

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

FORM S-8

REGISTRATION STATEMENT
UNDER THE SECURITIES ACT OF 1933

ACCESS PHARMACEUTICALS, INC.

(Exact Name of Registrant as Specified in Its Charter)

DELAWARE

(State or Other Jurisdiction of Incorporation or Organization)

83-0221517

(I.R.S. Employer Identification No.)

2600 Stemmons Freeway Suite 176, Dallas, TX

75207

(Address of Principal Executive Offices)

(Zip Code)

ACCESS PHARMACEUTICALS, INC. 2005 EQUITY INCENTIVE PLAN

(Full Title of the Plan)

Stephen B. Thompson
Chief Financial Officer
Access Pharmaceuticals, Inc.
2600 Stemmons Freeway, Suite 176
Dallas, TX 75207

with copies to:

John J. Concannon III, Esq.
Bingham McCutchen LLP
One Federal Street
Boston, MA 02110

(Name and address of agent for service)

(214) 905-5100

(617) 951-8000

(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 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
(Do not check if a smaller
reporting company)

Smaller reporting company

CALCULATION OF REGISTRATION FEE

Title of Securities to be Registered	Amount to be Registered (1)	Proposed Maximum Offering Price Per Share	Proposed Maximum Aggregate Offering Price (2)	Amount of Registration Fee
Common Stock, par value \$0.01 per share	1,850,000	\$1.95 (1)	\$3,607,500	\$257.21

(1) In addition, pursuant to Rule 416(c) under the Securities Act of 1933, as amended, this Registration Statement also covers an indeterminate number of additional shares of common stock that may be offered or issued in the event of a stock dividend, reverse stock split, split-up, recapitalization, forfeiture of stock, or other similar event.

(2) Estimated solely for purposes of computing the registration fee pursuant to Rule 457(h) under the Securities Act of 1933, as amended, based on the average of the high and low prices of the Common Stock, \$0.01 par value per share, or the Common Stock, of Access Pharmaceuticals, Inc., or the Company, reported on the Over the Counter Bulletin Board on August 25, 2010. It is not known how many of these shares will be purchased or at what price.

PART I

INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

Item 1. *Plan Information.* *

Item 2. *Registrant Information and Employee Plan Annual Information.* *

* Information required by Part I to be contained in the Section 10(a) Prospectus is omitted from this Registration Statement in accordance with Rule 428 under the Securities Act of 1933, as amended (the "Securities Act"), and in accordance with the Introductory Note to Part I of Form S-8.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. *Incorporation of Documents by Reference.*

Access Pharmaceuticals, Inc. (or the Company) incorporates by reference the documents listed below and any future filings the Company will make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"):

- Annual Report on Form 10-K for the year ended December 31, 2009 (filed on March 23, 2010);
- Quarterly Reports on Form 10-Q for the quarters ended March 31, 2010 (filed on May 17, 2010) and June 30, 2010 (filed on August 16, 2010);
- Current Reports on Form 8-K filed on May 28, 2010;
- Proxy Statement on Schedule 14A relating to the Company's 2010 Annual Meeting of Shareholders (filed on April 16, 2010); and
- the description of the Company's common stock, par value \$0.01 per share, contained in the Company's Registration Statement on Form S-1 (filed with the SEC under Section 12 of the Exchange Act on March 11, 2008).

You may request a copy of these filings at no cost (other than exhibits unless those exhibits are specifically incorporated by reference herein) by writing or telephoning us at the following address:

Access Pharmaceuticals, Inc.
Attn: Investor Relations
2600 Stemmon Freeway, Suite 176
Dallas, Texas 75207
(214) 905-5100

Item 5. *Interests of Named Experts and Counsel.*

The validity of the securities registered hereby is being passed upon for us by Bingham McCutchen LLP. One or more partners or other employees of Bingham McCutchen LLP may beneficially own shares of our common stock.

Item 6. *Indemnification of Directors and Officers.*

Section 145 of the Delaware General Corporation Law (the "DGCL") grants each corporation organized thereunder the power to indemnify any person who is or was a director, officer, employee or agent of a corporation or enterprise, against expenses, including attorneys' fees, judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, other than an action by or in the right of the corporation, by reason of being or having been in any such capacity, if such person acted in good faith in a manner reasonably believed to be in, or not opposed to, the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful. Section 145(g) of the DGCL further authorizes a corporation to purchase and maintain insurance on behalf of any indemnified person against any liability asserted against and incurred by such person in any indemnified capacity, or arising out of his or her status as such, regardless of whether the corporation would otherwise have the power to indemnify such person under the DGCL.

