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DELTA REPORT

10-Q

ATRA - ATARA BIOTHERAPEUTICS, IN

10-Q - SEPTEMBER 30, 2023 COMPARED TO 10-Q - JUNE 30, 2023

The following comparison report has been automatically generated

TOTAL DELTAS	1241
CHANGES	215
DELETIONS	266
ADDITIONS	760

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

FORM 10-Q

☐ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended June September 30, 2023

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission file number 001-36548

ATARA BIOTHERAPEUTICS, INC.
(Exact Name of Registrant as Specified in its Charter)

Delaware	**46-0920988**
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification No.)**
2380 Conejo Spectrum Street, Suite 200 Thousand Oaks, CA	**91320**
(Address of Principal Executive Offices)	**(Zip Code)**

Registrant's Telephone Number, Including Area Code: (805) 623-4211

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Trading Symbol(s)	Name of Each Exchange on Which Registered
Common Stock, par value $0.0001 per share	**ATRA**	**The Nasdaq Stock Market LLC**

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to

file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☐ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit such files). Yes ☐ No ☐

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	☐	Accelerated filer	☐
Non-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 13(a) of the Exchange Act. ☐

Indicate by check mark whether the Registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☐

The number of outstanding shares of the Registrant's Common Stock as of August 1, 2023 October 27, 2023 was 101,102,152 101,922,250 shares.

ATARA BIOTHERAPEUTICS, INC.

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NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q contains forward-looking statements within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. Such forward-looking statements, which represent our intent, belief or current expectations, involve risks and uncertainties and other factors that could cause actual results and the timing of certain events to differ materially from future results expressed or implied by such forward-looking statements. In some cases, you can identify these statements by forward-looking words such as "believe," "may," "will," "estimate," "continue," "anticipate," "intend," "could," "would," "project," "predict," "plan," "expect" or the negative or plural of these words or similar expressions. The forward-looking statements include, but are not limited to, statements about:

- our expectations regarding the timing of initiating clinical studies, opening client sites, enrolling clinical studies and reporting results of clinical studies for our programs, including our ATA188 program; and ATA3219 programs;
- the likelihood and timing of regulatory submissions or related approvals for our product candidates, including the initiation, completion and expectations about the timing of approvals for a biologics license application

(BLA) for tab-cel® for patients with Epstein-Barr virus with post-transplant lymphoproliferative disease (EBV+ PTLD);

- the potential indications for our product and product candidates;
- commercialization of Ebvallo™ tab-cel (Ebvallo™ in the United Kingdom (UK) and the European Union (EU)) worldwide and our amended and restated Commercialization Agreement with Pierre Fabre Medicament, including potential milestone and royalty payments under the agreement (Ebvallo in the UK and the EU subject to the Purchase and Sale Agreement with HCR Molag Fund, L.P.);
- our Purchase and Sale Agreement and related transactions with HCR Molag Fund, L.P.;
- our Commercial Manufacturing Services Agreement with Charles River Laboratories, Inc. (CRL) and other agreements we may enter into with CRL;
- our Master Services and Supply Agreement and related transactions with FUJIFILM Diosynth Biotechnologies California, Inc.;
- our expectations regarding the potential commercial market opportunities, market size and the size of the patient populations for our product and product candidates;
- estimates of our expenses, capital requirements and need for additional financing;
- our expectation regarding the length of time that our existing capital resources will be sufficient to enable us to fund our planned operations, including our going concern assessment;
- our ability to enter into favorable commercialization arrangements with third parties to commercialize our produc and product candidates, including for tab-cel in the U.S.; candidates;
- our ability to develop, acquire and advance product candidates into, and successfully complete, clinical studies;
- the initiation, timing, costs, progress and results of future preclinical studies and clinical studies and our research and development programs;
- our ability to enter into and maintain contracts with clinical research organizations, manufacturing organizations and other vendors for clinical and preclinical studies, supplies and other services;
- the scope of protection we are able to obtain and maintain for the intellectual property rights covering our produc and product candidates;
- our financial performance;
- our election to rely on reduced reporting and disclosure requirements available to smaller reporting companies may make our common shares less attractive to investors;
- developments and projections relating to our competitors and our industry;
- our ability to have our product and product candidates manufactured for our clinical studies or for commercial sal including at commercially reasonable values;
- the impact of public health emergencies, such as COVID-19, to our business and operations, as well as the businesses and operations of third parties on which we rely;

- the impact of our workforce reductions on our ability to attract, retain and retain motivate qualified personnel anc to on our business, operations, and financial condition; and

- timing and costs related to the qualification of our contract manufacturing organizations' (CMO) manufacturing facilities for commercial production.

These statements are only current predictions and are subject to known and unknown risks, uncertainties, including, without limitation, risks and uncertainties associated with the costly and time-consuming pharmaceutical product development process and the uncertainty of clinical success; the sufficiency of our cash resources and need for additional capital; and other factors that may cause our or our industry's actual results, levels of activity, performance or achievements to be materially different from those anticipated by the forward-looking statements. We discuss many of these risks in this report in greater detail under the heading "1A. Risk Factors" and elsewhere in this report. You should not rely upon forward-looking statements as predictions of future events. New risk factors and uncertainties may emerge from time to time, and it is not possible for management to predict all risks and uncertainties.

In this Quarterly Report on Form 10-Q, unless the context requires otherwise, "Atara," "Atara Biotherapeutics," "Company," "we," "our," and "us" means Atara Biotherapeutics, Inc. and, where appropriate, its subsidiaries.

Summary Risk Factors

Our business is subject to numerous risks and uncertainties that may have a material adverse effect on our business, financial condition or results of operations. These risks are more fully described under the heading "1A. Risk Factors" and elsewhere in this report and include, among others:

- we have incurred substantial losses since our inception and anticipate that we will continue to incur substantial losses for the foreseeable future;
- we have earned limited commercialization revenues to date, and we may never achieve profitability;
- we are generally early in our development efforts and have only a small number of product candidates in clinical development, and all of our other product candidates are still in preclinical development. If we or our collaborators are unable to successfully develop, manufacture and commercialize our product or product candidates or experience significant delays in doing so, our business may be materially harmed;
- we will require substantial additional financing to achieve our goals, and a failure to obtain this necessary capital when needed could force us to delay, limit, reduce or terminate our product development or manufacturing effort
- our future success depends on our ability to retain our executive officers and to attract, retain and motivate qualified personnel;
- the results of preclinical studies or earlier clinical studies are not necessarily predictive of future results, and our existing product candidates in clinical studies, and any other product candidates we advance into clinical studies may not have favorable results in later clinical studies or receive regulatory approval;
- clinical drug development involves a lengthy and expensive process with an uncertain outcome;
- our T-cell immunotherapy product and product candidates and our next-generation CAR T programs represent ne therapeutic approaches that could result in heightened regulatory scrutiny, delays in clinical development or our inability to achieve regulatory approval, commercialization or payor coverage of our product candidates;
- there can be no assurance that we will achieve all of the anticipated benefits of the Fujifilm Transaction and we could face unanticipated challenges;
- the market opportunities for our product and product candidates may be limited to those patients who are

ineligible for or have failed prior treatments and may be small;

- we may not be able to obtain or maintain orphan drug exclusivity for our product candidates;
- we have been affected by and could be adversely affected in the future by the effects of health epidemics and pandemics, such as the COVID-19 pandemic, which could materially and adversely affect our business and operations in the future, as well as the businesses and operations of third parties on which we rely;
- if we are unable to obtain and maintain sufficient intellectual property protection for our product candidates, or if the scope of the intellectual property protection is not sufficiently broad, our ability to commercialize our product candidates successfully and to compete effectively may be adversely affected;

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- our principal stockholders own a significant percentage of our stock and will be able to exert control or significant influence over matters subject to stockholder approval;

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- our 2022 workforce reduction reductions may not result in anticipated savings, could result in total costs and expenses that are greater than expected and could disrupt our business; and
- maintaining clinical and commercial timelines is dependent on our end-to-end supply chain network to support manufacturing; if we experience problems with our third party suppliers or CMOs, development and/or commercialization of our product and product candidates may be adversely affected.

