
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE 13D

**Under the Securities Exchange Act of 1934
(Amendment No. 1)***

Spruce Biosciences, Inc.

(Name of Issuer)

Common Stock, par value \$0.0001 per share
(Title of Class of Securities)

85209E109
(CUSIP Number)

**Jeffrey Ferguson
The Carlyle Group
1001 Pennsylvania Avenue, NW
Suite 220 South
Washington, D.C. 20004
(202) 729-5626**

(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)

August 1, 2022
(Date of Event Which Requires Filing of This Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of Rule 13d-1(e), Rule 13d-1(f) or Rule 13d-1(g), check the following box.

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See Rule 13d-7(b) for other parties to whom copies are to be sent.

* 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 on 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 The Carlyle Group Inc.	
2	Check the Appropriate Box if a Member of a Group (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC Use Only	
4	Source of Funds (See Instructions) OO	
5	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e) <input type="checkbox"/>	
6	Citizenship or Place of Organization Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	Sole Voting Power 0
	8	Shared Voting Power 1,802,518
	9	Sole Dispositive Power 0
	10	Shared Dispositive Power 1,802,518
11	Aggregate Amount Beneficially Owned by Each Reporting Person 1,802,518	
12	Check if the Aggregate Amount in Row (11) Excludes Certain Shares <input type="checkbox"/>	
13	Percent of Class Represented by Amount in Row (11) 7.7%	
14	Type of Reporting Person CO	

1	Names of Reporting Persons Carlyle Holdings I GP Inc.	
2	Check the Appropriate Box if a Member of a Group (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC Use Only	
4	Source of Funds (See Instructions) OO	
5	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e) <input type="checkbox"/>	
6	Citizenship or Place of Organization Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	Sole Voting Power 0
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12	Check if the Aggregate Amount in Row (11) Excludes Certain Shares <input type="checkbox"/>	
13	Percent of Class Represented by Amount in Row (11) 7.7%	
14	Type of Reporting Person CO	

1	Names of Reporting Persons Carlyle Holdings I GP Sub L.L.C.	
2	Check the Appropriate Box if a Member of a Group (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC Use Only	
4	Source of Funds (See Instructions) OO	
5	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e) <input type="checkbox"/>	
6	Citizenship or Place of Organization Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	Sole Voting Power 0
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	9	Sole Dispositive Power 0
	10	Shared Dispositive Power 1,802,518
11	Aggregate Amount Beneficially Owned by Each Reporting Person 1,802,518	
12	Check if the Aggregate Amount in Row (11) Excludes Certain Shares <input type="checkbox"/>	
13	Percent of Class Represented by Amount in Row (11) 7.7%	
14	Type of Reporting Person OO (Limited Liability Company)	

1	Names of Reporting Persons Carlyle Holdings I L.P.	
2	Check the Appropriate Box if a Member of a Group (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC Use Only	
4	Source of Funds (See Instructions) OO	
5	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e) <input type="checkbox"/>	
6	Citizenship or Place of Organization Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	Sole Voting Power 0
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	9	Sole Dispositive Power 0
	10	Shared Dispositive Power 1,802,518
11	Aggregate Amount Beneficially Owned by Each Reporting Person 1,802,518	
12	Check if the Aggregate Amount in Row (11) Excludes Certain Shares <input type="checkbox"/>	
13	Percent of Class Represented by Amount in Row (11) 7.7%	
14	Type of Reporting Person PN	

1	Names of Reporting Persons CG Subsidiary Holdings L.L.C.	
2	Check the Appropriate Box if a Member of a Group (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC Use Only	
4	Source of Funds (See Instructions) OO	
5	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e) <input type="checkbox"/>	
6	Citizenship or Place of Organization Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	Sole Voting Power 0
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	9	Sole Dispositive Power 0
	10	Shared Dispositive Power 1,802,518
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12	Check if the Aggregate Amount in Row (11) Excludes Certain Shares <input type="checkbox"/>	
13	Percent of Class Represented by Amount in Row (11) 7.7%	
14	Type of Reporting Person OO (Limited Liability Company)	

