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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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**Repare Therapeutics Inc.**  
(Exact name of Registrant as specified in its charter)

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

Not applicable  
(I.R.S. Employer  
Identification No.)

7210 Frederick-Banting, Suite 100  
St-Laurent, Québec, Canada  
(Address of Principal Executive Offices)

H4S 2A1  
(Zip Code)

**Repare Therapeutics 2020 Equity Incentive Plan**  
**Repare Therapeutics 2020 Employee Share Purchase Plan**  
(Full title of the plan)

**Lloyd M. Segal**  
Chief Executive Officer  
Repare Therapeutics Inc.  
1 Broadway, 15th Floor  
Cambridge, MA 02142  
+1 857 412 7018

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

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*Copies to:*

**Divakar Gupta**  
**Ryan S. Sansom**  
**Marc A. Recht**  
**Courtney Thorne**  
**Cooley LLP**  
500 Boylston Street  
Boston, Massachusetts 02116  
+1 617 937 2300

**Robert Carelli**  
**Stikeman Elliott LLP**  
1155 René-Lévesque Blvd. West  
41st Floor  
Montréal, Québec, Canada H3B 3V2  
+1 514 397 3222

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    

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 the Securities Act.    

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**CALCULATION OF REGISTRATION FEE**

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| Title of Securities<br>To Be Registered   | Amount<br>To Be<br>Registered <sup>(1)</sup> | Proposed<br>Maximum<br>Offering Price<br>Per Share | Proposed<br>Maximum<br>Aggregate<br>Offering Price | Amount of<br>Registration Fee |
|---|--|--|--|-------------------------------|
| <b>Common shares, no par value</b>        |  |  |  |                               |
| <b>—2020 Equity Incentive Plan</b>        | 1,845,146 <sup>(2)</sup>                     | \$28.79 <sup>(4)</sup>                             | \$53,121,754                                       | \$5,796                       |
| <b>—2020 Employee Share Purchase Plan</b> | 369,029 <sup>(3)</sup>                       | \$24.47 <sup>(5)</sup>                             | \$9,030,140  | \$985                         |
| <b>TOTAL</b>                              | 2,214,175                                    |  | \$62,151,894                                       | \$6,781                       |

- (1) Pursuant to Rule 416(a) under the Securities Act of 1933, as amended (the “Securities Act”), this Registration Statement shall also cover any additional common shares, no par value (the “Common Shares”), of the Registrant that become issuable under the 2020 Equity Incentive Plan (the “2020 Plan”) and 2020 Employee Share Purchase Plan (the “ESPP”) by reason of any share dividend, share split, recapitalization or any other similar transaction that results in an increase in the number of the Registrant’s outstanding Common Shares.
- (2) Represents an automatic annual increase equal to 5% of the total number of Common Shares outstanding on December 31 of the preceding year, which annual increase is provided by the 2020 Plan.
- (3) Represents an automatic annual increase equal to 1% of the total number of Common Shares outstanding on December 31 of the preceding year, which annual increase is provided by the ESPP.
- (4) Estimated in accordance with Rule 457(c) and (h) solely for the purpose of calculating the registration fee on the basis of the average of the high and low prices of the Registrant’s Common Shares as reported on the Nasdaq Global Select Market on March 30 2021.
- (5) Estimated in accordance with Rule 457(c) and (h) solely for the purpose of calculating the registration fee on the basis of the average of the high and low prices of the Registrant’s Common Shares as reported on the Nasdaq Global Select Market on March 30, 2021, multiplied by 85%, which is the percentage of the price per share applicable to purchases under the ESPP.

## REGISTRATION OF ADDITIONAL SHARES PURSUANT TO GENERAL INSTRUCTION E

Pursuant to General Instruction E of Form S-8, Repare Therapeutics Inc. (the “Registrant”) is filing this Registration Statement with the Securities and Exchange Commission (the “Commission”) to register (i) 1,845,146 additional common shares, no par value, of the Registrant (the “Common Shares”) under the 2020 Equity Incentive Plan (the “2020 Plan”), pursuant to the provisions of the 2020 Plan providing for an automatic increase in the number of Common Shares reserved and available for issuance under the 2020 Plan on January 1, 2021 and (ii) 369,029 additional Common Shares under the 2020 Employee Share Purchase Plan (the “ESPP”), pursuant to the provisions of the ESPP providing for an automatic increase in the number of Common Shares and available for issuance under the ESPP on January 1, 2021. In accordance with the instructional note to Part I of Form S-8 as promulgated by the Commission, the information specified by Part I of the Form S-8 has been omitted from this Registration Statement.

