /s/ Denis M. Rhein
Denis M. Rhein,

Director