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ATARA BIOTHERAPEUTICS, INC.
Condensed Consolidated Balance Sheets
(Unaudited)
(In thousands, except per share amounts)

	June 30, 2023	December 31, 2022	September 30, 2023	December 31, 2022
Assets				
Current assets:				
Cash and cash equivalents	$ 45,898	$ 92,942	$ 64,791	$ 92,942
	107,74			
Short-term investments	4	149,877	37,617	149,877
Restricted cash	146	146	146	146
Accounts receivable	507	40,221	163	40,221
Inventories	7,861	1,586	6,591	1,586
Other current assets	10,164	10,308	9,388	10,308

Total current assets	172,320	295,080	118,696	295,080
Property and equipment, net	5,349	6,300	4,628	6,300
Operating lease assets	62,195	68,022	59,175	68,022
Other assets	6,575	7,018	6,289	7,018
Total assets	$ 246,439	$ 376,420	$ 188,788	$ 376,420
Liabilities and stockholders' equity				
Liabilities and stockholders' equity (deficit)				
Current liabilities:				
Accounts payable	$ 4,138	$ 6,871	$ 6,511	$ 6,871
Accrued compensation	12,556	17,659	14,430	17,659
Accrued research and development expenses	20,737	24,992	23,968	24,992
Deferred revenue	11,949	8,000	11,611	8,000
Other current liabilities	25,172	21,394	22,569	21,394
Total current liabilities	74,552	78,916	79,089	78,916
Deferred revenue – long-term	75,565	77,000	73,929	77,000
Operating lease liabilities – long-term	51,754	58,064	48,508	58,064
Liability related to the sale of future revenues – long-term	32,091	30,236	33,252	30,236
Other long-term liabilities	5,023	5,564	4,848	5,564
Total liabilities	238,985	249,780	239,626	249,780
Commitments and contingencies (Note 8)				
Stockholders' equity:				
Common stock—$0.0001 par value, 500,000 shares authorized as of June 30, 2023 and December 31, 2022; 101,102 and 95,927 shares issued and outstanding as of June 30, 2023 and December 31, 2022, respectively	10	10		
Stockholders' equity (deficit):				

Common stock—$0.0001 par value, 500,000 shares authorized as of September 30, 2023 and December 31, 2022; 101,922 and 95,927 shares issued and outstanding as of September 30, 2023 and December 31, 2022, respectively			10	10
Additional paid-in capital	1,847,280	1,821,721	1,858,423	1,821,721
Accumulated other comprehensive (loss) income	(933)	(2,067)	(571)	(2,067)
Accumulated deficit	(1,838,903)	(1,693,024)	(1,908,700)	(1,693,024)
Total stockholders' equity	7,454	126,640		
Total liabilities and stockholders' equity	$ 246,439	$ 376,420		
Total stockholders' equity (deficit)			(50,838)	126,640
Total liabilities and stockholders' equity (deficit)			$ 188,788	$ 376,420

See accompanying notes to the condensed consolidated financial statements.

ATARA BIOTHERAPEUTICS, INC.

Condensed Consolidated Statements of Operations and Comprehensive Income (Loss)

(Unaudited)

(In thousands, except per share amounts)

	Three Months Ended June 30,		Six Months Ended June 30,		Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022	2023	2022	2023	2022
Commercialization revenue	$ 793	$ —	$ 1,677	$ —	$ 2,020	$ —	$ 3,697	$ —
License and collaboration revenue	164	51,579	506	58,893	118	4,459	624	63,352
Total revenue	957	51,579	2,183	58,893	2,138	4,459	4,321	63,352

Costs and operating expenses:								
Cost of commercialization revenue	2,895	—	3,111	—	2,615	—	5,726	—
Research and development expenses	56,141	64,898	118,297	139,861	56,888	70,157	175,185	210,018
General and administrative expenses	13,335	18,813	27,207	39,384	12,247	18,924	39,454	58,308
Total costs and operating expenses	72,371	83,711	148,615	179,245	71,750	89,081	220,365	268,326
Loss from operations	(71,414)	(32,132)	(146,432)	(120,352)	(69,612)	(84,622)	(216,044)	(204,974)
Other income (expense), net:								
Interest income	1,695	704	3,497	932	1,218	973	4,715	1,904
Interest expense	(1,378)	(129)	(2,714)	(133)	(1,395)	(123)	(4,109)	(256)
Gain on sale of ATOM Facility	—	50,237	—	50,237	—	—	—	50,237
Other income (expense), net	(10)	(214)	(207)	(323)	(27)	(309)	(234)	(631)
Total other income (expense), net	307	50,598	576	50,713	(204)	541	372	51,254
(Loss) income before provision for income taxes	(71,107)	18,466	(145,856)	(69,639)				
Provision for income taxes	1	—	23	—				
Net (loss) income	$ (71,108)	$ 18,466	$ (145,879)	$ (69,639)				
Loss before provision for (benefit from) income taxes					(69,816)	(84,081)	(215,672)	(153,720)

Provision for (benefit from) income taxes					(19)	10	4	10
Net loss					$ (69,797)	$ (84,091)	$ (215,676)	$ (153,730)
Other comprehensive gain (loss):								
Unrealized gain (loss) on available-for-sale securities	304	(726)	1,134	(2,250)	362	(341)	1,496	(2,591)
Comprehensive (loss) income	$ (70,804)	$ 40	$ (144,745)	$ (71,889)				
Comprehensive loss					$ (69,435)	$ (84,432)	$ (214,180)	$ (156,321)
Basic (loss) earnings per common share	$ (0.68)	$ 0.18	$ (1.40)	$ (0.69)				
Diluted (loss) earnings per common share	$ (0.68)	$ 0.18	$ (1.40)	$ (0.69)				
Basic and diluted loss per common share					$ (0.66)	$ (0.82)	$ (2.05)	$ (1.51)
Basic weighted-average shares outstanding	105,091	101,601	104,533	101,166				
Diluted weighted-average shares outstanding	105,091	101,866	104,533	101,166				
Basic and diluted weighted-average shares outstanding					106,401	102,423	105,163	101,590

See accompanying notes to the condensed consolidated financial statements.

ATARA BIOTHERAPEUTICS, INC.

Condensed Consolidated Statements of Changes in Stockholders' Equity (Deficit)

(Unaudited)

(In thousands)

For the Six Months Ended June 30, 2023	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
Balance as of January 1, 2023	95,927	$ 10	$ 721	$ (2,067)	$ (1,624,093)	$ 126,640
Issuance of common stock through ATM facilities, net of commissions and offering costs of $97	148	—	590	—	—	590
RSU settlements, net of shares withheld	463	—	(93)	—	—	(93)
Stock-based compensation expense	—	—	11,764	—	—	11,764
Net (loss) income	—	—	—	—	(74,771)	(74,771)

For the Nine Months Ended September 30, 2023	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity (Deficit)
Balance as of January 1, 2023	95,927	$ 10	$ 721	$ (2,067)	$ (1,624,093)	$ 126,640
Issuance of common stock through ATM facilities, net of commissions and offering costs of $97	148	—	590	—	—	590
RSU settlements, net of shares withheld	463	—	(93)	—	—	(93)
Stock-based compensation expense	—	—	11,764	—	—	11,764
Net (loss) income	—	—	—	—	(74,771)	(74,771)

Unrealized gain (loss) on available-for-sale securities	—	—	—	830	—	830	—	—	—	830	—	830
Balance as of March 31, 2023	96,538	$ 10	1,833,982	$ (1,237)	$ (1,767,795)	64,960	96,538	$ 10	1,833,982	$ (1,237)	$ (1,767,795)	64,960
Exercise of pre-funded warrants	2,916	—	—	—	—	—	2,916	—	—	—	—	—
RSU settlements, net of shares withheld	1,074	—	(1)	—	—	(1)	1,074	—	(1)	—	—	(1)
Issuance of common stock pursuant to employee stock awards	574	—	747	—	—	747	574	—	747	—	—	747
Stock-based compensation expense	—	—	12,552	—	—	12,552	—	—	12,552	—	—	12,552
Net (loss) income	—	—	—	—	(71,108)	(71,108)	—	—	—	—	(71,108)	(71,108)
Unrealized gain (loss) on available-for-sale securities	—	—	—	304	—	304	—	—	—	304	—	304
Balance as of June 30, 2023	101,102	$ 10	1,847,280	$ (933)	$ (1,838,903)	7,454	101,102	$ 10	1,847,280	$ (933)	$ (1,838,903)	7,454
RSU settlements, net of shares withheld							820	—	—	—	—	—
Stock-based compensation expense							—	—	11,143	—	—	11,143
Net (loss) income							—	—	—	—	(69,797)	(69,797)

Unrealized gain (loss) on available-for-sale securities	—	—	—	362	—	362						
Balance as of September 30, 2023	101,92 2	$ 10	1,858, $ 423	(57 $ 1)	(1,908, $ 700)	(50, $ 838)						

