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

SCHEDULE 13G

INFORMATION TO BE INCLUDED IN STATEMENTS PURSUANT TO RULES 13d-1(b),(c) AND (d) AND AMENDMENTS THERETO FILED PURSUANT TO 13d-2 UNDER THE SECURITIES EXCHANGE ACT OF 1934*

(Amendment No. 2)

Adaptive Biotechnologies Corporation

(Name of Issuer)

Common stock

(Title of Class of Securities)

00650F109

(CUSIP Number)

December 31, 2021

(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- Rule 13d-1(b)
 Rule 13d-1(c)
 Rule 13d-1(d)

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

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

1	NAMES OF REPORTING PERSONS Viking Global Investors LP	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER 0
	6	SHARED VOTING POWER 29,993,708
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 29,993,708
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 29,993,708	
10	CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)* <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 21.3%	
12	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) PN	

1	NAMES OF REPORTING PERSONS Viking Global Performance LLC	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER 0
	6	SHARED VOTING POWER 22,002,189
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 22,002,189
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 22,002,189	
10	CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)* <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 15.6%	
12	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) OO	

1	NAMES OF REPORTING PERSONS Viking Global Equities II LP	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER 0
	6	SHARED VOTING POWER 440,046
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 440,046
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 440,046	
10	CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)* <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 0.3%	
12	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) PN	

1	NAMES OF REPORTING PERSONS Viking Global Equities Master Ltd.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION Cayman Islands	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER 0
	6	SHARED VOTING POWER 21,562,143
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 21,562,143
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 21,562,143	
10	CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)* <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 15.3%	
12	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) CO	

1	NAMES OF REPORTING PERSONS Viking Long Fund GP LLC	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER 0
	6	SHARED VOTING POWER 7,991,519
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 7,991,519
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 7,991,519	
10	CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)* <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 5.7%	
12	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) OO	

1	NAMES OF REPORTING PERSONS Viking Long Fund Master Ltd.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION Cayman Islands	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER 0
	6	SHARED VOTING POWER 7,991,519
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 7,991,519
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 7,991,519	
10	CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)* <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 5.7%	
12	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) CO	

1	NAMES OF REPORTING PERSONS O. Andreas Halvorsen	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION Norway	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER 0
	6	SHARED VOTING POWER 29,993,708
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 29,993,708
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 29,993,708	
10	CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)* <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 21.3%	
12	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN	

1	NAMES OF REPORTING PERSONS David C. Ott	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER 0
	6	SHARED VOTING POWER 29,993,708
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 29,993,708
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 29,993,708	
10	CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)* <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 21.3%	
12	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN	

1	NAMES OF REPORTING PERSONS Rose S. Shabet	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER 0
	6	SHARED VOTING POWER 29,993,708
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 29,993,708
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 29,993,708	
10	CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)* <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 21.3%	
12	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN	

Item 1(a). Name of Issuer:

Adaptive Biotechnologies Corporation

Item 1(b). Address of Issuer's Principal Executive Offices:

1165 Eastlake Avenue East
Seattle, Washington 98109

Item 2(a). Name of Person Filing:

Viking Global Investors LP ("VGI"),
Viking Global Performance LLC ("VGP"),
Viking Global Equities II LP ("VGEII"),
Viking Global Equities Master Ltd. ("VGEM"),
Viking Long Fund GP LLC ("VLFGP"),
Viking Long Fund Master Ltd. ("VLFM"),
O. Andreas Halvorsen, David C. Ott and Rose S. Shabet (collectively, the "Reporting Persons")

Items 2(b). Address of Principal Business Office or, if none, Residence:

The business address of each of the Reporting Persons is: 55 Railroad Avenue, Greenwich, Connecticut 06830.

Items 2(c). Citizenship:

VGI and VGEII are Delaware limited partnerships; VGP and VLFGP are Delaware limited liability companies; VGEM and VLFM are Cayman Islands exempted companies; O. Andreas Halvorsen is a citizen of Norway; and David C. Ott and Rose S. Shabet are citizens of the United States.

