

United States
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM S-3
REGISTRATION STATEMENT
Under
The Securities Act of 1933

PLX PHARMA INC.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

46-4995704

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

PLx Pharma Inc.
8285 El Rio Street, Ste. 130
Houston, Texas 77054
(713) 842-1249

(Address, including zip code, and telephone number, including area code, of registrant's principal executive office)

Natasha Giordano
President and Chief Executive Officer
PLx Pharma Inc.
8285 El Rio Street, Ste. 130
Houston, Texas 77054
(713) 842-1249

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

With a copy to:
Robert Friedman, Esq.
Olshan Frome Wolosky LLP
1325 Avenue of the Americas
New York, New York 10019
(212) 451-2300

Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this registration statement, as determined by market conditions.

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If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box:

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box:

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

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

Large accelerated filer
Non-accelerated filer
Emerging growth company

Accelerated filer
Smaller reporting company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of Securities Act.

CALCULATION OF REGISTRATION FEE

Title of Each Class 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(2)
Common Stock, par value \$0.001 per share	\$,769,230	\$5.38	\$31,038,457.40	\$3,761.86

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- (1) In accordance with Rule 416 under the Securities Act of 1933, also includes an indeterminable number of shares that may become issuable by reason of stock splits, stock dividends, and similar transactions.
- (2) Estimated solely for the purpose of calculating the registration fee pursuant to Rules 457(c) of the Securities Act of 1933 based on the average of the high and low sales price of the common stock, as reported on the Nasdaq Capital Market on March 25, 2019.

The Registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to Section 8(a) of the Securities Act of 1933, may determine.

EXPLANATORY NOTE

The 5,769,230 shares of common stock to be registered pursuant to this Registration Statement consists of 5,769,230 shares of common stock, which is the number of shares of common stock issuable upon the conversion of the Company's Series A Convertible Preferred Stock owned by the selling stockholders as of March 25, 2019.

The information in this prospectus is not complete and may be changed. The selling stockholders may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

Subject to Completion, Dated March 27, 2019

PROSPECTUS

**5,769,230 SHARES
PLX PHARMA INC.
Common Stock (\$0.001 par value)**

This prospectus relates to the resale of up to 5,769,230 shares of PLX Pharma Inc. (the “Company,” “we,” “our” or “us”) common stock by the selling stockholders listed in this prospectus or their permitted transferees. The shares of common stock being offered by the selling stockholders are those issuable to the selling stockholders upon conversion of convertible preferred stock. The convertible preferred stock was originally issued in a private placement of 15,000 shares of Series A Convertible Preferred Stock, par value \$0.001 per share (the “Series A Preferred Stock”), to Park West Investors Master Fund, Limited, a Cayman Islands exempted company (“PWIMF”), and Park West Partners International, Limited, a Cayman Islands exempted company (“PWPI” and, together with PWIMF, the “Investors”) completed on February 20, 2019. For more information about the rights and preferences of the Series A Preferred Stock please see the section of this prospectus titled “Description of Capital Stock – Series A Preferred Stock.” For more information about the terms of the private placement in which the Series A Preferred Stock were issued, see the Company’s Form 8-K filed with the Securities and Exchange Commission on December 21, 2018.

All of the shares offered hereby are being sold by the selling stockholders named in this prospectus, and we will not receive any proceeds from sales of these securities. We will bear the costs and fees of the registration of the shares, and the selling stockholders will bear all commissions and discounts, if any, attributable to the sales of the shares.

The prices at which the selling stockholders or their permitted transferees may dispose of their shares or interests therein will be determined by the selling stockholders at the time of sale and may be at the prevailing market price for the shares, at prices related to such market price, at varying prices determined at the time of sale, or otherwise as described under the section of this prospectus under “Plan of Distribution” beginning on page 8. Information regarding the selling stockholders and the times and manner in which they may offer and sell the shares or interests therein under this prospectus is provided under “Selling Stockholders” and “Plan of Distribution” in this prospectus. The selling stockholders may resell the common stock to or through underwriters, broker-dealers or agents, who may receive compensation in the form of discounts, concessions or commissions.

Our common stock is listed on the Nasdaq Capital Market, or Nasdaq, under the symbol “PLXP.” On March 25, 2019, the last reported sale price of our common stock on Nasdaq was \$5.21.

The Company’s headquarters is located at 8285 El Rio Street, Ste. 130, Houston, Texas 77054. Our telephone number is (713) 842-1249.

Investing in our shares involves risk. You should carefully consider the risk factors for our shares, which are listed on page 6 of this prospectus. See “Risk Factors.”

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NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS DETERMINED WHETHER THIS PROSPECTUS IS TRUTHFUL OR COMPLETE. THEY HAVE NOT MADE, NOR WILL THEY MAKE, ANY DETERMINATION AS TO WHETHER ANYONE SHOULD BUY THESE SECURITIES. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The date of this prospectus is _____, 2019.

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This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or the SEC, using a “shelf” registration or continuous offering process. Under this shelf process, selling stockholders may from time to time sell the shares of common stock described in this prospectus in one or more offerings.

All references to “Company,” “we,” “our” or “us” refer solely to PLx Pharma Inc. and not to the persons who manage us or sit on our Board of Directors or are our stockholders. Reference to “selling stockholders” refers to those stockholders listed herein under “Selling Stockholders” beginning on page 6 of this prospectus, who may sell shares from time to time as described in this prospectus. All trade names used in this prospectus are either our registered trademarks or trademarks of their respective holders.

