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

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**FORM S-8  
REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933**

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**BIOLINERX LTD.**

*(Exact Name of Registrant as Specified in its Charter)*

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**State of Israel**

*(State or other jurisdiction of  
incorporation or organization)*

**Not Applicable**

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

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**BioLineRx Ltd.  
2 HaMa'ayan Street  
Modi'in 7177871, Israel  
(972) (8) 642-9100**

*(Address of principal executive offices)*

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**BioLineRx Ltd. Amended and Restated 2003 Share Incentive Plan**

*(Full title of the Plan)*

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**BioLineRx USA, Inc.  
77 Fourth Ave  
Waltham, Massachusetts 02451  
(617) 859-6409**

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

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Copies of all correspondence to:

**Gary Emmanuel, Esq.  
Greenberg Traurig LLP  
One Vanderbilt Avenue  
New York, NY 10017  
Tel: 212-801-9200**

**Adam D. Janoff, Esq.  
General Counsel, Head of  
Compliance & Corporate Secretary  
77 Fourth Avenue  
Waltham, MA 02451  
Tel: 617-859-6409**

**Sharon Rosen, Adv.  
FISCHER (FBC & Co.)  
146 Menachem Begin Street  
Tel Aviv 6492103, Israel  
Tel: +972 -3-6944111**

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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.

Large accelerated filer   
Non-accelerated filer

Accelerated filer   
Smaller reporting company   
Emerging growth company

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## EXPLANATORY NOTE

BioLineRx, Ltd. (the “Company”) initially filed a registration statement on Form S-8 (SEC File No. 333-176419) with the Securities and Exchange Commission (the “SEC”) in connection with the registration of an aggregate of 1,000,000 Ordinary Shares (equivalent to 66,666 ADSs, based on each ADS representing 15 ordinary shares) to be issued under the Plan. In September 2012, the Company filed another registration statement on Form S-8 (SEC File No. 333-183976) in connection with the registration of an additional 2,000,000 Ordinary Shares (equivalent to 133,333 ADSs, based on each ADS representing 15 ordinary shares) to be issued under the Plan. In December 2014, the Company filed another registration statement on Form S-8 (SEC File No. 333-201326) in connection with the registration of an additional 1,600,000 Ordinary Shares (equivalent to 106,666 ADSs, based on each ADS representing 15 ordinary shares) to be issued under the Plan. In January 2016, the Company filed another registration statement on Form S-8 (SEC File No. 333-208865) in connection with the registration of an additional 5,000,000 Ordinary Shares (equivalent to 333,333 ADSs, based on each ADS representing 15 ordinary shares) to be issued under the Plan, as amended by Post-Effective Amendment No. 1 on Form S-8 filed in March 2017. In January 2023, the Company filed another registration statement on Form S-8 (SEC File No. 333-269334) in connection with the registration of an additional 106,218,486 Ordinary Shares (equivalent to 7,081,232 ADSs, based on each ADS representing 15 ordinary shares) to be issued under the Plan. These previously-filed registration statements are referred to collectively herein as the “Prior Registration Statements.”

In accordance with General Instruction E to Form S-8, the Company is filing this registration statement on Form S-8 solely to register an additional 57,500,000 Ordinary Shares (equivalent to 3,833,333 ADSs, with each ADS representing 15 ordinary shares) which may be issued under the Plan over and above the number of Ordinary Shares issuable pursuant to the Plan that were registered under the Prior Registration Statements. Pursuant to General Instruction E to Form S-8, the contents of the Prior Registration Statements are hereby incorporated by reference in their entirety, with the exception of Items 3 and 8 of Part II of such Prior Registration Statements, each of which is amended and restated in its entirety herein.

