

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

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SCHEDULE 13D

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INFORMATION STATEMENT PURSUANT TO RULES 13d-1 AND 13d-2  
UNDER THE SECURITIES EXCHANGE ACT OF 1934

(AMENDMENT NO. 2)\*

PIPEX PHARMACEUTICALS, INC.  
(NAME OF ISSUER)

Common Stock, \$.001 Par Value Per Share  
(TITLE OF CLASS OF SECURITIES)

724153 10 1  
(CUSIP NUMBER)

Hank Gracin, Esq.  
Lehman & Eilen LLP  
Mission Bay Office Plaza  
Suite 300  
20283 State Road 7  
Boca Raton, FL 33498  
(561) 237-0804  
(NAME, ADDRESS, TELEPHONE NUMBER OF PERSON AUTHORIZED  
TO RECEIVE NOTICES AND COMMUNICATION)

July 25, 2007  
(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 which is the subject of this Schedule 13D, and is filing this schedule because of §§ 240.13d-1(d), 240.13d-1(f) or 240.13d-1(g), check the following box: / /

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See §24013d-7 for other parties to whom copies are to be sent.

\* The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

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1. NAME OF REPORTING PERSON, I.R.S. IDENTIFICATION NO. OF ABOVE PERSON: Steve H. Kanzer
2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP\*:  
(a) / /  
(b) /X/
3. SEC USE ONLY
4. SOURCE OF FUNDS: PF
5. CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED  
PURSUANT TO ITEM 2(D) OR 2(E): / /
6. CITIZENSHIP OR PLACE OF ORGANIZATION: United States
7. SOLE VOTING POWER: 415,599 shares\*
8. SHARED VOTING POWER: 8,300,005 shares\*\*
9. SOLE DISPOSITIVE POWER: 415,599 shares\*
10. SHARED DISPOSITIVE POWER 8,300,005 shares\*\*
11. AGGREGATE AMOUNT BENEFICIALLY  
OWNED BY EACH REPORTING PERSON: 8,715,604 shares
12. CHECK BOX IF THE AGGREGATE AMOUNT  
IN ROW (11) EXCLUDES CERTAIN SHARES: / /
13. PERCENT OF CLASS REPRESENTED BY  
AMOUNT IN ROW (11): 47.53%
14. TYPE OF REPORTING PERSON: IN

\* Consists of 325,246 shares held directly in Mr. Kanzer's name and 90,353, shares issuable upon presently exercisable stock options held directly in Mr. Kanzer's name. Does not include 180,705 shares issuable upon stock options held directly in Mr. Kanzer's name that are not presently exercisable.

\*\* Consists of 7,086,379 shares held in the name of Accredited Venture Capital, LLC and 1,213,626 shares issuable upon presently exercisable warrants held in the name of Accredited Venture Capital, LLC.

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1. NAME OF REPORTING PERSON, I.R.S. IDENTIFICATION NO. OF ABOVE PERSON: Accredited Venture Capital, LLC EIN 22-3821141
2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP\*:  
(a) / /  
(b) /X/
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): / /
6. CITIZENSHIP OR PLACE OF ORGANIZATION: Delaware
7. SOLE VOTING POWER: 0 shares
8. SHARED VOTING POWER: 8,300,005 shares\*
9. SOLE DISPOSITIVE POWER: 0 shares
10. SHARED DISPOSITIVE POWER 8,300,005 shares\*
11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON: 8,300,005 shares
12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES:\* / /
13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11): 45.49%
14. TYPE OF REPORTING PERSON\*: OO

\* Consists of 7,086,379 shares held in the name of Accredited Venture Capital, LLC and 1,213,626 shares issuable upon presently exercisable warrants held in the name of Accredited Venture Capital, LLC.

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1. NAME OF REPORTING PERSON, I.R.S. IDENTIFICATION NO. OF ABOVE PERSON: Pharmainvestors, LLC
2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP\*:  
(a) / /  
(b) /X/
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): / /
6. CITIZENSHIP OR PLACE OF ORGANIZATION: Delaware
7. SOLE VOTING POWER: 0 shares
8. SHARED VOTING POWER: 8,300,005 shares\*
9. SOLE DISPOSITIVE POWER: 0 shares
10. SHARED DISPOSITIVE POWER 8,300,005 shares\*
11. AGGREGATE AMOUNT BENEFICIALLY  
OWNED BY EACH REPORTING PERSON: 8,300,005 shares
12. CHECK BOX IF THE AGGREGATE AMOUNT  
IN ROW (11) EXCLUDES CERTAIN SHARES:\* / /
13. PERCENT OF CLASS REPRESENTED BY  
AMOUNT IN ROW (11): 45.49%
14. TYPE OF REPORTING PERSON\*: OO

\* Consists of 7,086,379 shares held in the name of Accredited Venture Capital, LLC and 1,213,626 shares issuable upon presently exercisable warrants held in the name of Accredited Venture Capital, LLC.