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
For the Six Months Ended June 30, 2022	**Shares**	**Amount**										
For the Nine Months Ended September 30, 2022							**Shares**	**Amount**	**Capital**			
Balance as of January 1, 2022	91,671	$ 9	1,744, $ 695	(36 $ 8)	(1,464, $ 722)	279,614 $ 4	91,671	$ 9	1,744, $ 695	(36 $ 8)	(1,464, $ 722)	279,614 $ 14
Issuance of common stock through ATM facilities, net of commissions and offering costs of $419	1,320,516	—	20,516	—	—	20,516	1,320,516	—	20,516	—	—	20,516
RSU settlements, net of shares withheld	405,616	—	(616)	—	—	(616)	405,616	—	(616)	—	—	(616)

Issuance of common stock pursuant to employee stock awards	10	—	96	—	—	96	10	—	96	—	—	96
Stock-based compensation expense	—	—	14,335	—	—	14,335	—	—	14,335	—	—	14,335
Net (loss) income	—	—	—	—	(88,105)	(88,105)	—	—	—	—	(88,105)	(88,105)
Unrealized gain (loss) on available-for-sale securities	—	—	—	(1,524)	—	(1,524)	—	—	—	(1,524)	—	(1,524)
Balance as of March 31, 2022	93,406	$ 9	1,779,026	$ (1,892)	$ (1,852,827)	$ 224,316	93,406	$ 9	1,779,026	$ (1,892)	$ (1,852,827)	$ 224,316
RSU settlements, net of shares withheld	647	—	(3)	—	—	(3)	647	—	(3)	—	—	(3)
Issuance of common stock pursuant to employee stock awards	303	—	1,309	—	—	1,309	303	—	1,309	—	—	1,309
Stock-based compensation expense	—	—	14,117	—	—	14,117	—	—	14,117	—	—	14,117
Net (loss) income	—	—	—	—	18,466	18,466	—	—	—	—	18,466	18,466
Unrealized gain (loss) on available-for-sale securities	—	—	—	(726)	—	(726)	—	—	—	(726)	—	(726)
Balance as of June 30, 2022	94,356	$ 9	1,794,449	$ (2,618)	$ (1,834,361)	$ 257,479	94,356	$ 9	1,794,449	$ (2,618)	$ (1,834,361)	$ 257,479

RSU settlements, net of shares withheld	517	—	(4)	—	—	(4)
Issuance of common stock pursuant to employee stock awards	6	—	47	—	—	47
Stock-based compensation expense	—	—	14,023	—	—	14,023
Net (loss) income	—	—	—	—	(84,091)	(84,091)
Unrealized gain (loss) on available-for-sale securities	—	—	—	(341)	—	(341)
Balance as of September 30, 2022	94,879	$ 9	1,808,515	$ (2,959)	$ (1,618,452)	$ 187,113

See accompanying notes to the condensed consolidated financial statements.

ATARA BIOTHERAPEUTICS, INC.
Condensed Consolidated Statements of Cash Flows
(Unaudited)
(In thousands)

	Six Months Ended June 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022
Operating activities				
Net loss	$ (145,879)	$ (69,639)	$ (215,676)	$ (153,730)
Adjustments to reconcile net loss to net cash used in operating activities:				

Gain on sale of ATOM Facility	—	(50,237)	—	(50,237)
Stock-based compensation expense	24,316	28,452	35,459	42,475
Depreciation and amortization expense	2,415	3,029	3,624	4,398
Accretion of liability related to sale of future revenues	2,456	—	3,729	—
Amortization (accretion) of investment premiums (discounts)	(1,106)	811	(1,320)	974
Non-cash operating lease expense	5,827	3,355	8,847	6,103
Other non-cash items, net	100	46	148	70
Changes in operating assets and liabilities:				
Accounts receivable	39,714	349	40,058	737
Inventories	(6,275)	—	(5,005)	—
Prepaid expenses and other current assets	169	(1,546)		
Other current assets			920	(3,903)
Other assets	(110)	76	(119)	(139)
Accounts payable	(2,780)	(3,384)	(319)	(4,760)
Accrued compensation	(5,103)	(8,833)	(3,229)	(7,545)
Accrued research and development expenses	(4,255)	1,674	(1,024)	4,417
Other current liabilities	3,685	2,891	607	5,595
Deferred revenue	2,514	(51,468)	540	(51,468)
Operating lease liabilities	(7,021)	(4,211)	(9,953)	(6,781)
Other long-term liabilities	108	142	142	244
Net cash used in operating activities	(91,225)	(148,493)	(142,571)	(213,550)
Investing activities				
Purchases of short-term investments	(83,647)	(165,090)	(83,647)	(181,164)
Proceeds from maturities and sales of short-term investments	128,020	166,390	198,723	242,293
Purchases of property and equipment	(898)	(4,024)	(1,179)	(4,156)
Proceeds from sale of property and equipment			25	—
Net proceeds from sale of ATOM Facility	—	94,765	—	94,765
Net cash (used in) provided by investing activities	43,475	92,041		
Net cash provided by investing activities			113,922	151,738
Financing activities				
Proceeds from issuance of common stock through ATM facilities, net	590	20,516	590	20,516

Proceeds from employee stock awards	747	1,405	747	1,452
Taxes paid related to net share settlement of restricted stock units	(94)	(619)	(94)	(623)
Principal payments on finance lease obligations	(524)	(190)	(732)	(396)
Other financing activities, net	(13)	(104)	(13)	(155)
Net cash provided by financing activities	706	21,008	498	20,794
Decrease in cash, cash equivalents and restricted cash	(47,044)	(35,444)	(28,151)	(41,018)
Cash, cash equivalents and restricted cash at beginning of period	93,088	107,478	93,088	107,478
Cash, cash equivalents and restricted cash at end of period	$ 46,044	$ 72,034	$ 64,937	$ 66,460
Non-cash investing and financing activities				
Property and equipment purchases included in accounts payable and other accrued liabilities	$ 108	$ 132	$ 20	$ 35
Supplemental cash flow disclosure				
Cash paid for interest	$ 218	$ 133	$ 332	$ 256
Cash paid for income taxes	$ 2	$ 19	$ 2	$ 19

See accompanying notes to the condensed consolidated financial statements.

ATARA BIOTHERAPEUTICS, INC.
Notes to Condensed Consolidated Financial Statements
(Unaudited)

1. Description of Business

Atara Biotherapeutics, Inc. (Atara, we, our or the Company) was incorporated in August 2012 in Delaware. Atara is a leader in T-cell immunotherapy, leveraging its novel allogeneic Epstein-Barr Virus (EBV) T-cell platform to develop transformative therapies for patients with cancer and autoimmune disease.

We have several T-cell immunotherapies in clinical development and are progressing multiple next-generation allogeneic chimeric antigen receptor T-cell (CAR T) programs. Our most advanced T-cell immunotherapy program, tab-cel® (tabelecleucel), has received marketing authorization approval under the proprietary name Ebvallo™ by the European Commission (EC) for commercial sale and use in the European Union (EU) and by the Medicines and Healthcare products Regulatory Agency (MHRA) for commercial sale and use in the United Kingdom (UK). Tab-cel is currently in Phase 3 development in the US. In October 2021, we entered into a commercialization agreement (Pierre Fabre Commercialization

Agreement) with Pierre Fabre Medicament (Pierre Fabre), as amended in September 2022, pursuant to which we granted to Pierre Fabre an exclusive, field-limited license to commercialize and distribute Ebvallo in Europe and select emerging markets in the Middle East, Africa, Eastern Europe and Central Asia (the Initial Territory), following regulatory approval. See Note 5 for further information. In December 2022, we sold a portion of our right to receive royalties and certain milestones in Ebvallo under the Pierre Fabre Commercialization Agreement to HCR Molag Fund L.P. (HCRx) for a total investment amount of $31.0 million, subject to a repayment cap between 185% and 250% of the total investment amount by HCRx. We retain full rights to tab-cel in other major markets, including North America, Asia Pacific and Latin America. See Notes 5 and Note 6 for further information. In October 2023, we amended and restated the Pierre Fabre Commercialization Agreement. See Note 11 for further information.

We have licensed rights to T-cell product candidates from Memorial Sloan Kettering Cancer Center (MSK), rights related to our next-generation CAR T programs from MSK, and from H. Lee Moffitt Cancer Center (Moffitt), and rights to know-how and technology from the Council of the Queensland Institute of Medical Research (QIMR Berghofer). See Note 8 for further information.