No person has been authorized to give any information or to make any representations other than those contained in this prospectus in connection with the offering made hereby, and if given or made, such information or representations must not be relied upon as having been authorized by the Company, any selling stockholder or by any other person. Neither the delivery of this prospectus nor any sale made hereunder shall, under any circumstances, create any implication that information herein is correct as of any time subsequent to the date hereof. This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any security other than the securities covered by this prospectus, nor does it constitute an offer to or solicitation of any person in any jurisdiction in which such offer or solicitation may not lawfully be made.

PROSPECTUS SUMMARY

This summary highlights selected information contained elsewhere or incorporated by reference in this prospectus. This summary may not contain all the information that you should consider before determining whether to invest in our securities. You should read the entire prospectus carefully, including the information included in the “Risk Factors” section, as well as our consolidated financial statements, notes to the consolidated financial statements and the other information incorporated by reference into this prospectus, as well as the exhibits to the registration statement of which this prospectus is a part, before making an investment decision.

The Company

We are a late-stage specialty pharmaceutical company initially focused on developing our clinically-validated and patent-protected PLxGuard delivery system to provide more effective and safer products. Our PLxGuard delivery system works by releasing active pharmaceutical ingredients into the duodenum, the first part of the small intestine immediately below the stomach, rather than in the stomach itself. We believe this may improve the absorption of many drugs currently on the market or in development and reduces gastrointestinal (GI) side effects common in an acute setting — including erosions, ulcers and bleeding — associated with aspirin and ibuprofen, and potentially other drugs.

The U.S. Food and Drug Administration (“FDA”) approved our lead product, Vazalore 325 mg, which is a novel formulation of aspirin using the PLxGuard delivery system intended to provide better antiplatelet effectiveness for cardiovascular disease prevention as compared to the current standard of care, enteric-coated aspirin, and significantly reduce GI side effects as compared with immediate-release aspirin. Vazalore 325 mg (formerly PL2200 Aspirin 325 mg and Aspertec 325 mg) was originally approved under the drug name aspirin, and the proprietary name ‘Vazalore’ was granted subsequent to the FDA approval. A companion 81 mg dose of the same novel formulation — Vazalore 81 mg — is in late-stage development and will be the subject of a supplemental New Drug Application (“sNDA”), leveraging the already approved status of Vazalore 325 mg. We are focused on manufacturing, scale-up and label finalization for Vazalore 325 mg aspirin dosage form and preparing an sNDA for Vazalore 81 mg maintenance dosage form. Our goal is to begin selling both products in the United States by mid-2020, subject to approval by the FDA.

Our commercialization strategy will target both the over-the-counter (“OTC”) and prescription markets, taking advantage of the existing OTC distribution channels for aspirin while leveraging the FDA approval of Vazalore 325 mg and expected approval for Vazalore 81 mg for OTC and prescription use when recommended by physicians for cardiovascular disease treatment and prevention. Given our clinical demonstration of better antiplatelet efficacy (as compared with enteric-coated aspirin) and better GI safety, we intend to use a physician-directed sales force to inform physicians — and, by extension, consumers — about our product’s clinical results in an effort to command both greater market share and a higher price for our next generation aspirin product. Our product pipeline also includes other oral NSAIDs using the PLxGuard delivery system that may be developed, including a clinical-stage, GI-safer ibuprofen — PL1200 Ibuprofen 200 mg — for pain and inflammation.

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PLx Opco Inc., which was known as PLx Pharma Inc. immediately prior to the Merger (as defined below), was originally incorporated in the State of Texas on November 12, 2002 under the name of ZT MediTech, Inc. (“ZTM”). In December 2002, ZTM changed its name to GrassRoots Pharmaceuticals, Inc. (“GrassRoots”). In March 2003, GrassRoots changed its name to PLx Pharma Inc. (“PLx Texas”). On December 31, 2013, PLx Texas converted pursuant to a Plan of Conversion from a Texas corporation to a Texas limited liability company and changed its name to PLx Pharma LLC (“PLx LLC”). On July 21, 2015, PLx LLC’s members voted to approve a Plan of Conversion whereby PLx LLC re-incorporated into a Delaware corporation, renamed PLx Pharma Inc. (“Old PLx”), effective July 27, 2015. On December 22, 2016, Old PLx entered into an Agreement and Plan of Merger and Reorganization among Old PLx, Dipexium Pharmaceuticals, Inc. (“Dipexium”) and Dipexium AcquireCo. (the “Merger”). The Merger closed on April 19, 2017. Pursuant to the terms of the Merger and after the consummation of the Merger, Old PLx was renamed PLx Opco Inc. and became a wholly-owned subsidiary of Dipexium, and Dipexium was renamed PLx Pharma Inc. and became the continuing registrant and reporting company. The combined company, renamed as PLx Pharma Inc., together with its subsidiaries PLx Opco Inc. and PLx Chile SpA, is referred to herein as the “Company.”

The Company’s headquarters is located at 8285 El Rio Street, Ste. 130, Houston, Texas 77054. Our telephone number is (713) 842-1249.

The Offering

<i>Securities Covered Hereby</i>	5,769,230 shares of common stock, par value \$0.001 per share.
<i>Use of Proceeds</i>	We are not selling any securities under this prospectus and will not receive any of the proceeds from the sale of these securities by the selling stockholders.
<i>NASDAQ Symbol</i>	PLXP
<i>Risk Factors</i>	Investing in our securities involves risks. Before making an investment decision, you should carefully consider the specific risks set forth under the caption “Risk Factors” beginning on page 5 of this prospectus. You should also refer to the other information in this prospectus, including our financial statements and the related notes incorporated by reference in this prospectus.