Section 102(b)(7) of the DGCL enables a corporation in its certificate of incorporation or an amendment thereto to eliminate or limit the personal liability of a director to the corporation or its stockholders of monetary damages for violations of the directors' fiduciary duty of care, except (1) for any breach of the director's duty of loyalty to the corporation or its stockholders, (2) for acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law, (3) pursuant to Section 174 of the DGCL (providing for liability of directors for unlawful payment of dividends or unlawful stock purchases or redemptions) or (4) for any transaction from which a director derived an improper personal benefit.

In accordance with the DGCL, Article X of the Registrant's Certificate of Incorporation provides that, to the fullest extent permitted by the DGCL as it may be amended, no director shall be personally liable to the Registrant or its stockholders for monetary damages for breach of fiduciary duty as a director. Article X of the Registrant's Certificate of Incorporation further provides that the Registrant will indemnify, defend and hold harmless directors, officers, employees and agents or the Registrant of the fullest extent currently permitted under the DGCL.

The Registrant has entered into indemnification agreements with certain of its directors and executive officers. These agreements provide rights of indemnification to the full extent allowed and provided for by Section 145 of the DGCL and the Certificate of Incorporation and Bylaws of the Company.

Item 8. Exhibits.

The following exhibits are filed as part of or incorporated by reference into this Registration Statement:

<u>Exhibit Number</u>	<u>Description of Document</u>
4.1	* Access Pharmaceuticals, Inc. 2005 Equity Incentive Plan.
4.2	** Amendment to Access Pharmaceuticals, Inc. 2005 Equity Incentive Plan.
5.1	** Opinion of Bingham McCutchen LLP regarding the validity of the securities offered hereby.
23.1	** Consent of Independent Registered Public Accounting Firm—Whitley Penn LLP.
23.2	** Consent of Bingham McCutchen LLP (included in Exhibit 5.1).
24	** Power of Attorney (included on the signature page of this Registration Statement).

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- * Filed with the SEC on April 18, 2005 as Exhibit 1 to Proxy Statement filed pursuant to Rule 14a-6 of the Exchange Act, File No. 001-15771, and incorporated herein by reference.
 - ** Filed herewith.

Item 9. Undertakings.

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;
 - ii. To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement.
 - iii. To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

Provided however, that: Paragraphs (a)(1)(i) and (a)(1)(ii) of this section 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 reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement; and

2. That, for the purpose of determining any liability under the Securities Act of 1933, 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.
4. That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities: The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:
 - i. Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
 - ii. Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
 - iii. The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

iv. Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

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 or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) 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.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 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 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 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 Dallas, Texas, on the 26th day of August, 2010.

ACCESS PHARMACEUTICALS, INC.

By: /s/ Jeffrey B. Davis
Jeffrey B. Davis
Chief Executive Officer

By: /s/ Stephen B. Thompson
Stephen B. Thompson
Vice President, Chief Financial Officer and Treasurer

POWER OF ATTORNEY

Each person whose signature appears below hereby appoints Jeffrey B. Davis and Stephen B. Thompson, and each of them severally as such person's true and lawful attorney-in-fact with the authority to execute in the name of each such person, and to file with the SEC, together with any exhibits thereto and other documents therewith, any and all amendments (including, without limitation, post-effective amendments) to this Registration Statement on Form S-8 necessary or advisable to enable the Registrant to comply with the Securities Act of 1933, as amended, and any rules, regulations, and requirements of the SEC in respect thereof, which amendments may make such other changes in the Registration Statement as the aforesaid attorney-in-fact executing the same deems appropriate.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed by the following persons in the capacities indicated as of the dates set forth below.

Signature	Title	Date
<u>/s/ Jeffrey B. Davis</u> Jeffrey B. Davis	Chief Executive Officer, and Director (Principal Executive Officer)	August 26, 2010
<u>/s/ Stephen B. Thompson</u> Stephen B. Thompson	Vice President, Chief Financial Officer, Treasurer and Secretary (Principal Financial and Accounting Officer)	August 26, 2010
<u>/s/ Mark J. Ahn</u> Mark J. Ahn	Director	August 26, 2010
<u>/s/ Mark J. Alvino</u> Mark J. Alvino	Director	August 26, 2010
<u>/s/ Estaban Cvitkovic</u> Estaban Cvitkovic	Director	August 26, 2010
<u>/s/ Stephen B. Howell</u> Stephen B. Howell	Director	August 26, 2010
<u>/s/ Steven H. Rouhandeh</u> Steven H. Rouhandeh	Director	August 26, 2010

EXHIBIT INDEX

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 - ** Filed herewith.

ACCESS PHARMACEUTICALS, INC.