## PART II INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

### Item 3. Incorporation of Documents by Reference.

The SEC allows the Company to incorporate by reference our publicly filed reports into this prospectus, which means that information included in those reports is considered part of this prospectus. Information that we file with the SEC after the date of this prospectus will automatically update and supersede the information contained in this prospectus. We incorporate by reference the following documents filed with the SEC and any future filings we will make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended:

- our Annual Report on [Form 20-F](#) for the year ended December 31, 2022, filed with the SEC on March 22, 2023
- our Reports on Form 6-K filed with the SEC on [January 4, 2023](#), [March 6, 2023](#), [April 17, 2023](#), [April 25, 2023](#), [May 24, 2023](#), [June 23, 2023](#), [July 17, 2023](#), [August 8, 2023](#), [August 30, 2023](#), [August 30, 2023](#), [September 11, 2023](#), [September 28, 2023](#), [October 12, 2023](#), [November 20, 2023](#), [December 12, 2023](#) and [December 21, 2023](#) (in each case, to the extent expressly incorporated by reference into our effective registration statements filed by us under the Securities Act); and
- the description of our ordinary shares contained in [Exhibit 2.2](#) to our Annual Report on Form 20-F for the year ended December 31, 2022, filed with the SEC on March 22, 2023, including any amendment or report filed with the SEC for the purpose of updating such description.

All documents filed by us pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act after the date of this prospectus and prior to the filing of a post-effective amendment that indicates that all securities have been offered and sold or that deregisters all securities remaining unsold shall be deemed to be incorporated by reference in the registration statement and to be a part hereof from the date of filing of such documents (other than information that is furnished in such documents but deemed by the rules of the SEC not to have been filed). Any statement contained in a document 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 which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

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We will furnish without charge to you, on written or oral request, a copy of any or all of the above documents, other than exhibits to such documents which are not specifically incorporated by reference therein. You should direct any requests for documents to:

BioLineRx Ltd.  
2 HaMa'ayan Street  
Modi'in 7177871, Israel  
Attention: Corporate Secretary  
Tel.: +972-8-642-9100  
e-mail: [info@BioLineRx.com](mailto:info@BioLineRx.com)

**Item 8. Exhibits.**

<b>Exhibit Number</b>	<b>Exhibit Description</b>	<b>Method of Filing</b>
<a href="#">4.1</a>	<a href="#">BioLineRx Ltd. Amended and Restated 2003 Share Incentive Plan</a>	Incorporated by reference to Exhibit 4.18 the Registrant's Annual Report on Form 20-F (filed on March 10, 2016).
<a href="#">5.1</a>	<a href="#">Opinion of FISCHER (FBC &amp; Co), as to the legality of the securities being registered</a>	Filed herewith.
<a href="#">23.1</a>	<a href="#">Consent of FISCHER (FBC &amp; Co) included in Exhibit 5.1)</a>	Filed herewith.
<a href="#">23.2</a>	<a href="#">Consent of Kesselman &amp; Kesselman, Certified Public Accountants (Isr.), a member of PricewaterhouseCoopers International Limited, independent registered public accounting firm for the Registrant</a>	Filed herewith.
<a href="#">24.1</a>	<a href="#">Power of Attorney (included on signature page)</a>	Filed herewith.
<a href="#">107</a>	<a href="#">Filing Fee Table</a>	Filed herewith.

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## 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;

(ii) to reflect in the prospectus any facts or events arising after the effective date of the Registration statement (or 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 SEC pursuant to Rule 424(b) if, in the aggregate, the change in volume and price represent no more than a 20 percent 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 this Registration Statement or any material change to such information in this Registration Statement; *provided, however*, that paragraphs (a)(1)(i) and (a)(1)(ii) of this section do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the SEC by the registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in the Registration Statement;

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

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

The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the Registration Statement shall be deemed to be a new registration statement relating to the securities offered herein, 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 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 SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

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## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Modi'in, State of Israel, on December 29, 2023.

BIOLINERX LTD.