In January 2022, we entered into an asset purchase agreement with FUJIFILM Diosynth Biotechnologies California, Inc. (FDB) and, for certain limited purposes, FUJIFILM Holdings America Corporation, to sell all of the Company's right, title and interest in and to certain assets related to the Atara T-Cell Operations and Manufacturing facility (ATOM Facility) located in Thousand Oaks, California for $100 million in cash, subject to potential post-closing adjustments pursuant to the asset purchase agreement (the Fujifilm Transaction). The closing of the Fujifilm Transaction occurred on April 4, 2022, at which time 136 of our ATOM Facility employees transitioned to FDB as part of the transaction. We also entered into a Master Services and Supply Agreement and related Statements of Work with FDB (collectively, the Fujifilm MSA) which became effective upon the closing and could extend for up to ten years. Pursuant to the Fujifilm MSA, FDB will supply us with specified quantities of our cell therapy product candidates and any products approved by regulatory authorities, manufactured in accordance with cGMP standards. See Note 8 for further information.

Certain prior year amounts, which are not material, have been reclassified to conform to current year presentation in the Condensed Consolidated Statements of Operations and Comprehensive Income (Loss), Condensed Consolidated Statements of Cash Flows and the Notes to Condensed Consolidated Financial Statements.

2. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying unaudited interim condensed consolidated financial statements include the accounts of Atara and its wholly owned subsidiaries and have been prepared in accordance with U.S. generally accepted accounting principles (U.S. GAAP) and the requirements of the Securities and Exchange Commission (SEC) for interim reporting. As permitted under those rules, certain footnotes or other financial information that are normally required by U.S. GAAP can be condensed or omitted. These unaudited interim condensed consolidated financial statements should therefore be read in conjunction with the audited consolidated financial statements and notes for the year ended December 31, 2022, included in the Company's Annual Report on Form 10-K filed with the SEC on February 8, 2023. In the opinion of management, the condensed consolidated financial statements reflect all adjustments, consisting only of normal

recurring adjustments, which are necessary for a fair presentation of the Company's condensed consolidated financial statements. The results of operations for any interim period are not necessarily indicative of the results to be expected for the full year or any other future period. The condensed consolidated balance sheet as of December 31, 2022 has been derived from audited consolidated financial statements at that date but does not include all of the information required by U.S. GAAP for complete consolidated financial statements.

Liquidity and Going Concern

We have incurred significant operating losses since inception and have relied primarily on public and private equity financings and receipts from license and collaboration agreements to fund our operations. As we continue to incur losses, our transition to profitability will depend on the successful development, approval and commercialization of product candidates and on the achievement of sufficient revenues to support our cost structure. We may never achieve sustained operating cash inflows or profitability. We expect that existing cash, cash equivalents and short-term investments as of June 30, 2023 September 30, 2023, will not be sufficient to fund our planned operations for at least the next twelve months from the date of issuance of these condensed consolidated financial statements. These conditions raise substantial doubt about our ability to continue as a going concern for at least 12 months after the date these condensed consolidated financial statements are issued. The interim condensed consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

To alleviate the conditions that raise substantial doubt about our ability to continue as a going concern, we plan to secure additional capital, potentially through a combination of public or private security offerings; use of our existing 2021 ATM Facility, under which we have $55.2 million of our common stock remaining and available for sale; facilities as described in Note 9; and/or strategic transactions, including, but not limited to, seeking a commercialization partner for tab-cel in the U.S. transactions. We may also need to raise additional funding as required based on the status of our development programs and our projected cash flows. Although we have been successful in raising capital in the past, and expect to continue to raise capital as required, there is no assurance that we will be successful in obtaining sufficient funding on terms acceptable to us to fund continuing operations, if at all, or identify and enter into any strategic transactions that will provide the capital that we will require. If we are unable to obtain sufficient funding on acceptable terms, we could be forced to delay, limit, reduce or terminate preclinical studies, clinical studies or other development activities for one or more of our product candidates, which could have a material adverse effect on our business, results of operations, and financial condition. Accordingly, we have concluded that substantial doubt exists with respect to our ability to continue as a going concern for at least 12 months after the issuance of the accompanying condensed consolidated financial statements.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates, assumptions and judgments that affect the amounts reported in the financial statements and accompanying notes.

Significant estimates relied upon in preparing these financial statements include estimates related to revenue recognition, accrued research and development expenses, stock-based compensation expense, income taxes and the liability related to the sale of future revenues. Actual results could differ materially from those estimates.

Recent Accounting Pronouncements

We consider the applicability and impact of any recent Accounting Standards Update (ASU) issued by the Financial Accounting Standards Board (FASB). Based on our assessment, the ASUs were determined to be either not applicable or are expected to have minimal impact on our condensed consolidated financial statements.

3. Net (Loss) Earnings Loss per Common Share

Basic net (loss) earnings loss per common share is calculated by dividing net (loss) income loss by the weighted-average number of shares of common stock and pre-funded warrants outstanding during the period, without consideration of common share equivalents. Diluted net (loss) earnings loss per common share is computed by dividing net (loss) income loss by the weighted-average number of shares of common stock, pre-funded warrants and common share equivalents outstanding for the period. The pre-funded warrants are included in the computation of basic and diluted net (loss) earnings loss per common share as the exercise price is negligible and the pre-funded warrants are fully vested and exercisable. Common share equivalents are only included in the calculation of diluted net (loss) earnings loss per common share when their effect is dilutive.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
	(in thousands)		(in thousands)	
Weighted average shares outstanding – Basic	105,091	101,601	104,533	101,166
Effect of dilutive securities	—	265	—	—
Weighted average shares outstanding – Diluted	105,091	101,866	104,533	101,166

Potential dilutive securities, which include unvested restricted stock units (RSUs), unvested performance-based RSUs and performance-based options to purchase common stock for which established performance criteria have been achieved as of the end of the respective periods, vested and unvested options to purchase common stock and shares to be issued under our employee stock purchase plan (ESPP), have been excluded from the computation of diluted net earnings (loss) loss per common share if the effect is antidilutive. Therefore, the denominator used to calculate both basic and diluted net (loss) earnings loss per common share is the same in all periods for which we record a net loss. presented.

The following table represents the potential common shares issuable pursuant to outstanding securities as of the related period end dates that were excluded from the computation of diluted net (loss) earnings loss per common share, as their inclusion would have an antidilutive effect:

	Three Months Ended June 30,		Six Months Ended June 30,		Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022	2023	2022	2023	2022
Unvested RSUs	9,772,616	7,483,684	9,772,616	7,483,684	8,456,088	7,915,826	8,456,088	7,915,826
Vested and unvested options	13,495,065	11,364,001	13,495,065	11,490,929	12,288,025	10,954,723	12,288,025	10,954,723
ESPP share purchase rights	114,133	—	114,133	55,598	473,549	264,967	473,549	264,967
Total	23,381,814	18,847,685	23,381,814	19,030,211	21,217,662	19,135,516	21,217,662	19,135,516

4. Financial Instruments

Our financial assets are measured at fair value on a recurring basis using the following hierarchy to prioritize valuation inputs, in accordance with applicable U.S. GAAP:

Level 1: Quoted prices in active markets for identical assets or liabilities that we have the ability to access

Level 2: Observable market-based inputs or unobservable inputs that are corroborated by market data such as quoted prices, interest rates and yield curves

Level 3: Inputs that are unobservable data points that are not corroborated by market data

We review the fair value hierarchy classification on a quarterly basis. Changes in the ability to observe valuation inputs may result in a reclassification of levels of certain securities within the fair value hierarchy. We recognize transfers into and out of levels within the fair value hierarchy in the period in which the actual event or change in circumstances that caused the transfer occurs. There have been no transfers between Level 1, Level 2 and Level 3 in any periods presented.

Financial assets and liabilities are considered Level 2 when their fair values are determined using inputs that are observable in the market or can be derived principally from or corroborated by observable market data such as pricing for similar securities, recently executed transactions, cash flow models with yield curves, and benchmark securities. In addition, Level 2 financial instruments are valued using comparisons to like-kind financial instruments and models that use readily observable market data as their basis. U.S. Treasury, government agency and corporate debt obligations, commercial paper and asset-backed securities are valued primarily using market prices of comparable securities, bid/ask quotes, interest rate yields and prepayment spreads and are included in Level 2.

Financial assets and liabilities are considered Level 3 when their fair values are determined using pricing models, discounted cash flow methodologies, or similar techniques, and at least one significant model assumption or input is unobservable. We have no Level 3 financial assets or liabilities.

