

(Full title of the plan)

Terrence W. Norchi

Chief Executive Officer

Arch Therapeutics, Inc.

20 William Street, Suite 270

Wellesley, Massachusetts 02481

(Name and address of agent for service)

(617) 475-5254

(Name, address and telephone number,
including area code, of agent for service)

Copy to:

John D. Hogoboom, Esq.

Lowenstein Sandler LLP

65 Livingston Avenue

Roseland, New Jersey 07068

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," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

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 Securities to be Registered	Amount to be Registered (1)	Proposed Maximum Offering Price Per Share (2)	Proposed Maximum Aggregate Offering Price (2)	Amount of Registration Fee
Common Stock, par value \$0.001 per share	2,883,059	\$ 0.1975	\$ 569,404	\$ 66.16

(1) Represents the number of additional shares of common stock, par value \$0.001 per share (“**Common Stock**”), of Arch Therapeutics, Inc. (the “**Company**” or “**Registrant**”), that may be granted under the Arch Therapeutics, Inc. 2013 Stock Incentive Plan (the “**Plan**”). In addition, pursuant to Rule 416(a) under the Securities Act of 1933, as amended (the “**Securities Act**”), this Registration Statement also registers such additional shares of Common Stock as may be offered or issued under the Plan to prevent dilution from stock splits, stock dividends, or similar transactions which results in an increase in the number of the outstanding shares of Common Stock or shares issuable pursuant to awards granted under the Plan.

(2) Estimated solely for purposes of calculating the amount of the registration fee, pursuant to Rules 457(c) and 457(h) of the Securities Act, the proposed maximum offering price per share and the proposed maximum aggregate offering price have been determined on the basis of the average of the high and low prices of the registrant’s common stock reported on the OTCQB tier of the OTC Marketplace on December 22, 2014.

EXPLANATORY NOTE

This registration statement on Form S-8 (this “**Registration Statement**”) is filed by Arch Therapeutics, Inc. (the “**Company**” or “**Registrant**”), to register an additional 2,883,059 shares of the Registrant’s common stock, par value \$0.001 per share (the “**Common Stock**”), which may be issued under the Arch Therapeutics, Inc. 2013 Stock Incentive Plan (the “**Plan**”).

Pursuant to the Registration Statement on Form S-8 (Registration No. 333-193516) filed by the Registrant on January 23, 2014 (the “**Prior Registration Statement**”), the Registrant previously registered an aggregate of 10,231,197 shares of Common Stock. The additional shares of Common Stock being registered by this Registration Statement are of the same class as those securities registered on the Prior Registration Statement and represent an increase in the total shares available for issuance under the Plan from 10,231,197 to 13,114,256. The contents of the Prior Registration Statement, together with all exhibits filed therewith or incorporated therein by reference to the extent not otherwise amended or superseded by the contents hereof or otherwise, are incorporated herein by reference in accordance with General Instruction E to Form S-8.

PART I

INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

The documents containing the information specified in Part I of this Registration Statement have been or will be sent or given to participating employees as specified in Rule 428(b)(1) of the Securities Act of 1933, as amended (the “**Securities Act**”), in accordance with the rules and regulations of the United States Securities and Exchange Commission (the “**SEC**”). Such documents are not being filed with the SEC either as part of this Registration Statement or as prospectuses or prospectus supplements pursuant to Rule 424 of the Securities Act. These documents and the documents incorporated by reference into this Registration Statement pursuant to Item 3 of Part II of this Registration Statement, taken together, constitute a prospectus that meets the requirements of Section 10(a) of the Securities Act.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Certain Documents by Reference.

The following documents, filed with the SEC by the Company, are incorporated by reference into this Registration Statement:

- (a) the Company's Annual Report on Form 10-K for the fiscal year ended September 30, 2014 filed with the SEC on December 12, 2014, pursuant to the Securities Exchange Act of 1934, as amended (the "**Exchange Act**");
- (b) the Company's Current Reports on Form 8-K, filed with the SEC on November 6, 2014, November 18, 2014, and December 2, 2014, respectively, pursuant to the Exchange Act; and
- (c) the description of the Company's Common Stock, which is contained in the Company's Registration Statement on Form 8-A, filed with the SEC on June 26, 2013, together with any amendment or report filed with the SEC for the purpose of updating this description.

In addition, all documents filed by the Company with the SEC pursuant to Sections 13(a), 13(c), 14, and 15(d) of the Exchange Act subsequent to the date of this Registration Statement and prior to the filing of a post-effective amendment to this Registration Statement which indicates that all the securities offered hereby have been sold or which deregisters all securities then remaining unsold shall be deemed to be incorporated by reference in this Registration Statement and to be a part hereof from the date of the filing of such documents with the SEC; *provided, however*, that documents or information deemed to have been furnished and not filed in accordance with the rules of the Commission shall not be deemed incorporated by reference in this registration statement, including any portion of any future annual or quarterly report to stockholders or document or current report furnished under current Items 2.02 or 7.01 of Form 8-K that is not deemed filed under such provisions. Any statement contained in a document incorporated by reference herein shall be deemed to be modified or superseded for purposes hereof to the extent that a statement contained herein (or in any other subsequently filed document which also is incorporated by reference herein) modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed to constitute a part hereof except as so modified or superseded.

Item 8. Exhibits.

The Exhibits to this Registration Statement are listed in the Index to Exhibits and are incorporated herein by reference.

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 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 Wellesley, State of Massachusetts, on December 23, 2014.

Arch Therapeutics, Inc.

/s/ Terrence W. Norchi
Dr. Terrence W. Norchi
President and Chief Executive Officer

SIGNATURES AND POWER OF ATTORNEY

We, the undersigned officers and directors of Arch Therapeutics, Inc., hereby severally constitute and appoint Terrence W. Norchi our true and lawful attorney-in-fact with full power of substitution, to sign for us and in our names in the capacities indicated below the Registration Statement and any and all pre-effective and post-effective amendments to the Registration Statement and generally to do all such things in our name and behalf in our capacities as officers and directors to enable the Registrant to comply with the provisions of the Securities Act, and all requirements of the SEC, hereby ratifying and confirming our signatures as they may be signed by our said attorney-in-fact to said Registration Statement and any and all amendments thereto.

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

Signature	Title	Date
/s/ Terrence W. Norchi Dr. Terrence W. Norchi	Chairman, Chief Executive Officer, and Director (Principal Executive Officer)	December 23, 2014
/s/ Richard E. Davis Richard E. Davis	Chief Financial Officer (Principal Financial and Accounting Officer)	December 23, 2014
/s/ Avtar Dhillon Dr. Avtar Dhillon	Director	December 23, 2014

/s/ Arthur Rosenthal
Dr. Arthur Rosenthal

Director

December 23, 2014

INDEX TO EXHIBITS

Exhibit No. Description of Exhibit

- 5.1 Opinion of McDonald Carano Wilson LLP.
- 23.1 Consent of McDonald Carano Wilson LLP (included in Exhibit 5.1 hereto).
- 23.2 Consent of Moody, Famiglietti & Andronico, LLP.
- 24.1 Power of Attorney (included on the signature page of this Registration Statement).