Item 2(d). Titles of Classes of Securities:

Common stock ("Common Stock")

Item 2(e). CUSIP NUMBER: 00650F109

Item 3. If This Statement is Filed Pursuant to Rule 13d-1(b), or 13d-2(b) or (c), Check Whether the Person Filing is a:

- (a) Broker or dealer registered under Section 15 of the Exchange Act
 - (b) Bank as defined in Section 3(a)(6) of the Exchange Act
 - (c) Insurance company as defined in Section 3(a)(19) of the Exchange Act
 - (d) Investment company registered under Section 8 of the Investment Company Act of 1940
 - (e) Investment Adviser registered under Section 203 of the Investment Advisers Act of 1940: see Rule 13d-1(b)(1)(ii)(E)
 - (f) Employee Benefit Plan, Pension Fund which is subject to the provisions of the Employee Retirement Income Security Act of 1974 or Endowment Fund; see Rule 13d-1(b)(1)(ii)(F)
 - (g) Parent holding company, in accordance with Rule 13d-1(b)(1)(ii)(G).
 - (h) Savings Association as defined in Section 3(b) of the Federal Deposit Insurance Act.
 - (i) Church Plan that is excluded from the definition of an investment company under Section 3(c)(14) of the Investment Company Act of 1940.
 - (j) Non-U.S. institution in accordance with Rule 240.13d-1(b)(1)(ii)(J). If filing as a non-U.S. institution in accordance with Rule 240.13d-1(b)(1)(ii)(J), please specify the type of institution:
 - (k) Group, in accordance with Rule 240.13d-1(b)(1)(ii)(K).
-

Item 4. Ownership

The percentages set forth herein are based on 141,131,844 shares of Common Stock outstanding as of October 29, 2021, as reported by the Issuer in its quarterly report on Form 10-Q, filed with the U.S. Securities and Exchange Commission (the "Commission") on November 3, 2021

A. VGI

- (a) Amount beneficially owned: 29,993,708
- (b) Percent of Class: 21.3%
- (c) Number of shares as to which such person has:
 - (i) Sole power to vote or to direct the vote: 0
 - (ii) Shared power to vote or to direct the vote: 29,993,708
 - (iii) Sole power to dispose or to direct the disposition of: 0
 - (iv) Shared power to dispose or to direct the disposition of: 29,993,708

VGI provides managerial services to VGEII, VGEM and VLFM. VGI has the authority to dispose of and vote the shares of Common Stock directly owned by VGEII, VGEM and VLFM. VGI does not directly own any shares of Common Stock.

Based on Rule 13d-3 of the Securities Exchange Act of 1934, as amended (the "Act"), VGI may be deemed to beneficially own the shares of Common Stock directly held by VGEII, VGEM and VLFM.

VGI beneficially owns 29,993,708 shares of Common Stock consisting of (i) 440,046 shares of Common Stock directly and beneficially owned by VGEII, (ii) 21,562,143 shares of Common Stock directly and beneficially owned by VGEM and (iii) 7,991,519 shares of Common Stock directly and beneficially owned by VLFM.

B. VGP

- (a) Amount beneficially owned: 22,002,189
- (b) Percent of Class: 15.6%
- (c) Number of shares as to which such person has:
 - (i) Sole power to vote or to direct the vote: 0
 - (ii) Shared power to vote or to direct the vote: 22,002,189
 - (iii) Sole power to dispose or to direct the disposition of: 0
 - (iv) Shared power to dispose or to direct the disposition of: 22,002,189

VGP, as the general partner of VGEII, has the authority to dispose of and vote the shares of Common Stock directly owned by VGEII. VGP serves as investment manager to VGEM and has the authority to dispose of and vote the shares of Common Stock directly owned by VGEM. VGP does not directly own any shares of Common Stock.

Based on Rule 13d-3 of the Act, VGP may be deemed to beneficially own the shares of Common Stock directly held by VGEII and VGEM.