Amendment to Access Pharmaceuticals, Inc. 2005 Equity Incentive Plan

The Board of Directors of Access Pharmaceuticals, Inc. (the "Company"), pursuant to authority reserved in Section 15 of the 2005 Equity Incentive Plan of the Company (the "2005 Plan"), authorized an amendment to the 2005 Plan as follows, which amendment was approved by the stockholders of the Company on May 26, 2010:

Sections 4 of the 2005 Plan are deleted in their entirety and replaced with the following:

4. Stock Subject to the Plan. At no time shall the number of shares of Stock issued pursuant to or subject to outstanding Awards granted under the Plan (including pursuant to Incentive Options), nor the number of shares of Stock issued pursuant to Incentive Options, exceed 5,000,000¹ shares of Stock; subject, however, to the provisions of Section 8 of the Plan. For purposes of applying the foregoing limitation, (a) if any Option or Stock Appreciation Right expires, terminates, or is cancelled for any reason without having been exercised in full, or if any other Award is forfeited by the recipient, the shares not purchased by the Optionee or which are forfeited by the recipient shall again be available for Awards to be granted under the Plan and (b) if any Option is exercised by delivering previously owned shares in payment of the exercise price therefor, only the net number of shares, that is, the number of shares issued minus the number received by the Company in payment of the exercise price, shall be considered to have been issued pursuant to an Award granted under the Plan. In addition, settlement of any Award shall not count against the foregoing limitations except to the extent settled in the form of Stock. Shares of Stock issued pursuant to the Plan may be either authorized but unissued shares or shares held by the Company in its treasury.

IN WITNESS WHEREOF, the Company has adopted this Amendment, effective as of the 26th day of May, 2010.

ACCESS PHARMACEUTICALS

By: /s/ Stephen B. Thompson
Stephen B. Thompson
Chief Financial Officer

¹ Such number equates to amounts approved by stockholders on: May 26, 2010 – 5,000,000 shares of Stock; May 21, 2008 – 3,150,000 shares of Stock; on May 17, 2007 – 1,675,000 shares of Stock; and May 19, 2006 - 1,000,000 shares of Stock (originally 5,000,000 shares of Stock adjusted as a result of the one-for-five reverse stock split effected on June 5, 2006).

BINGHAM MCCUTCHEN LLP
One Federal Street
Boston, Massachusetts 02110

August 26, 2010

Access Pharmaceuticals, Inc.
2600 Stemmons Freeway, Suite 176
Dallas, TX 75207

Re: Registration Statement on Form S-8 Under the Securities Act of 1933, as amended

Dear Sir or Madam:

We have acted as counsel for Access Pharmaceuticals, Inc., a Delaware corporation (the "Company"), in connection with the Company's Registration Statement on Form S-8 to be filed with the Securities and Exchange Commission on August 26, 2010 (the "Registration Statement").

The Registration Statement covers the registration of an additional 1,850,000 shares of common stock, \$0.01 par value per share, of the Company (the "Shares"), which are to be issued by the Company upon the purchase of stock issued or to be issued pursuant to the Access Pharmaceuticals, Inc. 2005 Equity Incentive Plan (the "Plan").

We have reviewed the corporate proceedings of the Company with respect to the authorization of the Plan and the issuance of the Shares thereunder. We have also examined and relied upon originals or copies of such agreements, instruments, corporate records, certificates, and other documents as we have deemed necessary or appropriate as a basis for the opinions hereinafter expressed. In our examination, we have assumed the genuineness of all signatures, the conformity to the originals of all documents reviewed by us as copies, the authenticity and completeness of all original documents reviewed by us in original or copy form, and the legal competence of each individual executing any document. As to all matters of fact (including factual conclusions and characterizations and descriptions of purpose, intention or other state of mind) we have relied entirely upon certificates of officers of the Company, and have assumed, without independent inquiry, the accuracy of those certificates.

We further assume that all Shares will be issued in accordance with the terms of the Plan and that the purchase price of the Shares will be greater than or equal to the par value per share of the Shares.

This opinion is limited solely to the Delaware General Corporation Law, the applicable provisions of the Delaware Constitution and the reported judicial decisions interpreting those laws.

Based upon and subject to the foregoing, we are of the opinion that the Shares, when issued and delivered pursuant to the Plan and against the payment of the purchase price therefor, will be validly issued, fully paid, and non-assessable.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement.

Very truly yours,

/s/ Bingham McCutchen LLP

BINGHAM MCCUTCHEN LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We have issued our report dated March 22, 2010, accompanying the consolidated financial statements of Access Pharmaceuticals, Inc. included in the Annual Report on Form 10-K for the year ended December 31, 2009, which is incorporated by reference in this Registration Statement. We consent to the incorporation by reference in the Registration Statement of Access Pharmaceuticals, Inc. on Form S-8 of the aforementioned report.

/s/ Whitley Penn LLP

Dallas, Texas
August 26, 2010