The following tables summarize the estimated fair value and related valuation input hierarchy of our available-for-sale securities as of each period end:

As of June 30, 2023:	Input Level	Total Amortized Cost	Total Unrealized Gain	Total Unrealized Loss	Total Estimated Fair Value
		(in thousands)			
Money market funds	Level 1	$ 32,012	$ —	$ —	$ 32,012
U.S. Treasury obligations	Level 2	$ 72,159	$ 8	$ (42)	$ 72,125
Government agency obligations	Level 2	$ 1,451	$ —	$ (33)	$ 1,418
Corporate debt obligations	Level 2	$ 40,287	$ 1	$ (801)	$ 39,487
Commercial paper	Level 2	$ 3,995	$ —	$ —	$ 3,995
Asset-backed securities	Level 2	$ 3,953	$ —	$ (66)	$ 3,887

As of September 30, 2023:	Input Level	Total Amortized Cost	Total Unrealized Gain	Total Unrealized Loss	Total Estimated Fair Value
		(in thousands)			
Money market funds	Level 1	$ 35,023	$ —	$ —	$ 35,023
U.S. Treasury obligations	Level 2	$ 28,131	$ 4	$ —	$ 28,132
Government agency obligations	Level 2	$ 1,451	$ —	$ (26)	$ 1,425
Corporate debt obligations	Level 2	$ 34,018	$ —	$ (509)	$ 33,509
Asset-backed securities	Level 2	$ 2,723	$ —	$ (40)	$ 2,683

Total available-for-sale securities	15,965	9	(942)	15,032	10,740	4	(575)	10,169
Less: amounts classified as cash equivalents	(45,284)	(4)	—	(45,288)	(63,548)	(4)	—	(63,552)
Amounts classified as short-term investments	$ 810,681	$ 5	$ (942)	$ 809,744	$ 38,219	$ —	$ (575)	$ 37,644

As of December 31, 2022:	Input Level	Total Amortized Cost	Total Unrealized Gain	Total Unrealized Loss	Total Estimated Fair Value
			(in thousands)		
Money market funds	Level 1	$ 3,078,603	$ —	$ —	$ 3,078,603
U.S. Treasury obligations	Level 2	63,013	3	(394)	62,622
Government agency obligations	Level 2	8,086	—	(48)	8,038
Corporate debt obligations	Level 2	82,598	4	(1,513)	81,089
Commercial paper	Level 2	996	—	—	996

As of December 31, 2021:	Input Level	Total Amortized Cost	Total Unrealized Gain	Total Unrealized Loss	Total Estimated Fair Value
			(in thousands)		
Money market funds	Level 1	$ 78,603	$ —	$ —	$ 78,603
U.S. Treasury obligations	Level 2	63,013	3	(394)	62,622
Government agency obligations	Level 2	8,086	—	(48)	8,038
Corporate debt obligations	Level 2	82,598	4	(1,513)	81,089
Commercial paper	Level 2	996	—	—	996

Asset-backed securities	Level 2	6,343	—	(119)	6,224	Level 2	6,343	—	(119)	6,224
Total available-for-sale securities		23,069	7	(2,074)	23,002		23,069	7	(2,074)	23,002
Less: amounts classified as cash equivalents		(87,122)	(3)	—	(87,125)		(87,122)	(3)	—	(87,125)
Amounts classified as short-term investments		15,947	4	(2,074)	14,877		15,947	4	(2,074)	14,877
		$ 47	$ 4	$ 74)	$ 77		$ 47	$ 4	$ 74)	$ 77

The amortized cost and fair value of our available-for-sale securities by contractual maturity were as follows:

	As of June 30, 2023		As of December 31, 2022		As of September 30, 2023		As of December 31, 2022	
	Amortized Cost	Estimated Fair Value	Amortized Cost	Estimated Fair Value	Amortized Cost	Estimated Fair Value	Amortized Cost	Estimated Fair Value
	(in thousands)		(in thousands)		(in thousands)		(in thousands)	
Maturing within one year	$ 144,636	$ 143,906	$ 202,323	$ 201,359	$ 97,367	$ 96,863	$ 202,323	$ 201,359
Maturing in one to five years	9,329	9,126	36,746	35,643	4,373	4,306	36,746	35,643
Total available-for-sale securities	$ 153,965	$ 153,032	$ 239,069	$ 237,002	$ 101,740	$ 101,169	$ 239,069	$ 237,002

We considered the current and expected future global economic and market conditions, including, but not limited to, the recent Silicon Valley Bank, Signature Bank wars in Ukraine and First Republic Bank collapses, the war in Ukraine, Middle East and increased tensions between the U.S. and China, and determined that our investments have not

been significantly impacted. As of June 30, 2023 September 30, 2023, no significant facts or circumstances were present to indicate a deterioration in the creditworthiness of the issuers of the available-for-sale securities we hold, and we have no requirement or intention to sell these securities before maturity or recovery of their amortized cost basis. For all securities with a fair value less than its amortized cost basis, we determined the decline in fair value below amortized cost basis to be non-credit related and no allowance for losses has been recorded. During the three and six nine months ended June 30, 2023 September 30, 2023 and 2022, we did not recognize any impairment losses on our investments.

We have elected the practical expedient to exclude the applicable accrued interest from both the fair value and the amortized cost basis of our available-for-sale securities for purposes of identifying and measuring an impairment. We present accrued interest receivable related to our available-for-sale securities in other current assets, separate from short-term investments, on our condensed consolidated balance sheet. As of June 30, 2023 September 30, 2023 and December 31, 2022, accrued interest receivable was $0.4 million and $0.8 million, respectively. We have not written off any accrued interest receivables during the three and six nine months ended June 30, 2023 September 30, 2023 and 2022.

In addition, restricted cash collateralized by money market funds is a financial asset measured at fair value and is a Level 1 financial instrument under the fair value hierarchy.

The following table provides a reconciliation of cash, cash equivalents and restricted cash within the condensed consolidated balance sheets that sum to the total of the same such amounts in the condensed consolidated statement of cash flows:

	June 30, 2023	December 31, 2022	September 30, 2023	December 31, 2022
	(in thousands)		(in thousands)	
Cash and cash equivalents	$ 45,898	$ 92,942	$ 64,791	$ 92,942
Restricted cash – short term	146	146	146	146
Total cash, cash equivalents and restricted cash	$ 46,044	$ 93,088	$ 64,937	$ 93,088

5. Out-license Agreements

Pierre Fabre Agreements

In October 2021, we entered into the Pierre Fabre Commercialization Agreement, pursuant to which we granted to Pierre Fabre an exclusive, field-limited license to commercialize and distribute Ebvallo in Europe and select emerging markets in the Initial Territory following regulatory approval. Atara retains full rights to Ebvallo in other major markets, including North America, Asia Pacific and Latin America. In September 2022, we entered into Amendment No. 1 to the Pierre Fabre Commercialization Agreement (the PF Amendment). Under the terms of the PF Amendment, following

European Commission approval of Ebvallo for EBV+ PTLD and subsequent filing of the Marketing Authorization Application (MAA) transfer to Pierre Fabre, we received an additional $30 million milestone payment in exchange for, among other things, a reduction in: (i) royalties we are eligible to receive as a percentage of net sales of Ebvallo in the Initial Territory, and (ii) the supply price mark up on Ebvallo purchased by Pierre Fabre. Additionally, we also agreed to extend the time period for provision of certain services to Pierre Fabre under the Pierre Fabre Commercialization Agreement. In December 2022, we sold a portion of our right to receive royalties and certain milestones in Ebvallo under the Pierre Fabre Commercialization Agreement to HCR Molag Fund L.P. (HCRx) for a total investment amount of $31.0 million, subject to a repayment cap between 185% and 250% of the total investment amount by HCRx. See Note 6 for further information related to the agreement with HCRx. In October 2023, we amended and restated the Pierre Fabre Commercialization Agreement. See Note 11 for further information.

We Pursuant to the Pierre Fabre Commercialization Agreement, we are responsible at our cost for the conclusion of the ongoing Phase 3 ALLELE clinical study and the Phase 2 multi-cohort clinical study. We are also responsible at our cost for certain other activities directed to obtaining regulatory approval for Ebvallo for EBV-positive EBV-associated post-transplant lymphoproliferative disease pursuant to the terms of the Pierre Fabre Commercialization Agreement in Europe. Pierre Fabre is responsible at its cost for obtaining and maintaining all other regulatory approvals and for commercialization and distribution of Ebvallo in the Initial Territory. We will own any intellectual property rights developed solely by us under the Pierre Fabre Commercialization Agreement.

We have formed a joint steering committee (JSC) with Pierre Fabre that provides oversight, decision making and implementation guidance regarding the commercialization activities covered under the Pierre Fabre Commercialization Agreement.