VGP beneficially owns 22,002,189 of Common Stock consisting of (i) 440,046 shares of Common Stock directly and beneficially owned by VGEII and (ii) 21,562,143 shares of Common Stock directly and beneficially owned by VGEM.

C. VGEII

- (a) Amount beneficially owned: 440,046
- (b) Percent of Class: 0.3%
- (c) Number of shares as to which such person has:
 - (i) Sole power to vote or to direct the vote: 0
 - (ii) Shared power to vote or to direct the vote: 440,046
 - (iii) Sole power to dispose or to direct the disposition of: 0
 - (iv) Shared power to dispose or to direct the disposition of: 440,046

VGEII has the authority to dispose of and vote the shares of Common Stock directly owned by it, which power may be exercised by its general partner, VGP, and by VGI, an affiliate of VGP, which provides managerial services to VGEII.

D. VGEM

- (a) Amount beneficially owned: 21,562,143
- (b) Percent of Class: 15.3%
- (c) Number of shares as to which such person has:
 - (i) Sole power to vote or to direct the vote: 0
 - (ii) Shared power to vote or to direct the vote: 21,562,143
 - (iii) Sole power to dispose or to direct the disposition of: 0
 - (iv) Shared power to dispose or to direct the disposition of: 21,562,143

VGEM has the authority to dispose of and vote the shares of Common Stock directly owned by it, which power may be exercised by its investment manager, VGP, and by VGI, an affiliate of VGP, which provides managerial services to VGEM. Viking Global Equities LP (a Delaware limited partnership) and Viking Global Equities III Ltd. (a Cayman Islands exempted company), through its investment in VGE III Portfolio Ltd. (a Cayman Islands exempted company), invest substantially all of their assets through VGEM.

E. VLFGP

- (a) Amount beneficially owned: 7,991,519
- (b) Percent of Class: 5.7%
- (c) Number of shares as to which such person has:
 - (i) Sole power to vote or to direct the vote: 0
 - (ii) Shared power to vote or to direct the vote: 7,991,519
 - (iii) Sole power to dispose or to direct the disposition of: 0
 - (iv) Shared power to dispose or to direct the disposition of: 7,991,519

VLFGP serves as the investment manager of VLFM and has the authority to dispose of and vote the shares of Common Stock directly owned by VLFM. VLFGP does not directly own any shares of Common Stock.

Based on Rule 13d-3 of the Act, VLFGP may be deemed to beneficially own the shares of Common Stock directly held by VLFM.

F. VLFM

- (a) Amount beneficially owned: 7,991,519
- (b) Percent of Class: 5.7%
- (c) Number of shares as to which such person has:
 - (i) Sole power to vote or to direct the vote: 0
 - (ii) Shared power to vote or to direct the vote: 7,991,519
 - (iii) Sole power to dispose or to direct the disposition of: 0
 - (iv) Shared power to dispose or to direct the disposition of: 7,991,519

VLFM has the authority to dispose of and vote the shares of Common Stock directly owned by it, which power may be exercised by its investment manager, VLFGP, and by VGI, an affiliate of VLFGP, which provides managerial services to VLFM. Viking Long Fund LP (a Delaware limited partnership) and Viking Long Fund III Ltd. (a Cayman Islands exempted company), through its investment in Viking Long Fund Intermediate L.P. (a Cayman Islands limited partnership), invest substantially all of their assets through VLFM.

G. O. Andreas Halvorsen, David C. Ott and Rose S. Shabet

- (a) Amount beneficially owned: 29,993,708
- (b) Percent of Class: 21.3%
- (c) Number of shares as to which such person has:
 - (i) Sole power to vote or to direct the vote: 0
 - (ii) Shared power to vote or to direct the vote: 29,993,708
 - (iii) Sole power to dispose or to direct the disposition of: 0
 - (iv) Shared power to dispose or to direct the disposition of: 29,993,708

Mr. Halvorsen, Mr. Ott and Ms. Shabet, as Executive Committee Members of Viking Global Partners LLC (general partner of VGI), VGP and VLFGP have shared authority to dispose of and vote the shares of Common Stock beneficially owned by VGI, VGP and VLFGP. None of Mr. Halvorsen, Mr. Ott and Ms. Shabet directly owns any shares of Common Stock.