By: /s/ Philip A. Serlin  
Philip A. Serlin  
Chief Executive Officer

## POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each director and officer of BIOLINERX LTD. whose signature appears below hereby constitutes and appoints Philip A. Serlin and Mali Ze'evi, and each of them severally, acting alone and without the other, his/her true and lawful attorney-in-fact with full power of substitution or re-substitution, for such person and in such person's name, place and stead, in any and all capacities, to sign on such person's behalf, individually and in each capacity stated below, any and all amendments, including post-effective amendments to this Registration Statement, and to sign any and all additional registration statements relating to the same offering of securities of the Registration Statement that are filed pursuant to Rule 462(b) of the Securities Act of 1933 and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact, full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises, as fully to all intents and purposes as such person might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact, 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 below by the following persons in the capacities and on the dates indicated:

<u>SIGNATURE</u>	<u>TITLE</u>	<u>DATE</u>
<u>/s/ Philip A. Serlin</u> Philip A. Serlin	Chief Executive Officer, (Principal Executive Officer)	December 29, 2023
<u>/s/ Mali Zeevi</u> Mali Zeevi	Chief Financial Officer (Principal Financial and Accounting Officer)	December 29, 2023
<u>/s/ Aharon Schwartz</u> Aharon Schwartz	Chairman of the Board	December 29, 2023
<u>/s/ Michael J. Anghel</u> Michael J. Anghel	Director	December 29, 2023
<u>/s/ Rami Dar</u> Rami Dar	Director	December 29, 2023
<u>/s/ B.J. Bormann</u> B.J. Bormann	Director	December 29, 2023
<u>/s/ Raphael Hofstein</u> Raphael Hofstein	Director	December 29, 2023
<u>s/ Avraham Molcho</u> Avraham Molcho	Director	December 29, 2023
<u>/s/ Sandra Panem</u> Sandra Panem	Director	December 29, 2023
<u>/s/ Shaoyu Yan</u> Shaoyu Yan	Director	December 29, 2023
<u>/s/ Gal Cohen</u> Gal Cohen	Director	December 29, 2023

**AUTHORIZED REPRESENTATIVE**

Pursuant to the Securities Act of 1933, the undersigned, the duly authorized representative in the United States of BioLineRx Ltd. has signed this registration statement on December 29, 2023.

BioLineRx USA, Inc.

By: /s/ Phil Serlin

Name: Phil Serlin

Title: Authorized Person

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December 29, 2023

BioLineRx Ltd.  
2 Hamayan Street  
Modi'in 7177871  
Israel

Ladies and Gentlemen:

We have acted as Israeli counsel to BioLineRx Ltd., a company organized under the laws of the State of Israel (the "Company"), in connection with the registration statement on Form S-8 (the "Registration Statement") to be filed by the Company with the U.S. Securities and Exchange Commission under the Securities Act of 1933, as amended (the "Securities Act"), for the registration of an additional 57,500,000 ordinary shares, par value NIS 0.1 per share ("Ordinary Shares"), of the Company (the "Shares"), including Shares that may be represented by the Company's American Depositary Shares (the "ADSs"), issuable under the Company's Amended and Restated 2003 Share Incentive Plan (the "Plan"). ADSs that represent the Shares will be issued under the Deposit Agreement, dated July 21, 2011, by and among the Company, the Bank of New York Mellon, as depository, and the owners and holders from time to time of ADSs issued thereunder.

In rendering the opinion expressed herein, we have examined the originals or copies certified or otherwise identified to our satisfaction of (i) the Registration Statement to which this opinion letter is attached as an exhibit; (ii) the articles of association of the Company, as currently in effect (the "Articles"); (iii) the Plan; (iv) resolutions of the board of directors of the Company (the "Board"), and (v) such other corporate records or other documents and such certificates or comparable documents of public officials and of officers and representatives of the Company as we have deemed relevant and necessary as a basis for this opinion. We have also made inquiries of such officers and representatives as we have deemed relevant and necessary as a basis for this opinion.