1	Names of Reporting Persons TC Group, L.L.C.	
2	Check the Appropriate Box if a Member of a Group (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC Use Only	
4	Source of Funds (See Instructions) OO	
5	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e) <input type="checkbox"/>	
6	Citizenship or Place of Organization Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	Sole Voting Power 0
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	9	Sole Dispositive Power 0
	10	Shared Dispositive Power 1,802,518
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13	Percent of Class Represented by Amount in Row (11) 7.7%	
14	Type of Reporting Person OO (Limited Liability Company)	

1	Names of Reporting Persons Carlyle Investment Management L.L.C.	
2	Check the Appropriate Box if a Member of a Group (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC Use Only	
4	Source of Funds (See Instructions) OO	
5	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e) <input type="checkbox"/>	
6	Citizenship or Place of Organization Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	Sole Voting Power 0
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12	Check if the Aggregate Amount in Row (11) Excludes Certain Shares <input type="checkbox"/>	
13	Percent of Class Represented by Amount in Row (11) 7.7%	
14	Type of Reporting Person OO (Limited Liability Company)	

1	Names of Reporting Persons Carlyle Genesis UK LLC	
2	Check the Appropriate Box if a Member of a Group (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC Use Only	
4	Source of Funds (See Instructions) OO	
5	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e) <input type="checkbox"/>	
6	Citizenship or Place of Organization Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	Sole Voting Power 0
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	9	Sole Dispositive Power 0
	10	Shared Dispositive Power 1,802,518
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12	Check if the Aggregate Amount in Row (11) Excludes Certain Shares <input type="checkbox"/>	
13	Percent of Class Represented by Amount in Row (11) 7.7%	
14	Type of Reporting Person OO (Limited Liability Company)	

1	Names of Reporting Persons Abingworth LLP	
2	Check the Appropriate Box if a Member of a Group (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC Use Only	
4	Source of Funds (See Instructions) OO	
5	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e) <input type="checkbox"/>	
6	Citizenship or Place of Organization England and Wales	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	Sole Voting Power 0
	8	Shared Voting Power 1,802,518
	9	Sole Dispositive Power 0
	10	Shared Dispositive Power 1,802,518
11	Aggregate Amount Beneficially Owned by Each Reporting Person 1,802,518	
12	Check if the Aggregate Amount in Row (11) Excludes Certain Shares <input type="checkbox"/>	
13	Percent of Class Represented by Amount in Row (11) 7.7%	
14	Type of Reporting Person PN	

1	Names of Reporting Persons Abingworth Bioventures VII LP	
2	Check the Appropriate Box if a Member of a Group (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC Use Only	
4	Source of Funds (See Instructions) OO	
5	Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e) <input type="checkbox"/>	
6	Citizenship or Place of Organization England and Wales	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	Sole Voting Power 0
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13	Percent of Class Represented by Amount in Row (11) 7.7%	
14	Type of Reporting Person PN	

Explanatory Note

This Amendment No. 1 to Schedule 13D (“Amendment No. 1”) amends and supplements the Schedule 13D originally filed with the United States Securities and Exchange Commission on October 16, 2020 (as amended to date, the “Schedule 13D”), relating to the shares of common stock, par value \$0.0001 per share (the “Common Stock”), of Spruce Biosciences, Inc., a Delaware corporation (the “Issuer”). Capitalized terms used herein without definition shall have the meanings set forth in the Schedule 13D.

Prior to the Acquisition (as defined below), Schedule 13D reports were filed by Abingworth LLP. This Amendment No. 1 and future Schedule 13D reports will be filed by The Carlyle Group Inc.

Item 2. Identity and Background.