RISK FACTORS

Investing in our securities involves significant risks. Before deciding whether to invest in our securities, you should consider carefully the risks, uncertainties and assumptions described in this prospectus and any accompanying prospectus supplement, including the risk factors set forth in our filings with the SEC that are incorporated by reference herein and therein, including the risk factors in our most recent Annual Report on Form 10-K, as revised or supplemented by our Quarterly Reports on Form 10-Q, and which may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future. There may be other unknown or unpredictable economic, business, competitive, regulatory or other factors that could have material adverse effects on our future results. If any of these risks actually occurs, our business, business prospects, financial condition or results of operations could be seriously harmed. Please also read carefully the section below entitled “Forward-Looking Statements.”

FORWARD-LOOKING STATEMENTS

This prospectus and certain documents incorporated by reference in this prospectus contain forward-looking statements. In some cases, you can identify forward-looking statements by terms such as “may,” “intend,” “might,” “will,” “should,” “could,” “would,” “expect,” “believe,” “estimate,” “predict,” “potential,” or the negative of these terms, and similar expressions. These statements reflect our current views with respect to future events. These statements involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the forward-looking statements, many of which are discussed in greater detail under the heading “Risk Factors” in this prospectus.

USE OF PROCEEDS

All proceeds from the disposition of the common stock covered by this prospectus will go to the selling stockholders. We will not receive any proceeds from the disposition of the common stock by the selling stockholders. See “Plan of Distribution.”

The selling stockholders will pay any underwriting discounts and commissions and expenses incurred by the selling stockholders for brokerage, accounting, tax or legal services or any other expenses incurred by the selling stockholders in disposing of the shares. We will bear the costs, fees and expenses incurred to effect the registration of the shares covered by this prospectus, including all registration and filing fees, Nasdaq listing fees and fees and expenses of counsel and our independent registered public accounting firm.

SELLING STOCKHOLDERS

The shares of common stock being offered by the selling stockholders are those issuable to the selling stockholders upon conversion of the Series A Preferred Stock. For additional information regarding the issuance of the Series A Preferred Stock, see "Description of Capital Stock – Series A Preferred Stock" below. We are registering the shares of common stock to permit the selling stockholders to offer such shares for resale from time to time.

The table below lists the selling stockholders and other information regarding the beneficial ownership of the shares of common stock by each of the selling stockholders. The second column lists the number of shares of common stock beneficially owned by each selling stockholder as of March 25, 2019. The third column lists the shares of common stock being offered by this prospectus by the selling stockholders.

Beneficial ownership includes shares of common stock as to which a person or group has sole or shared voting power or dispositive power. Shares of common stock registered hereunder, as well as shares of common stock subject to options, warrants or convertible preferred stock that are exercisable or convertible within 60 days of March 25, 2019, are deemed outstanding for purposes of computing the number of shares beneficially owned and percentage ownership of the person or group holding such shares of common stock, options, warrants or convertible securities, but are not deemed outstanding for computing the percentage of any other person. Percentages are based on 8,752,178 shares of common stock outstanding as of March 25, 2019.

In accordance with the terms of that certain Purchase Agreement by and among the Company and the Investors, dated December 20, 2018 (the “Purchase Agreement”), this prospectus generally covers the resale of the maximum number of shares of common stock potentially issuable to the selling stockholders upon conversion of the Series A Preferred Stock. Because the conversion price of the Series A Preferred Stock may be adjusted, the number of common shares that will actually be issued may be more or less than the number of shares being offered by this prospectus. The fourth column assumes the sale of all of the shares offered by the selling stockholders pursuant to this prospectus.

The selling stockholders may sell all, some or none of their shares in this offering. See “Plan of Distribution.”

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Name of Selling Stockholder	Number of Shares of Common Stock Owned Prior to Offering (2)	Maximum Number of Shares of Common Stock to be Sold Pursuant to this Prospectus	Shares Beneficially Owned After Offering	
			Number of Shares of Common Stock Owned After Offering	Percentage of Outstanding Common Stock
Park West Investors Master Fund, Limited (1)	1,332,191	5,217,307	1,332,191	15.2%
Park West Partners International, Limited (1)	141,027	551,923	141,027	1.6%

- (1) Park West Asset Management LLC (“PWAM”), a Delaware limited liability company is the investment manager to the Investors and Peter S. Park (“Mr. Park”), is the sole member and manager of PWAM. Each of Mr. Park and PWAM has shared power to vote or direct the vote of, and to dispose or direct the disposition of, the shares of common stock held by the Investors. PWIMF has shared power to vote or direct the vote of, and to dispose or direct the disposition of, the shares of common stock held by it. PWPI has shared power to vote or direct the vote of, and to dispose or direct the disposition of, the shares of common stock held by it. The address of Mr. Park, PWAM, and the Investors is c/o Park West Asset Management LLC, 900 Larkspur Landing Circle, Suite 165, Larkspur, California 94939. Each of PWAM and Mr. Park specifically disclaims beneficial ownership of the shares of common stock reported herein except to the extent of their pecuniary interest.
- (2) Based on information contained in a report on Schedule 13D/A filed jointly by PWAM, the Investors and Mr. Park on March 1, 2019.

Except for the ownership of the Series A Preferred Stock issued pursuant to the Purchase Agreement and as described below under “Description of Capital Stock – Preferred Stock,” including Anthony Bartsh’s election to the Board of Directors of the Company, the selling stockholders have not had any material relationship with us within the past three years.