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Item 1. Security and Issuer.

This Statement on Schedule 13D relates to the common shares, \$.001 par value (the "Common Shares"), of Pipex Pharmaceuticals, Inc., a Delaware corporation, with principal executive offices located at 3930 Varsity Drive, Ann Arbor, MI 48108 (the "Issuer").

Item 2. Identity and Background.

(a) This Amendment to Schedule 13D is being filed on behalf of Accredited Venture Capital, LLC, a Delaware limited liability company, Pharmainvestors, LLC, a Delaware limited liability company and the Managing Member of Accredited Venture Capital, LLC, and Steve H. Kanzer, Managing Member of Pharmainvestors, LLC (together, the "Reporting Persons").

The Reporting Persons are filing this statement pursuant to Rule 13d-1(a) under the Securities Exchange Act of 1934. By their signatures on this Statement, the Reporting Persons agree that this Statement is filed on their behalf.

(b) The principal business of Accredited Venture Capital, LLC is making and managing investments in the biotechnology sector.

(c) The principal business of Pharmainvestors, LLC is making and managing investments in the biotechnology sector.

(d) Mr. Kanzer's present occupation is Chief Executive Officer of the Issuer. The principal business address of Mr. Kanzer is 3930 Varsity Drive, Ann Arbor MI 48108. Mr. Kanzer is a citizen of the United States of America.

(e) None of the persons referred to above has, during the last five years, been convicted in a criminal proceeding (excluding traffic violations).

(f) None of the persons referred to above has, during the last five years, been 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 or, prohibiting or mandating activities subject to, United States Federal or State securities laws or finding any violation with respect to such laws.

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

On October 31, 2006, Pipex Therapeutics, Inc., a Delaware corporation, merged with and into Pipex Therapeutics Acquisition Corp., a wholly owned subsidiary of the Issuer. At the effective time of the merger, every share of Pipex Therapeutics Inc.'s issued and outstanding common shares were cancelled and converted into one common share of the Issuer. As a result, Accredited Venture Capital, LLC acquired 7,086,379 of the Issuer's common shares. All of these shares were initially acquired from Pipex Therapeutics, Inc. in exchange for a \$1.1 million cash investment and additional cash investments totaling \$3,274,728 in the form of non-interest bearing loans made by Accredited Venture Capital LLC to Pipex Therapeutics, Inc. from 2002 through October 2006. On November 1, 2006, the effective time of the merger, these investments were converted into 7,086,379 shares of common stock, and non-callable ten year warrants to purchase 832,606 shares of common stock at an exercise price of \$2.22 per share, of the issuer. The number of shares and per share amounts presented in this Item 3 have been retroactively restated to reflect the Issuer's three for one reverse stock split on April 25, 2007.

Also, at the effective time of the merger, each option to purchase shares of Pipex Therapeutics, Inc.'s common shares was converted into the right to receive, upon exercise of such option, an equal number of shares of the Issuer's common shares. As a result, Mr. Kanzer's options to purchase 271,058 shares of Pipex Therapeutics, Inc.'s common shares, at an exercise price of \$2.01 per share, were converted into an equal number of options to purchase shares of the Issuer's common stock.

In October and November 2006, the Issuer completed a private placement. In connection with this private placement, Accredited Venture Capital, LLC received 373,369 warrants to acquire 373,369 shares of the Issuer's common stock at \$2.22 per share for placement agent services performed on behalf of the Issuer.

On January 7, 2007, Mr. Kanzer received 7,651 warrants to purchase 7,651 shares of the Issuer's common stock at an exercise price of \$3.30 in exchange for previously issued warrants to purchase common stock shares of Effective Pharmaceuticals, Inc. ("EPI") in connection with the Issuer's acquisition of EPI.

On February 21, 2007, Mr. Kanzer purchased 31,746 shares of the Issuer's common stock at a purchase price of \$3.15 per share in privately negotiated transactions with institutional investors for a total purchase price of \$100,000.

On February 27, 2007, Mr. Kanzer purchased 33,333 shares of the Issuer's common stock at a purchase price of \$3.75 per share in privately negotiated transaction with institutional investors for a total purchase price of \$125,000.

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On April 16, 2007, Mr. Kanzer purchased 53,667 shares of the Issuer's common stock in the public markets at a weighted average purchase price of \$5.81 per share for a total purchase price of \$311,940.