Item 2 of the Schedule 13D is hereby amended and restated in its entirety as follows:

The Schedule 13D is being filed by the following persons (each a “Reporting Person” and, collectively, the “Reporting Persons”):

The Carlyle Group Inc.
Carlyle Holdings I GP Inc.
Carlyle Holdings I GP Sub L.L.C.
Carlyle Holdings I L.P.
CG Subsidiary Holdings L.L.C.
TC Group, L.L.C.
Carlyle Investment Management L.L.C.
Carlyle Genesis UK LLC
Abingworth LLP
Abingworth Bioventures VII LP

Each of Abingworth LLP and Abingworth Bioventures VII LP is organized under the laws of England and Wales. Each of the other Reporting Persons is organized under the laws of the State of Delaware.

The address of each of Abingworth LLP and Abingworth Bioventures VII LP is 38 Jermyn Street, London, SW1Y 6DN, England, United Kingdom. The address of each of the other Reporting Persons is c/o The Carlyle Group, 1001 Pennsylvania Ave. NW, Suite 220 South, Washington, DC 20004-2505. Each of the Reporting Persons is principally engaged in the business of investing in securities.

The directors of The Carlyle Group Inc. are Peter J. Clare, Daniel A. D’Aniello, David M. Rubenstein, William E. Conway, Jr., Linda H. Filler, Lawton W. Fitt, James H. Hance, Jr., Mark S. Ordan, Derica W. Rice, Dr. Thomas S. Robertson, William J. Shaw and Anthony Welters (collectively, the “Directors”).

The executive officers of The Carlyle Group Inc. are William E. Conway, Jr., Interim Chief Executive Officer, Curtis L. Buser, Chief Financial Officer, Peter J. Clare, Chief Investment Officer for Corporate Private Equity and Chairman of Americas Private Equity, Jeffrey W. Ferguson, General Counsel, Christopher Finn, Chief Operating Officer and Bruce M. Larson, Chief Human Resources Officer (collectively, the “Executive Officers,” and, together with the Directors, the “Related Persons”).

Each of the Related Persons is a citizen of the United States. The business address of each of the Related Persons is c/o The Carlyle Group, 1001 Pennsylvania Ave. NW, Suite 220 South, Washington, DC 20004-2505.

The present principal occupation of each of the Directors is as follows: Linda H. Filler is the retired President of Retail Products, Chief Marketing Officer, and Chief Merchandising Officer at Walgreen Co.; Lawton W. Fitt is an independent investment banking professional; James H. Hance, Jr. is an Operating Executive of The Carlyle Group; Mark S. Ordan is Chief Executive Officer of Mednax; Derica W. Rice was the Executive Vice President of CVS Health and President of CVS Caremark, the pharmacy benefits management business of CVS Health, until February 2020; Dr. Thomas S. Robertson is the Joshua J. Harris Professor of Marketing at the Wharton School of the University of Pennsylvania; William J. Shaw was the Vice Chairman of Marriott International, Inc. until his retirement in March 2011; Anthony Welters is Founder, Chairman and CEO of CINQ Care Inc. and Executive Chairman of the BlackIvy Group, LLC; Peter J. Clare is the Chief Investment Officer for Corporate Private Equity and Chairman of Americas Private Equity of The Carlyle Group; Daniel A. D’Aniello is a Co-Founder and Non-Executive Chairman Emeritus of The Carlyle Group; David M. Rubenstein is a Co-Founder and Non-Executive Co-Chairman of The Carlyle Group; and William E. Conway, Jr. is a Co-Founder, Non-Executive Co-Chairman and Interim Chief Executive Officer of The Carlyle Group.

During the last five years, none of the Reporting Persons or Related Persons (i) has been convicted in any criminal proceeding (excluding traffic violations or similar misdemeanors) or (ii) was a party to a civil proceeding of a judicial or administrative body of competent jurisdiction and as a result of such proceeding was or is subject to a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws.

Item 4. Purpose of Transaction.