PLAN OF DISTRIBUTION

The selling stockholders, which as used herein includes donees, pledgees, transferees or other successors-in-interest selling shares of common stock or interests in shares of common stock received after the date of this prospectus from a selling stockholder as a gift, pledge, partnership distribution or other transfer, may, from time to time, sell, transfer or otherwise dispose of any or all of their shares of common stock or interests in shares of common stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These dispositions may be at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale, or at negotiated prices.

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The selling stockholders may use any one or more of the following methods when disposing of shares or interests therein:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent, but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales effected after the date the registration statement of which this prospectus is a part is declared effective by the SEC;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted by applicable law.

The selling stockholders may, from time to time, pledge or grant a security interest in some or all of the shares of common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of common stock, from time to time, under this prospectus, or under an amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus. The selling stockholders also may transfer the shares of common stock in other circumstances, in which case the transferees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

In connection with the sale of our common stock or interests therein, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the common stock in the course of hedging the positions they assume. The selling stockholders may also sell shares of our common stock short and deliver these securities to close out their short positions, or loan or pledge the common stock to broker-dealers that in turn may sell these securities. The selling stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

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The aggregate proceeds to the selling stockholders from the sale of the common stock offered by them will be the purchase price of the common stock less discounts or commissions, if any. Each of the selling stockholders reserves the right to accept and, together with their agents from time to time, to reject, in whole or in part, any proposed purchase of common stock to be made directly or through agents. We will not receive any of the proceeds from this offering. Upon any exercise of the warrants by payment of cash, however, we will receive the exercise price of the warrants.

The selling stockholders also may resell all or a portion of the shares in open market transactions in reliance upon Rule 144 under the Securities Act of 1933, provided that they meet the criteria and conform to the requirements of that rule.

The selling stockholders and any underwriters, broker-dealers or agents that participate in the sale of the common stock or interests therein may be "underwriters" within the meaning of Section 2(11) of the Securities Act. Any discounts, commissions, concessions or profit they earn on any resale of the shares may be underwriting discounts and commissions under the Securities Act. Selling stockholders who are "underwriters" within the meaning of Section 2(11) of the Securities Act will be subject to the prospectus delivery requirements of the Securities Act.

To the extent required, the shares of our common stock to be sold, the names of the selling stockholders, the respective purchase prices and public offering prices, the names of any agents, dealer or underwriter, any applicable commissions or discounts with respect to a particular offer will be set forth in an accompanying prospectus supplement or, if appropriate, a post-effective amendment to the registration statement that includes this prospectus.

In order to comply with the securities laws of some states, if applicable, the common stock may be sold in these jurisdictions only through registered or licensed brokers or dealers. In addition, in some states the common stock may not be sold unless it has been registered or qualified for sale or an exemption from registration or qualification requirements is available and is complied with.

We have advised the selling stockholders that the anti-manipulation rules of Regulation M under the Exchange Act may apply to sales of shares in the market and to the activities of the selling stockholders and their affiliates. In addition, to the extent applicable we will make copies of this prospectus (as it may be supplemented or amended from time to time) available to the selling stockholders for the purpose of satisfying the prospectus delivery requirements of the Securities Act. The selling stockholders may indemnify any broker-dealer that participates in transactions involving the sale of the shares against certain liabilities, including liabilities arising under the Securities Act.

We have agreed to indemnify the selling stockholders against liabilities, including liabilities under the Securities Act and state securities laws, relating to the registration of the shares offered by this prospectus.

We have agreed with the selling stockholders to keep the registration statement of which this prospectus constitutes a part effective until the earlier of (i) the date that such securities become eligible for resale without volume or manner-of-sale restrictions and without current public information pursuant to Rule 144 and certain other conditions have been satisfied, or (ii) all of the securities have been sold or otherwise disposed of pursuant to the registration statement of which this prospectus forms a part or in a transaction in which the transferee receives freely tradable shares.

DESCRIPTION OF CAPITAL STOCK

The Company is authorized to issue 100,000,000 shares of common stock, par value \$0.001 per share, and 1,000,000 shares of preferred stock, par value \$0.001 per share. As of March 25, 2019 there were approximately 8,752,178 shares of common stock outstanding and 15,000 shares of Series A Preferred Stock outstanding.

The following is a summary of the material terms of our capital stock and certain other securities convertible into our capital stock. You should refer to our Amended Certificate of Incorporation (the "Certificate of Incorporation"), and Amended and Restated Bylaws (the "Bylaws") and the agreements and instruments described below for more detailed information.

Common Stock

Each share of common stock entitles its record holder to one vote on all matters to be voted on by the common stockholders of the Company. Except as otherwise provided by law, actions by the common stockholders of the Company may be approved by a majority vote of the stockholders present at a duly called meeting of the stockholders at which a quorum is present; however, an amendment to the Bylaws by the stockholders requires the affirmative vote of the holders of at least sixty-six and two-thirds percent (66-2/3%) of the voting power of all of the then outstanding shares of the capital stock of the Company entitled to vote at a meeting of stockholders, duly called. The Board of Directors of the Company may, by majority vote of those present at any meeting at which a quorum is present, amend the Bylaws, or enact such other Bylaws as in their judgment may be advisable for the regulation of the conduct of the affairs of the Company. The Board of Directors of the Company currently consists of seven directors, each elected director, except the Series A Director (as defined below), serves annually until his or her successor is duly elected and qualifies. At all meetings of stockholders for the election of directors, except the Series A Director (as defined below), a majority of the votes cast is sufficient to elect. No provision of the Company's Certificate of Incorporation or Bylaws provides for cumulative voting in the case of the election of directors or on any other matter.

