UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form S-8

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

Lixte Biotechnology Holdings, Inc.

(Exact Name of Registrant as Specified in its Charter)

Delaware (State or Other Jurisdiction of Incorporation or Organization) 20-2903526 (I.R.S. Employer Identification Number)

680 East Colorado Boulevard, Suite 180
Pasadena, California 91101
(Address, including zip code, of Registrant's principal executive offices)

Lixte Biotechnology Holdings, Inc. 2020 Stock Incentive Plan (Full title of the plan)

John Kovach, Chief Executive Officer Lixte Biotechnology Holdings, Inc. 680 East Colorado Boulevard, Suite 180 Pasadena, California 91101 (631) 830-7092

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

COPIES TO:
David L. Ficksman, Esq.
TroyGould PC
1801 Century Park East, Suite 1600
Los Angeles, California 90067
(310) 789-1290

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 filet, | smarter reporting company, | and emerging growth company | III Kule 120-2 of the Exchai | ige Act. | | | |
|---------------------------------|--------------------------|--------------------|----------------------------|-----------------------------|------------------------------|-------------|--|--|--|
| Large accelerated filer | | | | Accelerated filer | | | | | |
| Non-accelerated filer | \boxtimes | | | Smaller reporting company | | \boxtimes | | | |
| | | | | Emerging growth company | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

EXPLANATORY NOTE

Pursuant to General Instruction E of Form S-8, this Registration Statement on Form S-8 is filed by Lixte Biotechnology Holdings, Inc. (the "Registrant") to register an additional 1,800,000 shares of the Registrant's common stock under the Lixte Biotechnology Holdings, Inc. 2020 Stock Incentive Plan (the "Plan"), as previously approved by the Registrant's board of directors and approved by the Registrant's stockholders at the Registrant's Annual Meeting held on October 7, 2022. The contents of the Registration Statement on Form S-8 (Registration No. 333-255407), filed with the Securities and Exchange Commission (the "Commission") on April 21, 2021, are hereby incorporated by reference and made a part hereof.

PART I

INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

All information required by Part I to be contained in the prospectus is omitted from this Registration Statement in accordance with the explanatory note to Part I of Form S-8 and Rule 428 under the Securities Act of 1933, as amended (the "Securities Act"). Documents containing the information required by Part I of the Registration Statement will be sent or given to Plan participants as specified by Rule 428(b)(1) under the Securities Act.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The following documents heretofore filed with the Securities and Exchange Commission (the "Commission") by the Registrant are incorporated herein by reference into this Registration Statement:

- (1) The Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2021, filed with the Commission on March 11, 2022;
- (2) The Registrant's Definitive Proxy Statement on <u>Schedule 14A</u>, filed with the Commission on August 26, 2022;
- (3) The Registrant's Quarterly Reports on Form 10-Q for the quarterly period ended March 31, 2022, filed with the Commission on May 11, 2022, for the quarterly period ended June 30, 2022, filed with the Commission on November 8, 2022;
- (4) The Registrant's Current Reports on Form 8-K, filed with the Commission on March 23, 2022, April 15, 2022, May 13, 2022, June 17, 2022, June 23, 2022, June 24, 2022, October 18, 2022, October 18, 2022, November 10, 2022, December 2, 2022 and December 6, 2022, and all other reports filed pursuant to Section 13(a) or 15(d) of the Exchange Act since the end of the fiscal year covered by the annual report referred to in clause (1) above; and
- (5) The description of the Registrant's common stock contained in the Registrant's Registration Statement on Form 8-A filed pursuant to Section 12 of the Exchange Act on November 17, 2020, including any subsequent amendments or reports filed for the purpose of updating such description.

All documents filed by the Registrant pursuant to Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), after the date of this Registration Statement and prior to the filing of a post-effective amendment to this Registration Statement indicating that all securities offered 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. 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 Registration Statement 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 such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Registration Statement.

Notwithstanding the foregoing, unless specifically stated to the contrary in the applicable Current Report on Form 8-K, none of the information disclosed by the Registrant under Items 2.02 or 7.01 of any Current Report on Form 8-K, including the related exhibits under Item 9.01, that the Registrant may from time to time furnish to the Commission will be incorporated by reference into, or otherwise included in, this Registration Statement.