Item 4 of the Schedule 13D is hereby amended and supplemented as follows:

Acquisition of Abingworth

On August 1, 2022, entities affiliated with The Carlyle Group Inc. acquired Abingworth LLP (the “Acquisition”). Following the Acquisition, Carlyle Genesis UK LLC became the principal member of Abingworth LLP, and as such, may be deemed to beneficially own all securities beneficially owned by Abingworth LLP.

General

The Reporting Persons acquired the securities described in this Schedule 13D for investment purposes and intend to review their investments in the Issuer on a continuing basis. Any actions the Reporting Persons might undertake may be made at any time and from time to time without prior notice and will be dependent upon the Reporting Persons' review of numerous factors, including, but not limited to: an ongoing evaluation of the Issuer's business, financial condition, operations and prospects; price levels of the Issuer's securities; general market, industry and economic conditions; the relative attractiveness of alternative business and investment opportunities; and other future developments.

The Reporting Persons may acquire additional securities of the Issuer, or retain or sell all or a portion of the securities then held, in the open market or in privately negotiated transactions. In addition, the Reporting Persons may engage in discussions with management, the board of directors of the Issuer, and other securityholders of the Issuer and other relevant parties or encourage, cause or seek to cause the Issuer or such persons to consider or explore extraordinary corporate transactions, such as: a merger, reorganization or take-private transaction that could result in the de-listing or de-registration of the Common Stock; sales or acquisitions of assets or businesses; changes to the capitalization or dividend policy of the Issuer; or other material changes to the Issuer's business or corporate structure, including changes in management or the composition of the board of directors. To facilitate their consideration of such matters, the Reporting Persons may retain consultants and advisors and may enter into discussions with potential sources of capital and other third parties. The Reporting Persons may exchange information with any such persons pursuant to appropriate confidentiality or similar agreements. The Reporting Persons will likely take some or all of the foregoing steps at preliminary stages in their consideration of various possible courses of action before forming any intention to pursue any particular plan or direction.

Other than as described above, the Reporting Persons do not currently have any plans or proposals that relate to, or would result in, any of the matters listed in Items 4(a)–(j) of Schedule 13D, although, depending on the factors discussed herein, the Reporting Persons may change their purpose or formulate different plans or proposals with respect thereto at any time.

Item 5. Interest in Securities of the Issuer.

Item 5 of the Schedule 13D is hereby amended and restated in its entirety as follows:

(a) – (b) The following sets forth, as of the date of this Schedule 13D, the aggregate number of shares of Common Stock and percentage of Common Stock beneficially owned by each of the Reporting Persons, as well as the number of shares of Common Stock as to which each Reporting Person has the sole power to vote or to direct the vote, shared power to vote or to direct the vote, sole power to dispose or to direct the disposition of, or shared power to dispose or to direct the disposition of, as of the date hereof, based on 23,492,873 shares of Common Stock

outstanding as of May 10, 2022, as disclosed in the Issuer's quarterly report on Form 10-Q filed on May 11, 2022.

Reporting Person	Amount beneficially owned	Percent of class	Sole power to vote or to direct the vote	Shared power to vote or to direct the vote	Sole power to dispose or to direct the disposition	Shared power to dispose or to direct the disposition
The Carlyle Group Inc.	1,802,518	7.7%	0	1,802,518	0	1,802,518
Carlyle Holdings I GP Inc.	1,802,518	7.7%	0	1,802,518	0	1,802,518
Carlyle Holdings I GP Sub L.L.C.	1,802,518	7.7%	0	1,802,518	0	1,802,518
Carlyle Holdings I L.P.	1,802,518	7.7%	0	1,802,518	0	1,802,518
CG Subsidiary Holdings L.L.C.	1,802,518	7.7%	0	1,802,518	0	1,802,518
TC Group, L.L.C.	1,802,518	7.7%	0	1,802,518	0	1,802,518
Carlyle Investment Management L.L.C.	1,802,518	7.7%	0	1,802,518	0	1,802,518
Carlyle Genesis UK LLC	1,802,518	7.7%	0	1,802,518	0	1,802,518
Abingworth LLP	1,802,518	7.7%	0	1,802,518	0	1,802,518
Abingworth Bioventures VII LP	1,802,518	7.7%	0	1,802,518	0	1,802,518

Includes (i) 1,792,518 shares of Common Stock held of record by Abingworth Bioventures VII LP and (ii) 10,000 shares of Common Stock underlying stock options exercisable within 60 days of the date hereof.