Each holder of common stock of the Company is entitled to share pro rata in any dividends paid on the common stock out of assets legally available for that purpose, when, and if declared by the Board of Directors of the Company. Upon the liquidation, dissolution or winding up of the Company, the assets of the Company shall be distributed pro rata among the holders of common stock. However, the aforementioned dividend and liquidation rights are limited and qualified by the Series A Preferred Stock, which has a preference to any such distribution of the assets or funds. Other than the rights described above, the holders of common stock have no redemption, preemptive, subscription or conversion rights, nor any rights to payment from any sinking or similar fund, and are not subject to any calls or assessments. There are no restraints in the Certificate of Incorporation or Bylaws of the Company on the right of holders of shares of common stock to sell or otherwise alienate their shares of stock in the Company, and there are no provisions discriminating against any existing or prospective holder of shares of common stock as a result of such security holder owning a substantial amount of securities.

In addition to the Company's outstanding common stock, the Company has outstanding options to purchase its common stock held by its employees and directors and additional shares available for issuance under several equity compensation plans, as further described in the Company's periodic reports filed with the SEC.

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Preferred Stock

The Company was authorized to issue 1,000,000 shares of preferred stock, par value \$0.001 per share. In February 2019, pursuant to this authorization, the Company designated 45,000 shares as Series A Preferred Stock and issued 15,000 of such shares. This leaves 30,000 shares of authorized but unissued Series A Preferred Stock. The Company currently has 15,000 shares of preferred stock issued and outstanding. This leaves 985,000 shares of preferred stock authorized but unissued. The shares of common stock being offered by the selling stockholders are those issuable to the selling stockholders upon conversion of the Series A Preferred Stock.

Series A Preferred Stock

On February 20, 2018, the Company issued to the Investors 15,000 shares of Series A Preferred Stock, par value \$0.001 per share, at a price of \$1,000 per share, subject to the terms of the Amended and Restated Certificate of Designations, Preferences and Rights of Series A Convertible Preferred Stock (the "Certificate of Designation").

Pursuant to the Certificate of Designation, each share of Series A Preferred Stock can be converted, at the holder's option at any time, into shares of the Company's common stock at a conversion rate equal to the quotient of (i) the \$1,000 stated value divided by (ii) the initial conversion price of \$2.60, subject to specified adjustments for stock splits, cash or stock dividends, recapitalizations, combinations, subdivisions or other similar events as set forth in the Certificate of Designation. The Series A Preferred Stock contain limitations that prevent the holder from acquiring shares of the Company's common stock upon conversion that would result in the number of shares beneficially owned by such holder and its affiliates exceeding the Beneficial Ownership Limitation (as defined in the Certificate of Designation).

Each holder of shares of Series A Preferred Stock will also receive quarterly dividends ending on the Dividend End Date (as defined in the Certificate of Designation). Such dividends will be paid by the Company out of funds legally available therefor, payable, subject to the conditions and other terms set forth in the Certificate of Designation, in cash or in-kind in additional shares of Series A Preferred Stock on the stated value of such shares of Series A Preferred Stock at the dividend rate of eight percent (8%) per annum. To the extent that applicable law or any of the Company's existing contractual restrictions prohibit any required issuance of additional shares of Series A Preferred Stock as in-kind dividends or otherwise (the "Additional Shares"), then appropriate adjustment to the conversion price of the Series A Preferred Stock shall be made at the time of a conversion of shares of Series A Preferred Stock or calculation of the number of shares of Common Stock into which shares of Series A Preferred Stock are convertible, such that the number of resulting conversion shares includes the aggregate number of shares of Common Stock into which such Series A Preferred Stock shares plus any Additional Shares would be convertible.

Each share of Series A Preferred Stock carries a liquidation preference equal to its stated value of \$1,000 (as adjusted thereunder) plus accrued and unpaid dividends thereon, and also carries a redemption right upon certain change of control transactions equal to the greater of the liquidation preference and the value of the common stock issuable upon conversion thereof (without regard to the Beneficial Ownership Limitation), based upon a thirty-day volume weighted average price of the common stock prior to the date of the redemption request.

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The holders of the Series A Preferred Stock, voting as a separate class, have customary consent rights with respect to certain corporate actions of the Company, including (a) authorizing, creating, designating, establishing, issuing or selling an increased number of shares of Series A Preferred Stock or any other class or series of capital stock ranking senior to or on parity with the Series A Preferred Stock as to dividends or upon liquidation; (b) adopting a plan for the liquidation, dissolution or winding up of the affairs of the Company or any recapitalization plan, file any petition seeking protection under any federal or state bankruptcy or insolvency law or make a general assignment for the benefit of creditors; (c) entering into any Change of Control Transaction (as defined in the Certificate of Designation); (d) entering into any transaction with any affiliate or shareholder of the Company, which transaction has the effect, directly or indirectly, of causing a distribution to such affiliate or shareholder in preference to the Series A Preferred Stock; (e) incurring, assuming or suffering to exist any indebtedness for borrowed money in excess of \$15,000,000 in the aggregate; (f) amending, altering or repealing the Certificate of Incorporation or Bylaws and the powers, preferences, privileges, relative, participating, optional and other special rights and qualifications, limitations and restrictions thereof, which would adversely affect any right, preference, privilege or voting power of the Series A Preferred Stock, or which would increase or decrease the amount of authorized shares of the Series A Preferred Stock or of any other series of preferred stock ranking senior to the Series A Preferred Stock; or (g) materially change the nature or scope of the business of the Company or enter into any new line of business.