Pierre Fabre paid us an upfront cash payment of $45.0 million for the exclusive license grant in the fourth quarter of 2021. In December 2022, we met the contractual right to receive $40.0 million in milestone payments upon certain regulatory milestones, for which the cash was received in January 2023. Subject to the terms of the royalty purchase agreement with HCRx, as described in Note 6, we are entitled to receive an aggregate of up to $308.0 million in remaining milestone payments upon achieving certain regulatory and commercial milestones in addition to double-digit tiered royalties as a percentage of net sales of Ebvallo, until the later of 12 years after the first commercial sale in each such country, the expiration of specified patent rights, or the expiration of all regulatory exclusivity for such product on a country-by-country basis.

We have entered into a separate manufacturing and supply agreement with Pierre Fabre for us to manufacture Ebvallo for Pierre Fabre to use in the Initial Territory based on a fixed price through December 31, 2023 and at a price equal to cost plus a margin for orders placed after December 31, 2023., subject to a maximum annual increase. At Pierre Fabre's cost, we are responsible for manufacturing and supplying Pierre Fabre's optional purchases of Ebvallo for commercialization in the Initial Territory for a minimum of seven years from the first commercial sale, as defined in the Pierre Fabre Commercialization Agreement, of Ebvallo in the Initial Territory. At any time following this period, we have the option to transfer the manufacturing responsibility and related manufacturing technology to a third party contract manufacturing organization (CMO), and Pierre Fabre may also elect to directly assume the manufacturing responsibility

and receive the related manufacturing technology. Without transfer of the manufacturing technology, no other party can perform this obligation.

We are also responsible for cell selection services for Pierre Fabre at our cost for a certain period of time unless the parties agree to transfer the related cell selection technology to Pierre Fabre prior to this date. Cell selection is the process of identifying the appropriate cell line from available inventory to be used for a patient. Without transfer of the cell selection technology, no other party

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can provide such services. After this period of time, if we agree to continue to provide cell selection services, it shall be at the sole expense of Pierre Fabre.

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We assessed this arrangement in accordance with ASC 606 and concluded that the promises in the Pierre Fabre Commercialization Agreement represent transactions with a customer. We concluded that the Pierre Fabre Commercialization Agreement includes promises related to the transfer of intellectual property rights in the form of a license, the obligation to participate in the JSC and a material right for optional purchases associated with the manufacture and supply of Ebvallo and the performance of cell-selection services. We concluded that the individual promises are not distinct because Pierre Fabre cannot benefit from the license without the other services and vice versa, since Pierre Fabre is not capable of carrying out the manufacturing and supply and cell selection services on their own, until, and if, the transfer of the related technologies occur. Consequently, the license, the participation in the JSC and the material right related to the manufacture and supply of Ebvallo and related cell selection represents a single performance obligation.

Under the Pierre Fabre Commercialization Agreement, we determined that the $45.0 million upfront payment constituted the entire consideration to be included in the transaction price at the outset of the arrangement. The $40.0 million in development milestones met in December 2022 were added to the transaction price upon meeting the related milestone criteria. The associated commercialization revenue will be recognized over the period during which the material right to these services exists, which would end if the option to transfer the manufacturing technology, once contractually available, is executed. Based on these considerations and our forecast of the timing and associated costs of the optional purchases related to the manufacture and supply of Ebvallo, we estimate the material right related to these services will exist for approximately 12 years. We reassess this evaluation each reporting period.

The remaining potential development and commercial milestone payments that we are eligible to receive were excluded from the transaction price, as the milestone amounts were fully constrained based on the probability of achievement or have not been earned. None of the future royalty and sales-based milestone payments were included in the transaction price, as the potential payments represent sales-based consideration. We reevaluate the transaction price at the end of each reporting period and as uncertain events are resolved or other changes in circumstances occur, and, if necessary, adjust our estimate of the transaction price.

In January 2023, the first order of Ebvallo was shipped to Pierre Fabre. Commercialization revenue associated with shipments of Ebvallo to Pierre Fabre is deferred until we have performed the associated cell selection services.

Deferred revenue activity related to commercialization revenue for the six nine months ended June 30, 2023 September 30, 2023 was as follows:

	(in thousands)	(in thousands)
Deferred revenue, December 31, 2022	$ 85,000	$ 85,000
Additions	4,168	4,174
Recognized into commercialization revenue	(1,654)	(3,634)
Deferred revenue June 30, 2023	87,514	
Deferred revenue September 30, 2023		85,540
Less: deferred revenue – current portion	(11,949)	(11,611)
Deferred revenue – long-term, June 30, 2023	$ 75,565	
Deferred revenue – long-term, September 30, 2023		$ 73,929

During the six nine months ended June 30, 2023 September 30, 2023, we recognized $1.3 3.0 million of revenue that was included in the deferred revenue balance as of December 31, 2022.

Cost of commercialization revenue consists primarily of expenses associated with cell selection services performed for Pierre Fabre, in-license sales-related milestone costs, period manufacturing expenses and the lower of cost or net realizable value adjustments to inventories. All Ebvallo sold to Pierre Fabre to date had been produced prior to receiving regulatory approval of Ebvallo. Costs incurred to produce Ebvallo prior to regulatory approval, referred to as zero cost inventories, have been recorded as research and development expense in our condensed consolidated statement of operations and comprehensive income (loss). Once we begin selling Ebvallo produced after receiving regulatory approval and in a qualified manufacturing facility, and as revenue is recognized on such Ebvallo shipments, cost of commercialization revenue will also include direct and indirect costs related to the production of Ebvallo. Such costs include, but are not limited to, CMO costs, quality testing and validation, materials used in production, and an allocation of compensation, benefits and overhead costs associated with employees involved with production.production.

Under the Pierre Fabre Commercialization Agreement, we conduct an early access program observational study at the sole cost and expense of Pierre Fabre. We recognize the costs incurred associated with this study within research and development expenses, which is directly offset by revenue recorded within license and collaboration revenue. The license and collaboration revenue associated with the early access program for the three and six nine months ended June 30, 2023 September 30, 2023 was $0.2 0.1 million and $0.5 0.6 million, respectively, as compared to $0.6 0.2 million and $1.3 1.6 million for the three and six nine months ended June 30, 2022 September 30, 2022, respectively.

Bayer Agreements

In December 2020, we entered into a research, development and license agreement (Bayer License Agreement) with Bayer AG (Bayer) pursuant to which we granted to Bayer an exclusive, field-limited license under the applicable patents and know-how owned or controlled by us and our affiliates covering or related to ATA2271 and ATA3271 (the Licensed Products).

Under the terms of the Bayer License Agreement, we were responsible at our cost for all mutually agreed preclinical and clinical activities for ATA2271 through the first in human Phase 1 clinical study in collaboration with MSK, following which Bayer was responsible for the further development of ATA2271 at its cost. Bayer was responsible for the development of ATA3271, except for certain mutually agreed preclinical, translational, manufacturing and supply chain activities to be performed by us relating to ATA3271, in each case at Bayer's cost. Bayer was also solely responsible for commercializing the Licensed Products at its cost.

In March 2021, we entered into a Technology Transfer Agreement with Bayer (the Bayer Tech Transfer Agreement), which was contemplated as part of the Bayer License Agreement, to transfer to Bayer the ATA3271 manufacturing process being developed as part of the CMC services in the Bayer License Agreement.

In March 2021, we also entered into a Manufacturing and Supply Agreement with Bayer (the Bayer Manufacturing Agreement), which was contemplated as part of the Bayer License Agreement, to manufacture Phase 1 and 2 allogeneic mesothelin-directed CAR T-cell therapies for Bayer to use in clinical trials at a price based on our costs plus a reasonable margin, which is consistent with our standalone selling price. Collectively, the Bayer License Agreement, the Manufacturing and Supply Agreement and the Technology Transfer Agreement are referred to as "the Bayer Agreements".

In May 2022, Bayer notified us of its decision to terminate the Bayer Agreements, and on August 2, 2022, we entered into the Termination, Amendment and Program Transfer Agreement with which terminated the Bayer Agreements (the Bayer Termination Agreement) with an effective date of July 31, 2022. Upon the termination effective date, full product development and commercialization rights related to ATA2271 and ATA3271 reverted to Atara. In return for certain activities performed by Atara prior to the termination effective date, Bayer paid Atara $4.2 million in September 2022. Utilizing the cost-based input method, we recognized license and collaboration revenue of $50.9 4.2 million and $57.6 61.8 million for the three and six nine months ended June 30, 2022 September 30, 2022, respectively, under the Bayer Agreements. As a result of the termination, no license and collaboration revenue related to the Bayer Agreements was recognized for the three and six nine months ended June 30, 2023 September 30, 2023, and there was no deferred revenue related to the Bayer Agreements as of June 30, 2023 September 30, 2023 or December 31, 2022.