In such examination, we have assumed the genuineness of all signatures, the legal capacity of all natural persons, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as reproduced or certified copies, and the authenticity of the originals of such latter documents. We have assumed the same to have been properly given and to be accurate. We have also assumed the truth of all facts communicated to us by the Company and that all consents and minutes of meetings of the Board that have been provided to us are true and accurate and have been properly prepared in accordance with the Articles and all applicable laws. In addition, we have assumed that the consideration for the issuance and sale of the Shares shall be in an amount that is not less than the nominal (par) value of the Ordinary Shares.

Members of our firm are admitted to the Bar in the State of Israel, and we do not express any opinion as to the laws of any other jurisdiction. This opinion is limited to the matters stated herein and no opinion is implied or may be inferred beyond the matters expressly stated.

Based upon and subject to the forgoing and to the assumptions and qualifications set forth herein, we are of the opinion that the Shares (including Shares represented by ADSs), when paid for and issued in accordance with the terms of the Plan and the grants thereunder, 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. In giving this consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations promulgated thereunder.

This opinion letter is rendered as of the date hereof and we disclaim any obligation to advise you of facts, circumstances, events or developments that may be brought to our attention after the effective date of the Registration Statement that may alter, affect or modify the opinions expressed herein.

Very truly yours,

/s/ FISCHER (FBC &amp; Co.)

FISCHER (FBC &amp; Co.)

**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We hereby consent to the incorporation by reference in this Registration Statement on Form S-8 of BioLineRx Ltd. of our report dated March 22, 2023 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in BioLineRx Ltd.'s Annual Report on Form 20-F for the year ended December 31,2022.

Tel-Aviv, Israel  
December 29, 2023

/s/ Kesselman & Kesselman  
Certified Public Accountants (Isr.)  
A member firm of PricewaterhouseCoopers International Limited

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## Calculation of Filing Fee Tables

**Form S-8**  
(Form Type)

**BioLineRX Ltd.**

(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered Securities

Security Type	Security Class Title(1)	Fee Calculation Rule	Amount Registered(2)	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee
Equity	Ordinary Shares, par value NIS 0.10 per share (3)	Rule 457(c)	39,957,932	\$0.0496	\$1,981,913.43	0.00014760	\$292.54
Equity	Ordinary Shares, par value NIS 0.10 per share (4)	Rule 457(c) and Rule 457(h)	17,542,068	\$0.106	\$1,859,459.21	0.00014760	\$274.46
Total Offering Amounts					\$ 3,841,372.64		\$567.00
Total Fee Offsets							—
Net Fee Due							\$567.00

(1) These shares may be represented by American Depositary Shares (“ADSs”), evidenced by American Depositary Receipts, issuable upon deposit of the ordinary shares registered hereby, par value NIS 0.10 per share (“Ordinary Shares”), of BioLineRx Ltd. (the “Company”) and are registered on a separate registration statement on Form F-6EF (File No. 333-218969). Each ADS represents fifteen (15) Ordinary Shares.

(2) Pursuant to Rule 416(a) of the Securities Act of 1933, as amended, this registration statement also covers such indeterminate number of Ordinary Shares as may be offered or issued to prevent dilution resulting from stock splits, stock dividends or similar transactions pursuant to the terms of the BioLineRx Ltd. Amended and Restated 2003 Share Incentive Plan (the “Plan”).

(3) Represents Ordinary Shares issuable upon exercise of outstanding options granted under the Plan and the corresponding proposed maximum offering price per share represents the weighted average exercise price of these outstanding options, expressed in U.S. dollars based on the Bank of Israel exchange rate on December 26, 2023 (\$1.00=NIS 3.628).

(4) Represents Ordinary Shares issuable upon future award grants under the Plan and the corresponding proposed maximum offering price per share, which is estimated solely for the purposes of calculating the registration fee under Rule 457(c) and Rule 457(h) under the Securities Act, is based on the average of the high and low prices for the Company’s ADSs as quoted on the Nasdaq Capital Market on December 26, 2023, adjusted for ADS to Ordinary Share ratio.