In addition, the holders of the Series A Preferred Stock have the exclusive right, voting separately as a class, to elect one (1) director (the “Series A Director”) to the Board of Directors of the Company, for so long as Park West Asset Management LLC and its affiliates hold at least twenty-five percent (25%) of the issued and outstanding Series A Preferred Stock. Mr. Bartsh was designated for election to, and currently serves as the Series A Director.

Anti-Takeover Provisions

The Company may issue up to an additional 985,000 shares of preferred stock on such terms and with such rights, preferences and designations, including, without limitation restricting dividends on its common stock, dilution of the voting power of its common stock and impairing the liquidation rights of the holders of its common stock, as the Board of Directors of the Company may determine without any vote of the stockholders. The issuance of such preferred stock, depending upon the rights, preferences and designations thereof may have the effect of delaying, deterring or preventing a change in control of the Company.

In addition, as more fully explained in Item 15 below, the Company is subject to Section 203 of the Delaware General Corporation Law (“DGCL”), which may restrict the ability of stockholders to authorize a merger, business combination or change of control. Further, the Company has entered into change of control agreements through employment agreements, which may also have the effect of delaying, deterring or preventing a change in control.

Transfer Agent and Registrar; Market Listing

The transfer agent for the Company's common stock is VStock Transfer, LLC. Our common stock is traded on Nasdaq under the symbol "PLXP."

LEGAL MATTERS

Certain legal matters in connection with the issuance of the shares of common stock offered hereby have been passed upon for the Company by Olshan Frome Wolosky LLP, 1325 Avenue of the Americas, New York, New York 10019.

EXPERTS

The consolidated financial statements incorporated in this prospectus by reference from the Company's Annual Report on Form 10-K for the year ended December 31, 2018 have been audited by Marcum LLP, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference.

The consolidated financial statements incorporated in this prospectus by reference from the Company's Annual Report on Form 10-K for the year ended December 31, 2017 have been audited by GBH CPAs, PC, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference.

Such financial statements have been so incorporated in reliance upon the reports of such firms given upon their authority as experts in accounting and auditing.

ADDITIONAL INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. You can read and copy any materials we file with the SEC at its Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549 and at its regional offices, a list of which is available on the Internet at <http://www.sec.gov/contact/addresses.htm>. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC maintains an Internet site at <http://www.sec.gov> that contains reports, proxy and information statements, and other information regarding issuers, such as us, that file electronically with the SEC. Additionally, you may access our filings with the SEC through our website at <https://plxpharma.com/>. The information on our website is not part of this prospectus.

The SEC allows us to incorporate by reference the information we file with it, which means that we can disclose important information to you by referring you to those documents. The information we incorporate by reference is considered to be part of this prospectus, and information that we file later with the SEC will automatically update and supersede this information. We incorporate by reference the documents listed below and any future filings made by us with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, until the sale of all the shares of common stock that are part of this offering. The documents we are incorporating by reference are as follows:

- (1) Our Annual Report on Form 10-K for the year ended December 31, 2018, filed with the SEC on March 8, 2019;
- (2) Our Definitive Proxy Statement on Schedule 14A, filed with the SEC on August 20, 2018;
- (3) Our Current Reports on Form 8-K (other than information furnished rather than filed) filed with the SEC on February 14, 2019, February 20, 2019, March 8, 2019 (with respect to the filed portions contained therein) and March 25, 2019; and
- (4) The description of our common stock contained in our registration statement on Form 8-A declared effective by the SEC on March 12, 2014, including any amendments or reports filed for the purpose of updating that description.

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All documents filed pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act, after the date of the initial registration statement and prior to effectiveness of the registration statement and after the date of this prospectus but prior to the filing of a post-effective amendment which indicates that all securities offered hereby have been sold or which deregisters all securities then remaining unsold shall be deemed to be incorporated by reference into this registration statement and to be a part hereof from the date of filing of such documents, provided, however, that the registrant is not incorporating any information furnished under either Item 2.02 or Item 7.01 of any Current Report on Form 8-K.

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

The documents incorporated by reference in this prospectus may be obtained from us without charge and will be provided to each person, including any beneficial owner, to whom a prospectus is delivered. You may obtain a copy of the documents at no cost by submitting an oral or written request to:

PLx Pharma Inc.
8285 El Rio Street, Ste. 130
Houston, Texas 77054
Attention: Corporate Secretary
(713) 842-1249

Additional information about us is available at our web site located at <https://plxpharma.com/>. Information contained in our web site is not a part of this prospectus.

DISCLOSURE OF COMMISSION POSITION ON INDEMNIFICATION FOR SECURITIES ACT LIABILITIES

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or persons controlling the Company, the Company has been advised that it is the SEC's opinion that such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution⁽¹⁾⁽²⁾

SEC registration fee	\$ 3,761.86
Transfer agent and registrar fee	\$ 5,000
Printing expenses	\$ 5,000
Accountant fees	\$ 4,000
Counsel fees	\$ 50,000
Miscellaneous	\$ 0
Total	\$67,761.86

(1) All such amounts are estimates, other than the SEC registration fee.