Based on Rule 13d-3 of the Act, each may be deemed to beneficially own the shares of Common Stock directly held by VGEII, VGEM and VLFM.

Mr. Halvorsen, Mr. Ott and Ms. Shabet each beneficially own 29,993,708 shares of Common Stock consisting of (i) 440,046 shares of Common Stock directly and beneficially owned by VGEII, (ii) 21,562,143 shares of Common Stock directly and beneficially owned by VGEM and (iii) 7,991,519 shares of Common Stock directly and beneficially owned by VLFM.

Item 5. Ownership of Five Percent or Less of a Class.

If this statement is being filed to report the fact that as of the date hereof the Reporting Persons have ceased to be the beneficial owner of more than five percent of the class of securities, check the following [].

Item 6. Ownership of More than Five Percent on Behalf of Another Person.

The response to Item 4 is incorporated by reference herein

Item 7. Identification and Classification of the Subsidiary Which Acquired the Security.

Being Reported on by the Parent Holding Company.

Not applicable

Item 8. Identification and Classification of Members of the Group.

Not applicable.

Item 9. Notice of Dissolution of Group.

Not applicable

Item 10. Certification. (if filing pursuant to Rule 13d-1(c))

By signing below each Reporting Person certifies that, to the best of its knowledge and belief, the securities referred to above were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and not held in connection with or as a participant in any transaction having that purpose or effect.

SIGNATURES

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

Dated: February 14, 2022

By: /s/ Scott M. Hendler

Name: Scott M. Hendler on behalf of O. Andreas Halvorsen (1)

By: /s/ Scott M. Hendler

Name: Scott M. Hendler on behalf of David C. Ott (2)

By: /s/ Scott M. Hendler

Name: Scott M. Hendler on behalf of Rose S. Shabet (3)

(1) Scott M. Hendler is signing on behalf of O. Andreas Halvorsen, individually and as an Executive Committee Member of VIKING GLOBAL PARTNERS LLC, on behalf of VIKING GLOBAL INVESTORS LP, and as an Executive Committee Member of VIKING GLOBAL PERFORMANCE LLC, on behalf of itself and VIKING GLOBAL EQUITIES II LP and VIKING GLOBAL EQUITIES MASTER LTD., and as an Executive Committee Member of VIKING LONG FUND GP LLC, on behalf of itself and VIKING LONG FUND MASTER LTD, pursuant to an authorization and designation letter dated February 9, 2021, which was previously filed with the Commission as an exhibit to a Form 13G filed by Mr. Halvorsen on February 12, 2021 (SEC File No. 005-49737).

(2) Scott M. Hendler is signing on behalf of David C. Ott, individually and as an Executive Committee Member of VIKING GLOBAL PARTNERS LLC, on behalf of VIKING GLOBAL INVESTORS LP, and as an Executive Committee Member of VIKING GLOBAL PERFORMANCE LLC, on behalf of itself and VIKING GLOBAL EQUITIES II LP and VIKING GLOBAL EQUITIES MASTER LTD., and as an Executive Committee Member of VIKING LONG FUND GP LLC, on behalf of itself and VIKING LONG FUND MASTER LTD, pursuant to an authorization and designation letter dated February 9, 2021, which was previously filed with the Commission as an exhibit to a Form 13G filed by Mr. Ott on February 12, 2021 (SEC File No. 005-49737).

(3) Scott M. Hendler is signing on behalf of Rose S. Shabet, individually and as an Executive Committee Member of VIKING GLOBAL PARTNERS LLC, on behalf of VIKING GLOBAL INVESTORS LP, and as an Executive Committee Member of VIKING GLOBAL PERFORMANCE LLC, on behalf of itself and VIKING GLOBAL EQUITIES II LP and VIKING GLOBAL EQUITIES MASTER LTD., and as an Executive Committee Member of VIKING LONG FUND GP LLC, on behalf of itself and VIKING LONG FUND MASTER LTD, pursuant to an authorization and designation letter dated February 9, 2021, which was previously filed with the Commission as an exhibit to a Form 13G filed by Ms. Shabet on February 12, 2021 (SEC File No. 005-49737).