### PART II

#### ITEM 3. INCORPORATION OF DOCUMENTS BY REFERENCE

The following documents filed by the Registrant with the Commission are incorporated by reference into this Registration Statement:

- (a) The contents of the Registrant’s Registration Statement on [Form S-8](#) (File No. 333-239400), filed with the Commission on June 24, 2020.
- (b) The Registrant’s Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2020, filed with the Commission on March 4, 2021.
- (c) The description of the Registrant’s Common Shares which is contained in the Registrant’s Registration Statement on [Form 8-A](#) filed on June 16, 2020 (File No. 001-39335) under the Securities Exchange Act of 1934, as amended (the “*Exchange Act*”), including any amendment or report filed for the purpose of updating such description.

All documents, reports and definitive proxy or information statements filed by the Registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act (other than Current Reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits furnished on such form that relate to such items) on or after the date of this Registration Statement and prior to the filing of a post-effective amendment to this Registration Statement that indicates that all securities offered hereby have been sold or that deregisters all securities then remaining unsold shall be deemed to be incorporated by reference in this Registration Statement and to be 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 subsequently filed document that also 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.

**ITEM 8. EXHIBITS**

| Exhibit Number | Description  | Incorporated by Reference |             |         |               |
|----------------|--|---------------------------|-------------|---------|---------------|
|                |  | Schedule Form             | File Number | Exhibit | Filing Date   |
| 4.1            | <a href="#">Articles of Continuance of Repare Therapeutics Inc.</a>  | 8-K                       | 001-39335   | 3.1     | June 23, 2020 |
| 4.2            | <a href="#">Amended and Restated Bylaws of Repare Therapeutics Inc.</a>  | 8-K                       | 001-39335   | 3.2     | June 23, 2020 |
| 4.3            | <a href="#">Form of Common Share Certificate.</a>  | S-1/A                     | 333-238822  | 4.1     | June 15, 2020 |
| 5.1*           | <a href="#">Opinion of Stikeman Elliott LLP.</a>   |                           |             |         |               |
| 23.1*          | <a href="#">Consent of Ernst &amp; Young LLP, Independent Registered Public Accounting Firm.</a>   |                           |             |         |               |
| 23.2*          | <a href="#">Consent of Stikeman Elliott LLP (included in Exhibit 5.1).</a>   |                           |             |         |               |
| 24.1*          | <a href="#">Power of Attorney (included on the signature page of this Form S-8).</a>   |                           |             |         |               |
| 99.1           | <a href="#">2020 Equity Incentive Plan.</a>  | S-1/A                     | 333-238822  | 10.3    | June 15, 2020 |
| 99.2           | <a href="#">Form of Share Option Grant Notice and Share Option Agreement under the 2020 Equity Incentive Plan.</a>                         | S-1/A                     | 333-238822  | 10.4    | June 15, 2020 |
| 99.3           | <a href="#">Form of Restricted Share Unit Grant Notice and Restricted Share Unit Award Agreement under the 2020 Equity Incentive Plan.</a> | S-1/A                     | 333-238822  | 10.5    | June 15, 2020 |
| 99.4           | <a href="#">2020 Employee Share Purchase Plan.</a>   | S-1/A                     | 333-238822  | 10.6    | June 15, 2020 |

\* Filed herewith.

## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, 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 City of Montréal, Province of Québec, Canada, on this 5th day of April, 2021.

### REPARE THERAPEUTICS INC.

By: /s/ Lloyd M. Segal

Name: Lloyd M. Segal

Title: President and Chief Executive Officer

### POWER OF ATTORNEY

KNOW ALL BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Lloyd M. Segal and Steve Forte, and each of them, as his or her true and lawful attorneys-in-fact and agents, each with the full power of substitution, for him or her and in his or her name, place or stead, in any and all capacities, to sign any and all amendments to this Registration Statement (including post-effective amendments), and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, 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 agents, 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, as amended, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

| <u>Name</u>   | <u>Position</u>  | <u>Date</u>   |
|---|--|---------------|
| <u>/s/ Lloyd M. Segal</u><br>Lloyd M. Segal                   | President, Chief Executive Officer and Director ( <i>Principal Executive Officer</i> )                                       | April 5, 2021 |
| <u>/s/ Steve Forte</u><br>Steve Forte                         | Executive Vice President, Chief Financial Officer<br>( <i>Principal Financial Officer and Principal Accounting Officer</i> ) | April 5, 2021 |
| <u>/s/ Jerel Davis, Ph.D.</u><br>Jerel Davis, Ph.D.           | Chairman of the Board of Directors   | April 5, 2021 |
| <u>/s/ David Bonita, M.D.</u><br>David Bonita, M.D.           | Director   | April 5, 2021 |
| <u>/s/ Todd Foley</u><br>Todd Foley                           | Director   | April 5, 2021 |
| <u>/s/ Samarth Kulkarni, Ph.D.</u><br>Samarth Kulkarni, Ph.D. | Director   | April 5, 2021 |
| <u>/s/ Briggs Morrison, M.D.</u><br>Briggs Morrison, M.D.     | Director   | April 5, 2021 |