3

Item 8. Exhibits.

| Exhibit Number | Exhibit Description |
|-------------------|--|
| 3.1 | Certificate of Incorporation (incorporated by reference to the exhibit to the Registrant's Registration Statement on Form 10-SB filed with the Commission on August 3, 2005) |
| 3.2 | Certificate of Amendment of Certificate of Incorporation (incorporated herein by reference to Appendix A to the Registrant's Information Statement filed with the Commission on September 30, 2006) |
| 3.3 | Certificate of Amendment of Certificate of Incorporation (incorporated by reference to the Exhibit to the Registrant's Current Report on Form 8-K filed with the Commission on November 27, 2020) |
| 3.4 | Amended and Restated Bylaws (incorporated herein by reference to the Exhibit to the Registrant's Current Report on Form 8-K filed with the Commission on November 10, 2022) |
| 4.1 | Certificate of Designations for the Registrant's Series A Convertible Preferred Stock (incorporated herein by reference to the Exhibit to the Registrant's Current Report on Form 8-K filed with the Commission on March 18, 2015) |
| 4.2 | Certificate of Amendment of Certificate of Designations of the Series A Convertible Preferred Stock (incorporated herein by reference to the Exhibit to the Registrant's Annual Report on Form 10-K filed with the Commission on March 28, 2016) |
| 5.1* | Opinion of TroyGould PC |
| 10.1 | Lixte Biotechnology Holdings, Inc., 2020 Stock Incentive Plan (incorporated by reference to the Exhibit to the Current Report on Form 8-K filed with the Commission on July 17, 2020) |
| 23.1* | Consent of TroyGould PC (included in Exhibit 5.1) |
| 23.2* | Consent of Weinberg & Company, P.A. |
| 24.1* | Power of Attorney (set forth on the signature page of this Registration Statement) |
| 107* | Filing Fee Table |

*Filed herewith.

Pursuant to the requirements of the Securities Act, Lixte Biotechnology Holdings, Inc. 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 Pasadena, state of California, on December 16, 2022.

Lixte Biotechnology Holdings, Inc.

By: /s/ John Kovach
Name: John Kovach

Title: Chief Executive Officer (Principal Executive Officer)

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each individual whose signature appears below hereby constitutes and appoints each of John Kovach and Eric Forman, acting singly, his true and lawful agent, proxy and attorney-in-fact, with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to (i) act on, sign and file with the Securities and Exchange Commission any and all amendments (including post-effective amendments) to this registration statement together with all schedules and exhibits thereto and any subsequent registration statement filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended, together with all schedules and exhibits thereto, (ii) act on, sign and file such certificates, instruments, agreements and other documents as may be necessary or appropriate in connection therewith, (iii) act on and file any supplement to any prospectus included in this registration statement or any such amendment or any subsequent registration statement filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended, and (iv) take any and all actions which may be necessary or appropriate in connection therewith, granting unto such agents, proxies and attorneys-in-fact or any of their substitutes and purposes as he might or could do in person, hereby approving, ratifying and confirming all that such agents, proxies and attorneys-in-fact or any of their substitutes may lawfully do or cause to be done by virtue thereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement and Power of Attorney have been signed on December 16, 2022, by the following persons in the capacities indicated.

| Signature | Title | Date | | | |
|--|---|-------------------|--|--|--|
| /s/ John Kovach John Kovach | Chief Executive Officer; Director (Principal Executive Officer) | December 16, 2022 | | | |
| /s/ Robert Weingarten Robert Weingarten | Chief Financial Officer (Principal Accounting Officer) | December 16, 2022 | | | |
| /s/ Stephen Forman Stephen Forman | Director | December 16, 2022 | | | |
| /s/ Yun Yen Yun Yen | Director | December 16, 2022 | | | |
| /s/ Regina Brown | Director | December 16, 2022 | | | |
| Regina Brown /s/ Rene Bernards | Director | December 16, 2022 | | | |
| Rene Bernards /s/ Bastiaan van der Baan | Director | December 16, 2022 | | | |
| Bastiaan van der Baan | | | | | |
| | 5 | | | | |

TroyGould PC 1801 Century Park East, Suite 1600 Los Angeles, California 90067

December 16, 2022

Lixte Biotechnology Holdings, Inc. 680 East Colorado Boulevard, Suite 180 Pasadena, California 91101

Registration Statement on Form S-8

Ladies and Gentlemen:

We have acted as counsel to Lixte Biotechnology Holdings, Inc., a Delaware corporation (the "Company"), in connection with the Registration Statement on Form S-8 (the "Registration Statement") of the Company, filed with the Securities and Exchange Commission pursuant to the Securities Act of 1933, as amended (the "Act"), and the rules and regulations thereunder (the "Rules"). You have asked us to furnish our opinion as to the legality of the securities being registered under the Registration Statement. The Registration Statement relates to the registration under the Act of an additional 1,800,000 shares of common stock, par value \$0.0001 per share, of the Company (collectively, the "Shares"), that are reserved for issuance under the Lixte Biotechnology Holdings, Inc. 2020 Stock Incentive Plan (the "2020 Incentive Plan").