The Carlyle Group Inc., which is a publicly traded entity listed on Nasdaq, is the sole shareholder of Carlyle Holdings I GP Inc., which is the sole member of Carlyle Holdings I GP Sub L.L.C., which is the general partner of Carlyle Holdings I L.P., which, with respect to the securities reported herein, is the managing member of CG Subsidiary Holdings L.L.C., which is the managing member of TC Group, L.L.C., which is the managing member of Carlyle Investment Management, L.L.C., which is the sole member of Carlyle Genesis UK LLC, which is the principal member of Abingworth LLP. Abingworth Bioventures VII LP has delegated to Abingworth LLP all investment and dispositive power over the securities held of record by Abingworth Bioventures VII LP. Accordingly, each of the foregoing entities may be deemed to share beneficial ownership of the securities held of record by Abingworth Bioventures VII LP, but each disclaims beneficial ownership of such securities.

- (c) During the past 60 days, the Reporting Persons have not effected any transactions with respect to the Common Stock.
- (d) None.
- (e) Not applicable.

Item 7. Materials to be Filed as Exhibits.

Item 7 of the Schedule 13D is hereby amended and supplemented as follows:

<u>Exhibit Number</u>	<u>Description</u>
1	Joint Filing Agreement.
2	Power of Attorney.

SIGNATURES

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

Date: August 11, 2022

The Carlyle Group Inc.

By: /s/ Anne Frederick, attorney-in-fact

Name: Curtis L. Buser

Title: Chief Financial Officer

Carlyle Holdings I GP Inc.

By: /s/ Anne Frederick, attorney-in-fact

Name: Curtis L. Buser

Title: Managing Director and Chief Financial Officer

Carlyle Holdings I GP Sub L.L.C.

By: Carlyle Holdings I GP Inc., its sole member

By: /s/ Anne Frederick, attorney-in-fact

Name: Curtis L. Buser

Title: Managing Director and Chief Financial Officer

Carlyle Holdings I L.P.

By: /s/ Anne Frederick, attorney-in-fact

Name: Curtis L. Buser

Title: Managing Director

CG Subsidiary Holdings L.L.C.

By: /s/ Anne Frederick, attorney-in-fact

Name: Curtis L. Buser

Title: Managing Director

TC Group, L.L.C.

By: /s/ Anne Frederick, attorney-in-fact

Name: Curtis L. Buser

Title: Managing Director

Carlyle Investment Management L.L.C.By: /s/ Anne Frederick, attorney-in-fact

Name: Curtis L. Buser

Title: Chief Financial Officer

Carlyle Genesis UK LLC

By: Carlyle Investment Management L.L.C., its sole member

By: /s/ Anne Frederick, attorney-in-fact

Name: Curtis L. Buser

Title: Chief Financial Officer

Abingworth LLPBy: /s/ John Heard

Name: John Heard

Title: Authorized Signatory

Abingworth Bioventures VII LPBy: /s/ John Heard

Name: John Heard

Title: Authorized Signatory

Attention: Intentional misstatements or omissions of fact constitute Federal criminal violations (See 18 U.S.C. 1001

JOINT FILING AGREEMENT

In accordance with Rule 13d-1(k)(1) promulgated under the Securities Exchange Act of 1934, as amended, the undersigned hereby agree that they are jointly filing this statement on Schedule 13D. Each of them is responsible for the timely filing of such statement and any amendments thereto, and for the completeness and accuracy of the information concerning such person contained therein; but none of them is responsible for the completeness or accuracy of the information concerning the other persons making the filing, unless such person knows or has reason to believe that such information is inaccurate.