(2) All fees and expenses incident to the registration of the shares disclosed above are borne by the Company, except for underwriting discounts and trading commissions in connection with the selling stockholders' offers and sales of the common stock. Counsel fees include fees incurred in respect of counsel to the selling stockholders in addition to those of counsel to the Company.

Item 15. Indemnification of Directors and Officers

The Company may, to the fullest extent permitted by Section 145 of the DGCL, as the same may be amended and supplemented, indemnify any and all persons whom it shall have power to indemnify under said section from and against any and all of the expenses, liabilities, costs, fees or other matters referred to in or covered by said section, and the indemnification provided for shall not be deemed exclusive of any other rights to which a person indemnified may be entitled under any bylaw, agreement, insurance, vote of stockholders or disinterested directors or otherwise, both as to action in his official capacity and as to action in another capacity while holding such office, and shall continue as to a person who has ceased to be director, officer, employee or agent and shall inure to the benefit of the heirs, executors and administrators of such a person.

No director shall be personally liable to the Company or our stockholders for monetary damages for any breach of fiduciary duty by such director as a director. Notwithstanding the foregoing sentence, a director shall be liable to the extent provided by applicable law: (i) for breach of the director's duty of loyalty to the Company or our stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) pursuant to Section 174 of the DGCL or (iv) for any transaction from which the director derived an improper personal benefit.

Delaware Law

The Company is subject to Section 203 of the DGCL, which prevents an "interested stockholder" (defined in Section 203, generally, as a person owning 15% or more of a corporation's outstanding voting stock) from engaging in a "business combination" with a publicly-held Delaware corporation for three years following the date such person became an interested stockholder, unless: (i) before such person became an interested stockholder, the board of directors of the corporation approved the transaction in which the interested stockholder became an interested stockholder or approved the business combination; (ii) upon consummation of the transaction that resulted in the interested stockholder's becoming an interested stockholder, the interested stockholder owns at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced (subject to certain exceptions), or (iii) following the transaction in which such person became an interested stockholder, the business combination is approved by the board of directors of the corporation and authorized at a meeting of stockholders by the affirmative vote of the holders of 66% of the outstanding voting stock of the corporation not owned by the interested stockholder. A "business combination" includes mergers, stock or asset sales and other transactions resulting in a financial benefit to the interested stockholder.

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The provisions of Section 203 of the DGCL could have the effect of delaying, deferring or preventing a change in the control of the Company.

The Company maintains a directors and officers insurance and company reimbursement policy. The policy insures directors and officers against unindemnified loss arising from certain wrongful acts in their capacities and reimburses the Company for such loss for which the Company has lawfully indemnified the directors and officers. The policy contains various exclusions, none of which relate to the offering hereunder. The Company also has agreements with its directors and officers providing for the indemnification thereof under certain circumstances.

Item 16. Exhibits

- 4.1 Certificate of Designations, Preferences and Rights of Series A Convertible Preferred Stock of the Company, incorporated herein by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K, filed on February 20, 2019.
- 4.2 Amended and Restated Certificate of Designations, Preferences and Rights of Series A Convertible Preferred Stock of the Company, incorporated herein by reference to Exhibit 3.3 to the Registrant's Current Report on Form 8-K, filed on February 20, 2019.
- 4.3 Purchase Agreement, dated as of December 20, 2018, by and among the Company and the Investors, incorporated herein by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K, filed on December 21, 2018.
- 4.4 Registration Rights Agreement, dated as of December 20, 2018, by and among the Company and the Investors, incorporated herein by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K, filed on December 21, 2018.
- *5.1 Opinion of Olshan Frome Wolosky LLP as to the legality of the stock covered by this registration statement.
- *23.1 Consent of Marcum LLP, independent registered public accounting firm.
- *23.2 Consent of GBH CPAs, PC, independent registered public accounting firm.
- *23.3 Consent of Olshan Frome Wolosky LLP (included in Exhibit 5.1).
- *24.1 Powers of Attorney, included on the signature page to this Registration Statement.

* Filed herewith.

Item 17. 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;

(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 a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(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), (a)(1)(ii) and (a)(1)(iii) of this section do not apply if the registration statement is on Form S-3 or Form F-3 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, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

(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 that remain unsold at the termination of the offering.

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- (4) That, for the purpose of determining liability under the Securities Act to any purchaser, if the registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

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 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.

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 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-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the Town of Sparta, State of New Jersey, on the 27th day of March, 2019.

PLX PHARMA INC.
(Registrant)

By: /s/ Natasha Giordano
Natasha Giordano
President and Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints each of Natasha Giordano and Rita O'Connor as his or her true and lawful attorneys-in-fact and agent, with full power of substitution and resubstitution, for him and her and in his or her name, place and stead, in any and all capacities, to sign any or all amendments to this registration statement and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said 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 with respect to the offering of securities contemplated by this registration statement, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agent or any of them, or his, her or their substitute or substitutes, may lawfully 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 date indicated.