6. Liability Related to the Sale of Future Revenues

In December 2022, we entered into a Purchase and Sale Agreement (the HCRx Agreement) with HCR Molag Fund, L.P., a Delaware limited partnership, (HCRx). In exchange for a payment of $31.0 million (the Investment Amount), net of certain transaction expenses, to Atara, HCRx obtained the right to receive certain Ebvallo royalties and milestone payments payable

by Pierre Fabre under the Pierre Fabre Commercialization Agreement up to an agreed upon multiple of the Investment Amount. We received the Investment Amount, net of certain transaction costs, from HCRx on December 30, 2022.

Under the HCRx Agreement, HCRx is entitled to receive tiered royalties on net sales of Ebvallo in the Initial Territory (as defined in the Pierre Fabre Commercialization Agreement) in amounts ranging from the mid-single digits to double digits based on annual net sales. HCRx is also entitled to certain milestone payments due to Atara from Pierre Fabre. The total royalties and milestones payable to HCRx are capped between 185% and 250% of the Investment Amount, depending upon the timing of such royalties and milestones. Upon meeting the cap amount, HCRx's right to receive royalties and milestone payments will terminate and all rights will revert to Atara. To the extent a certain milestone within the Pierre Fabre Commercialization Agreement is not achieved on or prior to June 30, 2026, we will be required to make a one-time cash payment in the amount of $9.0 million to HCRx, and HCRx shall transfer all of its right, title and interest in this certain $9.0 million milestone payment to Atara. This payment, if required, would be included in the calculation of aggregate payments made to HCRx.

The gross proceeds of the Investment Amount of $31.0 million were recorded as a liability related to the sale of future revenues, net of transaction costs of $0.4 million, and will be amortized using the effective interest method over the life of the arrangement.

To determine the amortization of the recorded liability, we are required to estimate the total amount of future payments to be received by HCRx. The sum of these amounts less the $31.0 million proceeds we received will be recorded as interest expense over the life of the HCRx Agreement. We estimate the effective interest rate used to record non-cash interest expense under the HCRx Agreement based on the estimate of future payments to be received by HCRx. At June 30, 2023 September 30, 2023, the annual effective interest rate was approximately 16 15%. Over the life of the arrangement, the actual effective interest rate will be affected by the amount and timing of the actual and forecasted royalty and milestone payments to HCRx. At each reporting date, we will reassess our estimate of the timing and

amounts of future payments made to HCRx, and prospectively adjust the effective interest rate and amortization of the liability as necessary.

The following table presents the changes in the liability related to the sale of future revenues under the HCRx Agreement for the six nine months ended June 30, 2023 September 30, 2023:

	(in thousands)	(in thousands)
Liability related to sale of future revenues as of December 31, 2022	$ 30,236	$ 30,236
Accretion of interest expense on liability related to sale of future revenues	2,456	3,729
Amortization of debt discount and debt issuance costs	40	61
Repayment of the liability	—	(11)

Liability related to sale of future revenues as of June 30, 2023	32,732	
Liability related to sale of future revenues as of September 30, 2023		34,015
Less: current portion classified within other accrued liabilities	(641)	(763)
Long-term liability related to sale of future revenues	$ 32,091	$ 33,252

7. Restructuring

In August 2022, we announced a reduction in workforce of approximately 20% to focus our activities as an organization centered on research and development. The workforce reduction included total restructuring charges of $6.0 million, comprised primarily of severance payments, wages for the 60-day notice period in accordance with the California Worker Adjustment and Retraining Notification Act and continuing health care coverage for a period of time after separation. In most cases, the severance payments were paid as a lump sum in October 2022. Certain of the notified employees had employment agreements which provided for separation benefits in the form of salary continuation; these benefits are being paid between October 2022 and November 2023. All of the costs are cash expenditures and primarily represent one-time termination benefits.

We recorded the following restructuring charges associated with the reduction in force:

	Three Months Ended June 30,		Six Months Ended June 30,		Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022	2023	2022	2023	2022
	(in thousands)	(in thousands)	(in thousands)		(in thousands)	(in thousands)	(in thousands)	
Research and development expense	$ —	$ —	$ —	$ —	$ —	$ 2,710	$ —	$ 2,710
General and administrative expense	—	—	45	—	—	3,180	45	3,180

Total restructuring charges	$ —	$ —	$ 45	$ —	$ —	$ 0	$ 45	$ 0

The following restructuring liability activity was recorded in connection with the reduction in force for the six nine months ended June 30, 2023 September 30, 2023:

	(in thousands)	(in thousands)
Liability balance, December 31, 2022	$ 1,545	$ 1,545
Restructuring charges	45	45
Cash payments	(1,084)	(1,513)
Liability balance, June 30, 2023	$ 506	
Liability balance, September 30, 2023		$ 77

The liability balance as of June 30, 2023 September 30, 2023 and December 31, 2023 is recorded within other current liabilities on the accompanying condensed consolidated balance sheet.

8. Commitments and Contingencies

MSK In-license Agreements

In June 2015, we entered into an exclusive license agreement with MSK for three clinical stage T-cell therapies. We are required to make payments to MSK based on achievement of specified regulatory and sales-related milestones, as well as mid-single-digit percentage tiered royalty payments based on future sales of products resulting from the development of the licensed product candidates, if any. In addition, under certain circumstances, we are required to make certain minimum annual royalty payments to MSK, which are creditable against earned royalties owed for the same annual period. We are also required to pay a low double-digit percentage of any consideration we receive for sublicensing the licensed rights. The license agreement expires on a product-by-product and country-by-country basis on the latest of: (i) expiration of the last licensed patent rights related to each licensed product, (ii) expiration of any market exclusivity period granted by law with respect to each licensed product, and (iii) a specified number of

years after the first commercial sale of the licensed product in each country. Upon expiration of the license agreement, Atara will retain non-exclusive rights to the licensed products.

In May and December 2018, we licensed additional technology from MSK. We are obligated to make additional milestone payments based on achievement of specified development, regulatory and sales-related milestones, as well as mid-single-digit percentage tiered royalty payments based on future sales of products resulting from the development of the licensed product candidates, if any.

In March 2021, we amended and restated our license agreement with MSK to terminate our license to certain rights and license additional know-how rights not otherwise covered by our existing agreements.

QIMR Berghofer In-license Agreements

In October 2015, we entered into an exclusive license agreement and a research and development collaboration agreement with QIMR Berghofer. Under the terms of the license agreement, we obtained an exclusive, worldwide license to develop and commercialize allogeneic T-cell therapy programs utilizing technology and know-how developed by QIMR Berghofer. On September 19, 2016, the exclusive license agreement and research and development collaboration agreement were amended and restated. Under the amended and restated agreements, we obtained an exclusive, worldwide license to develop and commercialize additional T-cell programs, as well as the option to license additional technology that we exercised in June 2018. We further amended and restated our license agreement and research and development collaboration agreements with QIMR Berghofer in August 2019, August 2020, and in December 2021, in each case, to terminate our license to certain rights. Our current license agreement also provides for various milestone and royalty payments to QIMR Berghofer based on future product sales, if any. Under the terms of our current research and development collaboration agreement, we are also required to reimburse the cost of agreed-upon development activities related to programs developed under the collaboration. These payments are expensed on a straight-line basis over the related development periods. The agreement also provides for various milestone payments to QIMR Berghofer based on achievement of certain developmental and regulatory milestones.

Other In-license and Collaboration Agreements

From time to time, we have entered into other license and collaboration agreements with other parties. For example, we licensed rights related to our next-generation CAR T programs from Moffitt Cancer Center in August 2018, and we agreed to collaborate through sponsored research in connection with each of these licenses. We also licensed rights related to our MSK-partnered next-generation CAR T programs from the National Institutes of Health in December 2018.

Milestones and royalties under each of the above agreements are contingent upon future events and will be recorded as expense when the underlying milestones are achieved or royalties are earned. Sales related milestone and royalty costs related to Ebvallo are recorded in cost of commercialization revenue, whereas regulatory milestone costs are recorded in research and development expense. As of June 30, 2023 September 30, 2023 and December 31, 2022, there were no material outstanding obligations for milestones and royalties under our license and collaboration agreements.

CRL Manufacturing Agreement

In December 2019, we entered into a Commercial Manufacturing Services Agreement (the CRL MSA) with Cognate BioServices, Inc., which was acquired by Charles River Laboratories Inc. (CRL) in March 2021.

Pursuant to the CRL MSA, CRL provides manufacturing services for our product and certain of our product candidates. In February September 2023, we amended the CRL MSA to extend the term until the earlier of September 30, 2023 December 31, 2023 or receipt of certain batches of our product and product candidates.