IN WITNESS WHEREOF, the undersigned hereby execute this Joint Filing Agreement as of the 11th day of August, 2022.

The Carlyle Group Inc.

By: /s/ Anne Frederick, attorney-in-fact

Name: Curtis L. Buser

Title: Chief Financial Officer

Carlyle Holdings I GP Inc.

By: /s/ Anne Frederick, attorney-in-fact

Name: Curtis L. Buser

Title: Managing Director and Chief Financial Officer

Carlyle Holdings I GP Sub L.L.C.

By: Carlyle Holdings I GP Inc., its sole member

By: /s/ Anne Frederick, attorney-in-fact

Name: Curtis L. Buser

Title: Managing Director and Chief Financial Officer

Carlyle Holdings I L.P.

By: /s/ Anne Frederick, attorney-in-fact

Name: Curtis L. Buser

Title: Managing Director

CG Subsidiary Holdings L.L.C.

By: /s/ Anne Frederick, attorney-in-fact

Name: Curtis L. Buser

Title: Managing Director

TC Group, L.L.C.

By: /s/ Anne Frederick, attorney-in-fact

Name: Curtis L. Buser

Title: Managing Director

Carlyle Investment Management L.L.C.

By: /s/ Anne Frederick, attorney-in-fact

Name: Curtis L. Buser

Title: Chief Financial Officer

Carlyle Genesis UK LLC

By: Carlyle Investment Management L.L.C., its sole member

By: /s/ Anne Frederick, attorney-in-fact

Name: Curtis L. Buser

Title: Chief Financial Officer

Abingworth LLP

By: /s/ John Heard

Name: John Heard

Title: Authorized Signatory

Abingworth Bioventures VII LP

By: /s/ John Heard

Name: John Heard

Title: Authorized Signatory

POWER OF ATTORNEY

The undersigned understands that, from time to time, the Carlyle Companies (defined below) are required to prepare, execute, and file certain federal and state securities laws filings.

Know all by these presents, that the undersigned hereby constitutes and appoints each of Jeffrey Ferguson, Jeremy Anderson, Chintan Bhatt, Anne Frederick, Kevin Gasque, Erica Herberg, Anat Holtzman, Joshua Lefkowitz, David Lobe, Elizabeth Muscarella, Sanket Patel, Robert Rosen, and Catherine Ziobro, or any of them signing singly, and with full power of substitution, the undersigned's true and lawful attorney-in-fact to:

- (1) prepare, execute in the name of each Carlyle Company and on behalf of each Carlyle Company, and submit to the U.S. Securities and Exchange Commission (the "SEC") a Form ID, including amendments thereto, and any other documents necessary or appropriate to obtain codes and passwords enabling the undersigned to make electronic filings with the SEC of Forms D ("Form D") required to be filed in accordance with Rule 503 ("Rule 503") promulgated with respect to Sections 4(2), 4(6) and 3(b) of the Securities Act of 1933, as amended (the "1933 Act") and reports required by Sections 13(d) and 16(a) of the Securities Exchange Act of 1934, as amended (the "1934 Act") or any rule or regulation of the SEC;
- (2) prepare and execute for and on behalf of each Carlyle Company, in the undersigned's capacity as a Chairman, authorized person, officer and/or director of each Carlyle Company, federal and state securities laws filings including without limitation Forms D pursuant to Rule 503 and Schedules 13D and 13G and Forms 3, 4, and 5 in accordance with Sections 13(d) and 16(a) of the 1934 Act and the rules thereunder;
- (3) do and perform any and all acts for and on behalf of each Carlyle Company that may be necessary or desirable to complete and execute any such federal and state securities laws filings including without limitation Forms D, Schedules 13D and 13G and Forms 3, 4, and 5, complete and execute any amendment or amendments thereto, and timely file such form with the SEC and the securities administrators of any state, the District of Columbia, the Commonwealth of Puerto Rico, Guam and the United States Virgin Islands or their designees and any stock exchange or similar authority; and
- (4) take any other action of any type whatsoever in connection with the foregoing which, in the opinion of such attorney-in-fact, may be of benefit to, in the best interest of, or legally required by, the undersigned, it being understood that the documents executed by such attorney-in-fact on behalf of the undersigned pursuant to this Power of Attorney shall be in such form and shall contain such terms and conditions as such attorney-in-fact may approve in such attorney-in-fact's discretion.