In connection with the furnishing of this opinion, we have examined originals, or copies certified or otherwise identified to our satisfaction, of the following documents (collectively, the "<u>Documents</u>"):

- 1. the Registration Statement;
- 2. the 2020 Incentive Plan and the forms of award agreements (the 'Plan Agreements') relating to awards under the 2020 Incentive Plan;
- 3. the Certificate of Incorporation of the Company, as amended, included as Exhibit 3.1, 3.2 and 3.3 to the Registration Statement; and
- 4. the Amended and Restated Bylaws of the Company, included as Exhibit 3.4 to the Registration Statement.

In addition, we have examined (i) such corporate records of the Company that we have considered appropriate, including copies of resolutions of the board of directors of the Company and resolutions of the compensation committee of the board of directors of the Company, each relating to the issuance of the Shares, certified by the Company and (ii) such other certificates, agreements and documents that we deemed relevant and necessary as a basis for the opinion expressed below. We have also relied upon certificates of public officials and the officers of the Company.

In our examination of the documents referred to above, we have assumed, without independent investigation, the genuineness of all signatures, the legal capacity of all individuals who have executed any of the documents reviewed by us, the authenticity of all documents submitted to us as originals, the conformity to the originals of all documents submitted to us as certified, photostatic, reproduced or conformed copies of valid existing agreements or other documents, the authenticity of all the latter documents and that the statements regarding matters of fact in the certificates, records, agreements, instruments and documents that we have examined are accurate and complete.

Based upon the above, and subject to the stated assumptions, exceptions and qualifications, we are of the opinion that the Shares have been duly authorized by all necessary corporate action on the part of the Company and, when issued and delivered in accordance with the terms of the 2020 Incentive Plan and any applicable Plan Agreement under the 2020 Incentive Plan, the Shares will be validly issued, fully paid and non-assessable.

The opinion expressed above is limited to the General Corporation Law of the State of Delaware. Our opinion is rendered only with respect to the laws, and the rules, regulations and orders under those laws, that are currently in effect.

We hereby consent to use of this opinion as an exhibit to the Registration Statement. In giving this consent, we do not thereby admit that we come within the category of persons whose consent is required by the Act or the Rules.

Very truly yours,

/s/ TroyGould PC

TROYGOULD PC

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement on Form S-8 of our report dated March 21, 2022, with respect to the consolidated financial statements of Lixte Biotechnology Holdings, Inc. (the "Company") as of and for the years ended December 31, 2021 and 2020 (which report includes an explanatory paragraph regarding the existence of substantial doubt about the Company's ability to continue as a going concern), included in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2021.

/s/Weinberg & Company, P.A.

Los Angeles, California December 16, 2022

Calculation of Filing Fee Table

S-8 (Form Type)

Lixte Biotechnology Holdings, Inc.

(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered Securities

| Security | y Type | Security Class Title | Fee Calculation Rule | Amount Registered (1) | Proposed Maximum Offering Price Per Unit (3) | | Maximum Aggregate Offering Price | | Fee Rate | Amount of Registration Fee | |
|------------------------|---------------|--|--------------------------------|--------------------------|---|---------|--|---------|-----------|----------------------------------|--------|
| Equ | ity | Common stock, par value \$0.0001 per share | Rule 457(c) and Rule 457(h) | 1,800,000 shares (2) | \$ | 0.52255 | \$ | 940,590 | 0.0001102 | \$ | 103.65 |
| Total Offering Amounts | | | | | | \$ | 940,590 | | | | |
| Total Fee Offsets | | | | | | | | | \$ | | |
| Net Fee Due | | | | | | | | \$ | 103.65 | | |

- (1) Pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), this Registration Statement shall be deemed to cover any additional securities to be offered or issued from stock splits, stock dividends or similar transactions.
- (2) This Registration Statement on Form S-8 registers an additional 1,800,000 shares of Common Stock of Lixte Biotechnology Holdings, Inc. issuable under the Lixte Biotechnology Holdings, Inc. 2020 Stock Incentive Plan.
- (3) Pursuant to Rule 457(c) and Rule 457(h) under the Securities Act, the proposed maximum offering price per share was determined based on the average of the high and low prices of the shares of Common Stock of Lixte Biotechnology Holdings, Inc. as reported by The Nasdaq Capital Market on December 15, 2022.