EXHIBIT A - JOINT FILING AGREEMENT

This joint filing agreement is made and entered into as of this 14th day of February, 2022, by and among Viking Global Investors LP, Viking Global Performance LLC, Viking Global Equities II LP, Viking Global Equities Master LTD., Viking Long Fund GP LLC, Viking Long Fund Master LTD., O. Andreas Halvorsen, David C. Ott and Rose S. Shabet.

The parties to this Agreement hereby agree to prepare jointly and file timely (and otherwise to deliver as appropriate) all filings on any Forms 3, 4, or 5 or Schedules 13D or 13G, and any and all amendments thereto and any other documents relating thereto (collectively, the "Filings") as required to be filed pursuant to the Securities Exchange Act of 1934, as amended. The parties to this Agreement further agree and covenant that each will fully cooperate with such other parties in the preparation, timely filing, and delivery of all such Filings.

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the date first set forth above.

Dated: February 14, 2022

By: /s/ Scott M. Hendler

Name: Scott M. Hendler on behalf of O. Andreas Halvorsen (1)

By: /s/ Scott M. Hendler

Name: Scott M. Hendler on behalf of David C. Ott (2)

By: /s/ Scott M. Hendler

Name: Scott M. Hendler on behalf of Rose S. Shabet (3)

(1) Scott M. Hendler is signing on behalf of O. Andreas Halvorsen, individually and as an Executive Committee Member of VIKING GLOBAL PARTNERS LLC, on behalf of VIKING GLOBAL INVESTORS LP, and as an Executive Committee Member of VIKING GLOBAL PERFORMANCE LLC, on behalf of itself and VIKING GLOBAL EQUITIES II LP and VIKING GLOBAL EQUITIES MASTER LTD., and as an Executive Committee Member of VIKING LONG FUND GP LLC, on behalf of itself and VIKING LONG FUND MASTER LTD, pursuant to an authorization and designation letter dated February 9, 2021, which was previously filed with the Commission as an exhibit to a Form 13G filed by Mr. Halvorsen on February 12, 2021 (SEC File No. 005-49737).

(2) Scott M. Hendler is signing on behalf of David C. Ott, individually and as an Executive Committee Member of VIKING GLOBAL PARTNERS LLC, on behalf of VIKING GLOBAL INVESTORS LP, and as an Executive Committee Member of VIKING GLOBAL PERFORMANCE LLC, on behalf of itself and VIKING GLOBAL EQUITIES II LP and VIKING GLOBAL EQUITIES MASTER LTD., and as an Executive Committee Member of VIKING LONG FUND GP LLC, on behalf of itself and VIKING LONG FUND MASTER LTD, pursuant to an authorization and designation letter dated February 9, 2021, which was previously filed with the Commission as an exhibit to a Form 13G filed by Mr. Ott on February 12, 2021 (SEC File No. 005-49737).

(3) Scott M. Hendler is signing on behalf of Rose S. Shabet, individually and as an Executive Committee Member of VIKING GLOBAL PARTNERS LLC, on behalf of VIKING GLOBAL INVESTORS LP, and as an Executive Committee Member of VIKING GLOBAL PERFORMANCE LLC, on behalf of itself and VIKING GLOBAL EQUITIES II LP and VIKING GLOBAL EQUITIES MASTER LTD., and as an Executive Committee Member of VIKING LONG FUND GP LLC, on behalf of itself and VIKING LONG FUND MASTER LTD, pursuant to an authorization and designation letter dated February 9, 2021, which was previously filed with the Commission as an exhibit to a Form 13G filed by Ms. Shabet on February 12, 2021 (SEC File No. 005-49737).