On April 17, 2007, Mr. Kanzer purchased 22,000 shares of the Issuer's common stock in the public markets at a weighted average purchase price of \$6.07 per share for a total purchase price of \$133,640.

On May 11, 2007, Mr. Kanzer purchased 26,500 shares of the Issuer's common stock in the public markets at a weighted average purchase price of \$5.30 per share for a total purchase price of \$140,450.

On July 16, 2007, Mr. Kanzer purchased 81,000 shares of the Issuer's common stock in the public markets at a weighted average purchase price of \$4.84 per share for a total purchase price of \$392,040.

On July 17, 2007, Mr. Kanzer purchased 25,000 shares of the Issuer's common stock in the public markets at a weighted average purchase price of \$5.25 per share for a total purchase price of \$131,250.

On July 23, 2007, Mr. Kanzer purchased 29,700 shares of the Issuer's common stock in the public markets at a weighted average purchase price of \$6.75 per share for a total purchase price of \$200,475.

On July 24, 2007, Mr. Kanzer purchased 8,000 shares of the Issuer's common stock in the public markets at a weighted average purchase price of \$7.13 per share for a total purchase price of \$57,040.

On July 25, 2007, Mr. Kanzer purchased 14,300 shares of the Issuer's common stock in the public markets at a weighted average purchase price of \$7.23 per share for a total purchase price of \$103,389.

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Item 4. Purpose of the Transaction.

The Reporting Persons purchased the securities for investment purposes. The Reporting Persons may acquire additional common shares of the Issuer or securities convertible into common shares of the Issuer, or may dispose of the same, through market transactions or otherwise.

The Reporting Persons do not have any current definite plans or proposals which would relate to or result in:

- (a) the acquisition or disposition of securities of the Issuer other than as herein disclosed;
- (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 changes in the present board of directors or management of the Issuer;
- (e) any material change in the present capitalization or dividend policy of the Issuer;
- (f) any changes in the Issuer's charter or by-laws which may impede the acquisition of control of the Issuer by any person;
- (g) Any action similar to any of those enumerated above.

Mr. Kanzer, however, in his capacity as Chief Executive Officer of the Issuer, consistently evaluates potential licensing opportunities, acquisition candidates and capital raising transactions on behalf of the Issuer.

Item 5. Interest in Securities of the Issuer.

- (a) As of the date hereof, the Issuer has 17,033,218 common shares issued and outstanding.
  - (b) Assuming the exercise in full of the presently exercisable options held by Mr. Kanzer and the presently exercisable warrants held by Accredited Venture Capital, LLC, the Reporting Persons have sole or shared voting and dispositive power over 8,715,604 shares of the Issuer. As a result, the Reporting Persons beneficially own approximately 47.53% of the Issuer's outstanding shares of common stock.
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(c) The following transactions in the Issuer's common stock have been effected during the past 60 days by the Reporting Persons:

On July 16, 2007, Mr. Kanzer purchased 81,000 shares of the Issuer's common stock in the public markets at a weighted average purchase price of \$4.84 per share for a total purchase price of \$392,040.

On July 17, 2007, Mr. Kanzer purchased 25,000 shares of the Issuer's common stock in the public markets at a weighted average purchase price of \$5.25 per share for a total purchase price of \$131,250.

On July 23, 2007, Mr. Kanzer purchased 29,700 shares of the Issuer's common stock in the public markets at a weighted average purchase price of \$6.75 per share for a total purchase price of \$200,475.

On July 24, 2007, Mr. Kanzer purchased 8,000 shares of the Issuer's common stock in the public markets at a weighted average purchase price of \$7.13 per share for a total purchase price of \$57,040.

On July 25, 2007, Mr. Kanzer purchased 14,300 shares of the Issuer's common stock in the public markets at a weighted average purchase price of \$7.23 per share for a total purchase price of \$103,389.

(d) The only interest in the securities of the Issuer which the Reporting Persons hold are the interests which have been described above in Item 3.

(e) Not Applicable

Item 6. Contracts, Arrangements, Understandings or Relationships with Respect to Securities of the Issuer.

None.

Item 7. Material to be Filed as Exhibits

None.

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Signatures

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

Dated: July 27, 2007

/s/Steve H. Kanzer  
Steve H. Kanzer

ACCREDITED VENTURE CAPITAL, LLC

By: Pharmainvestors, LLC  
Its: Managing Member

By: /s/ Steve H. Kanzer  
Steve H. Kanzer  
Managing Member

PHARMAINVESTORS, LLC

By: /s/ Steve H. Kanzer  
Steve H. Kanzer  
Managing Member