Signature	Title	Date
/s/ Natasha Giordano Natasha Giordano	President, Chief Executive Officer and Director (Principal Executive Officer)	March 27, 2019
/s/ Rita O'Connor Rita O'Connor	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	March 27, 2019
/s/ Michael J. Valentino Michael J. Valentino	Director and Executive Chairman of the Board	March 27, 2019
/s/ Gary Balkema Gary Balkema	Director	March 27, 2019
/s/ Anthony Bartsh Anthony Bartsh	Director	March 27, 2019
/s/ Robert Casale Robert Casale	Director	March 27, 2019
/s/ Kirk Calhoun Kirk Calhoun	Director	March 27, 2019
/s/ John W. Hadden II John W. Hadden II	Director	March 27, 2019

EXHIBIT INDEX

- [4.1 Certificate of Designations, Preferences and Rights of Series A Convertible Preferred Stock of the Company, incorporated herein by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K, filed on February 20, 2019.](#)
- [4.2 Amended and Restated Certificate of Designations, Preferences and Rights of Series A Convertible Preferred Stock of the Company, incorporated herein by reference to Exhibit 3.3 to the Registrant's Current Report on Form 8-K, filed on February 20, 2019.](#)
- [4.3 Purchase Agreement, dated as of December 20, 2018, by and among the Company and the Investors, incorporated herein by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K, filed on December 21, 2018.](#)
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- [*5.1 Opinion of Olshan Frome Wolosky LLP as to the legality of the stock covered by this registration statement.](#)
- [*23.1 Consent of Marcum LLP, independent registered public accounting firm.](#)
- [*23.2 Consent of GBH CPAs, PC, independent registered public accounting firm.](#)
- [*23.3 Consent of Olshan Frome Wolosky LLP \(included in Exhibit 5.1\).](#)
- [*24.1 Powers of Attorney, included on the signature page to this Registration Statement.](#)

* Filed herewith.

March 27, 2019

PLx Pharma Inc.
8285 El Rio Street
Suite 130
Houston, Texas 77054

Re: Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as counsel to PLx Pharma Inc., a Delaware corporation (the "Company"), in connection with the preparation and filing of a Registration Statement on Form S-3 (as may be amended from time to time, the "Registration Statement") with the Securities and Exchange Commission under the Securities Act of 1933, as amended, relating to the offer and resale from time to time by the selling stockholders identified in the Prospectus constituting a part of the Registration Statement of an aggregate of up to 5,769,230 shares (the "Shares") of the Company's common stock, \$0.001 par value per share, which have been authorized for issuance, and will be issued, to the selling stockholders named in the Registration Statement upon conversion of the 15,000 shares of the Company's Series A Convertible Preferred Stock.

As a basis for rendering the opinion contained herein, we have examined the following documents: (i) the Registration Statement, (ii) the Amended Certificate of Incorporation (including the Amended and Restated Certificate of Designations, Preferences and Rights of Series A Convertible Preferred Stock) and the Amended and Restated Bylaws of the Company and (iii) certain resolutions adopted by the Board of Directors of the Company. We have also examined and relied upon the original or certified copies of such records of the Company and such agreements, certificates of public officials, certificates of officers or representatives of the Company and others, and such other documents as we deem relevant and necessary as a basis for the opinion hereinafter expressed. In such examination, we have assumed, without inquiry, the legal capacity of all natural persons, the authenticity of all documents submitted to us as originals, the genuineness of all signatures on original documents, the conformity with originals of all documents submitted to us as certified or photostatic copies, and the correctness of all statements of fact contained in the documents examined. As to various questions of fact material to our opinion, we have relied upon statements or certificates of public officials, certificates of officers or representatives of the Company and others.

Based upon the foregoing and in reliance thereon and subject to the assumptions, qualifications and limitations set forth herein, we are of the opinion that the Shares have been duly authorized and, when issued in accordance with the terms of the Amended and Restated Certificate of Designations, Preferences and Rights of Series A Convertible Preferred Stock, will have been duly and validly issued, fully paid and non-assessable.

March 27, 2019

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We are members of the Bar of the State of New York. We express no opinion as to the effects of any laws, statutes, regulations or ordinances other than the laws of the States of New York and Delaware and the federal laws of the United States of America as in effect on the date of this letter, and we are expressing no opinion as to the effect of the laws of any other jurisdiction or as of any later date.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement and to the reference made to this firm under the caption "Legal Matters" in the prospectus constituting a part of the Registration Statement. In giving such consent, we do not thereby concede that this firm is within the category of persons whose consent is required under Section 7 of the Securities Act of 1933, as amended, or the rules and regulations of the Securities and Exchange Commission.

This opinion letter is limited to the matters set forth herein, and no opinion may be inferred or implied beyond the matters expressly set forth herein. This opinion letter is not a guaranty nor may one be inferred or implied. This opinion letter speaks as of the date hereof and we assume no obligation to update or supplement this opinion letter to reflect any facts or circumstances that may hereafter come to our attention or any changes in fact or law that may hereafter occur.

Very truly yours,

/s/ OLSHAN FROME WOLOSKY LLP

OLSHAN FROME WOLOSKY LLP

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM'S CONSENT

We consent to the incorporation by reference in this Registration Statement of PLx Pharma Inc. on Form S-3 of our report dated March 8, 2019, with respect to our audit of the consolidated financial statements of PLx Pharma Inc. as of December 31, 2018 and for the year then ended appearing in the Annual Report on Form 10-K of PLx Pharma Inc. for the year ended December 31, 2018. We also consent to the reference to our firm under the heading "Experts" in the Prospectus, which is part of this Registration Statement.

/s/ Marcum llp

Marcum llp
Houston, Texas
March 27, 2019

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in this Registration Statement of PLx Pharma, Inc. on Form S-3 and in the related Prospectus of our report dated March 23, 2018 relating to the consolidated financial statements as of December 31, 2017 and the year then ended. We also consent to the reference to our firm under the heading "*Experts*" appearing therein.

/s/ GBH CPAs, PC

GBH CPAs, PC
www.gbhcpas.com
Houston, Texas

March 27, 2019