The undersigned hereby grants to each such attorney-in-fact full power and authority to do and perform any and every act and thing whatsoever requisite, necessary, or proper to be done in the exercise of any of the rights and powers herein granted, as fully to all intents and purposes as the undersigned might or could do if personally present, with full power of substitution or revocation, hereby ratifying and confirming all that such attorney-in-fact, or such attorney-in-fact's substitute or substitutes, shall lawfully do or cause to be done by virtue of this power of attorney and the rights and powers herein granted, whether the same needs to be executed, taken or done by him in his capacity as a current or former member, partner, shareholder, director or officer of any company, partnership, corporation, organization, firm, branch or other entity connected with, related to or affiliated with any of the entities constituting the Carlyle Companies or entities that directly or indirectly hold interests in the Carlyle Companies.

The undersigned acknowledges that the foregoing attorneys-in-fact, in serving in such capacity at the request of the undersigned, are not assuming any of the undersigned's responsibilities to comply with federal and state securities laws, including without limitation Rule 503 of the 1933 Act or Section 13 and Section 16 of the 1934 Act.

This Power of Attorney and all authority conferred hereby shall not be terminated by operation of law, whether by the death or incapacity of the undersigned or by occurrence of any other event. Actions taken by an attorney-in-fact pursuant to this Power of Attorney shall be as valid as if any event described in the preceding sentence had not occurred, whether or not the attorney-in-fact shall have received notice of such event. Notwithstanding the foregoing, (i) in the event that an attorney-in-fact is no longer employed by The Carlyle Group Employee Co., L.L.C. or its affiliates, this Power of Attorney and all authority conferred hereby shall be immediately terminated with respect to such Attorney, and (ii) the undersigned may terminate or revoke this Power of Attorney at any time.

For purposes hereof, the "Carlyle Companies" shall consist of: (i) Carlyle Group Management L.L.C., The Carlyle Group Inc., Carlyle Holdings I GP Inc., Carlyle Holdings I GP Sub L.L.C., Carlyle Holdings I L.P., TC Group, L.L.C., Carlyle Holdings II GP L.L.C., Carlyle Holdings II L.L.C., CG Subsidiary Holdings L.L.C., TC Group Investment Holdings Limited Partner L.L.C., TC Group Investment Holdings, L.P., Carlyle Holdings III GP L.P., Carlyle Holdings III GP Sub L.L.C., Carlyle Holdings III L.P., TC Group Cayman L.P., TC Group Sub L.P., TC Group Investment Holdings Sub L.P., TC Group Cayman Investment Holdings, L.P., TC Group Cayman Investment Holdings Sub L.P., TC Group Cayman, L.P., TC Group Cayman Sub L.P., Five Overseas CG Investment L.L.C. and (ii) the subsidiaries and affiliates of the foregoing in clause (i), including without limitation investment funds sponsored directly or indirectly by one or more of the Carlyle Companies.

IN WITNESS WHEREOF, the undersigned has caused this Power of Attorney to be executed as of this 5th day of August, 2022.

By: /s/ Curtis L. Buser

Name: Curtis L. Buser

Title: Chief Financial Officer