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/s/ Ann D. Rhoads

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Ann D. Rhoads

Director

April 5, 2021

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/s/ Carol A. Schafer

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Carol A. Schafer

Director

April 5, 2021

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**SIGNATURE OF AUTHORIZED U.S. REPRESENTATIVE OF THE REGISTRANT**

Pursuant to the Securities Act, the undersigned, the duly authorized representative in the United States of the registrant has signed this registration statement or amendment thereto on the 5th day of April, 2021.

**REPARE THERAPEUTICS USA INC.**

By: /s/ Lloyd M. Segal

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Lloyd M. Segal

President and Chief Executive Officer

April 5, 2021

**Repare Therapeutics Inc.**

7210 Frederick-Banting Street, Suite 100  
Saint-Laurent, Québec  
H4S 2A1

Dear Sirs/Mesdames:

**Re: Repare Therapeutics Inc.—Registration Statement on Form S-8**

We have acted as Canadian counsel to Repare Therapeutics Inc. (the “**Corporation**”), a corporation governed on the date of this opinion by the *Business Corporations Act* (Québec), in connection with the registration of 2,214,175 common shares of the Corporation, consisting of: (i) 1,845,146 common shares of the Corporation (the “**2020 Plan Shares**”) issuable pursuant to the Corporation’s 2020 Equity Incentive Plan (the “**2020 Plan**”) and (ii) 369,029 common shares of the Corporation (the “**ESPP Shares**” and, collectively with the 2020 Plan Shares, the “**Shares**”) issuable pursuant to the Corporation’s 2020 Employee Share Purchase Plan (the “**ESPP**” and, collectively with the 2020 Plan, the “**Incentive Plans**”), pursuant to a Registration Statement on Form S-8 (the “**Registration Statement**”) filed on April 5, 2021 with the Securities and Exchange Commission under the Securities Act of 1933, as amended.

We have examined the Registration Statement, the Incentive Plans and all such corporate and public records, statutes and regulations and have made such investigations and have reviewed such other documents as we have deemed relevant and necessary and have considered such questions of law as we have considered relevant and necessary in order to give the opinion hereinafter set forth. As to various questions of fact material to such opinions which were not independently established, we have relied upon a certificate of an officer of the Corporation.

In reviewing the foregoing documents and in giving this opinion, we have assumed the legal capacity of all individuals, the genuineness of all signatures, the veracity of the information contained therein, the authenticity of all documents submitted to us as originals and the conformity to authentic or original documents of all documents submitted to us as certified, conformed, electronic, photostatic or facsimile copies.

We are qualified to practice law in the Province of Québec and this opinion is rendered solely with respect to the Province of Québec and the federal laws of Canada applicable in the Province of Québec. This opinion is expressed with respect to the laws in effect on the date of this opinion and we do not accept any responsibility to take into account or inform the addressee, or any other person authorized to rely on this opinion, of any changes in law, facts or other developments subsequent to this date that do or may affect the opinion we express.

Based upon and subject to the foregoing, and subject to the qualifications, assumptions and limitations stated herein, we are of the opinion that, when the Shares shall have been issued pursuant to and in accordance with the terms of the Incentive Plans, the Shares will be validly issued, fully paid and non-assessable.

Where this opinion refers to any of the Shares as being issued as being “fully paid and non-assessable”, such opinion assumes that all required consideration (in whatever form) has been paid or provided.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement. This opinion may not be quoted from or referred to in any documents other than the Registration Statement as provided for herein without our prior written consent.

Yours very truly,

/s/ Stikeman Elliott LLP

Stikeman Elliott LLP



**Consent of Independent Registered Public Accounting Firm**

We consent to the incorporation by reference in the Registration Statement (Form S-8) pertaining to the Repare Therapeutics 2020 Equity Incentive Plan and the Repare Therapeutics 2020 Employee Share Purchase Plan of our report dated March 4, 2021, with respect to the consolidated financial statements of Repare Therapeutics Inc. included in its Annual Report (Form 10-K) for the year ended December 31, 2020, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Montreal, Canada  
April 5, 2021