Fujifilm Master Services and Supply Agreement

In January 2022, we entered into the Fujifilm MSA, which became effective upon the closing of the sale of the ATOM Facility on April 4, 2022 and could extend for up to ten years. Pursuant to the Fujifilm MSA, FDB will supply us with specified quantities of our cell therapy products and product candidates, manufactured in accordance with cGMP standards. We have certain non-cancellable

minimum commitments to purchase products and services over the first five years of the Fujifilm MSA. The Fujifilm MSA does not obligate us to purchase products and product candidates exclusively from FDB.

Other Research, Development and Manufacturing Agreements

We may enter into other contracts in the normal course of business with clinical research organizations for clinical trials, with CMOs for clinical supplies, and with other vendors for preclinical studies, supplies and other services for our operating purposes. These contracts generally provide for termination on notice. As of June 30, 2023 September 30, 2023 and December 31, 2022, there were no material amounts accrued related to contract termination charges.

Minimum Commitments

We have non-cancellable minimum commitments for products and services, subject to agreements with a term of greater than one year with clinical research organizations and CMOs.

We have incurred $ $23.8 .8 million and $13.3 16.1 million against the minimum commitments for the three and six nine months ended June 30, 2023 September 30, 2023, respectively.

As of June 30, 2023 September 30, 2023, and December 31, 2022, we have accrued $10.0 11.0 million and $9.2 million, respectively, in research and development expenses related to minimum purchase commitments.

Indemnification Agreements

In the normal course of business, we enter into contracts and agreements that contain a variety of representations and warranties and provide for indemnification for certain liabilities. The exposure under these agreements is unknown because it involves claims that may be made against us in the future but have not yet been made. To date, we have not paid any claims or been required to defend any action related to our indemnification obligations. However, we may record charges in the future as a result of these indemnification obligations. We also have indemnification obligations to our directors and executive officers for specified events or occurrences, subject to some limits, while they are serving at our request in such capacities. There have been no claims to date and we consider the fair value of these indemnification agreements to be minimal. Accordingly, we did not record liabilities for these agreements as of June 30, 2023 September 30, 2023 and December 31, 2022.

Contingencies

From time to time, we may be involved in legal proceedings, as well as demands, claims and threatened litigation, which arise in the normal course of our business or otherwise. The ultimate outcome of any litigation is uncertain and unfavorable outcomes could have a negative impact on our results of operations and financial condition. Regardless of outcome, litigation can have an adverse impact on us because of the defense costs, diversion of management resources and other factors. We are not currently involved in any material legal proceedings.

9. Stockholders' Equity (Deficit)

Our authorized capital stock consists of 520,000,000 shares, all with a par value of $0.0001 per share, of which 500,000,000 shares are designated as common stock and 20,000,000 shares are designated as preferred stock. There were no shares of preferred stock outstanding as of June 30, 2023 September 30, 2023 and December 31, 2022.

Equity Offerings

As part of our July 2019 underwritten public offering, we issued and sold pre-funded warrants to purchase 2,945,026 shares of common stock in an underwritten public offering pursuant to a shelf registration on Form S-3.

Each pre-funded warrant entitles the holder to purchase one share of common stock at an exercise price of $0.0001 per share and expires seven years from the date of issuance. These warrants were recorded as a component of stockholders' equity (deficit) within additional paid-in capital. Per the terms of the warrant agreement, a holder of the outstanding warrants is not entitled to exercise any portion of any pre-funded warrant if, upon exercise of the warrant, the holder's ownership (together with its affiliates) of our common stock or combined voting power of our securities beneficially owned by such holder (together with its affiliates) would exceed 9.99% after giving effect to the exercise (Maximum Ownership Percentage). Upon at least 61 days' prior notice to us by the holder, any holder may increase or decrease the Maximum Ownership Percentage to any other percentage not to exceed 19.99%. No July 2019 pre-funded warrants were exercised during the three months ended September 30, 2023. During the three and six

nine months ended June 30, 2023 September 30, 2023, 361,260 of the July 2019 pre-funded warrants were exercised and as of June 30, 2023 September 30, 2023 pre-funded warrants to purchase 2,527,266 shares of our common stock from the July 2019 underwritten public offering were outstanding.

As part of the May 2020 underwritten public offering, we issued and sold pre-funded warrants to purchase 2,866,961 shares of common stock in an underwritten public offering pursuant to a shelf registration on Form S-3. Additionally, as part of the December 2020 underwritten public offering, we issued and sold pre-funded warrants to purchase 2,040,816 shares of common stock in an underwritten public offering pursuant to a shelf registration on Form S-3.

The terms of the pre-funded warrants issued and sold as part of the 2020 public offerings were similar to those issued and sold in 2019. No May 2020 or December 2020 pre-funded warrants were exercised during the three months ended

September 30, 2023. During the three and six nine months ended June 30, 2023 September 30, 2023, 1,898,578 and 656,107 of the May 2020 and December 2020 pre-funded warrants, respectively, were exercised. As of June 30, 2023 September 30, 2023, 968,383 and 1,384,709 of the pre-funded warrants to purchase shares of our common stock issued and sold as part of the May 2020 and December 2020 underwritten public offerings, respectively, were outstanding.

ATM Facility Facilities

In November 2021, we entered into a sales agreement (the 2021 ATM Facility) with Cowen and Company, LLC (Cowen), which provides for the sale, in our sole discretion, of shares of our common stock having an aggregate offering price of up to $100.0 million through Cowen, as our sales agent. The issuance and sale of these shares by us pursuant to the 2021 ATM Facility are deemed "at the market" offerings as defined in Rule 415 under the Securities Act of 1933, as amended (the Securities Act), and are registered under the Securities Act. We pay a commission of up to 3.0% of gross sales proceeds of any common stock sold under the 2021 ATM Facility.

During the six nine months ended June 30, 2023 September 30, 2023, we sold an aggregate of 147,930 shares of common stock under the 2021 ATM Facility, at an average price of $4.64 per share, for gross proceeds of $0.7 million and net proceeds of $0.6 million, after deducting commissions and other offering expenses payable by us. As of June 30, 2023 September 30, 2023, $55.2 million of common stock remained available to be sold under the 2021 ATM Facility, subject to certain conditions as specified in the sales agreements. agreement.

In November 2023, we entered into a sales agreement (the 2023 ATM Facility) with Cowen, which provides for the sale, in our sole discretion, of shares of our common stock having an aggregate offering price of up to $100.0 million through Cowen, as our sales agent. The issuance and sale of these shares by us pursuant to the 2023 ATM Facility are deemed "at the market" offerings as defined in Rule 415 under the Securities Act, and we intend to file a registration statement on Form S-3 registering the offer and sale of these shares under the Securities Act (the 2023 Registration Statement). We pay a commission of up to 3.0% of gross sales proceeds of any common stock sold under the 2023 ATM Facility. Upon the effectiveness of the 2023 Registration Statement, the 2021 ATM Facility will terminate, and no further sales will be made under the 2021 ATM Facility.

Equity Incentive Plans

Under the terms of the 2014 Equity Incentive Plan, as amended (the 2014 EIP), we may grant stock options, restricted stock awards (RSAs) and RSUs to employees, directors, consultants and other service providers. RSUs generally vest over threeor four years.

We have granted performance-based RSUs to certain of our employees that provide for the issuance of common stock if specified Company performance criteria related to our clinical programs are achieved. The number of performance-based RSUs that ultimately vests depends upon if and which performance criteria are achieved, as well as the employee's continuous service, as defined in the 2014 EIP, through the date of vesting. The fair value of performance-based RSUs is determined as the closing stock price on the date of grant.

Stock options are granted at prices no less than 100% of the estimated fair value of the shares on the date of grant as determined by the board of directors, provided, however, that the exercise price of an option granted to a 10% shareholder

cannot be less than 110% of the estimated fair value of the shares on the date of grant. Options granted generally vest over three or four years and expire in seven to ten years. We have granted performance-based stock options to certain of our employees that provide for the issuance of a right to purchase a share of common stock if specified Company performance criteria related to product candidate partnerships are achieved. The vesting of performance-based stock options depends upon if and when the performance criteria are achieved, as well as the employee's continuous service as defined in the 2014 EIP, through the date of vesting.

As of June 30, 2023 September 30, 2023, a total of 22,259,975 21,564,328 shares of common stock were reserved for issuance under the 2014 EIP, of which 1,927,307 3,549,685 shares were available for future grant and 20,332,668 18,014,643 shares were subject to outstanding options and RSUs, including performance-based awards.

In February 2018, we adopted the 2018 Inducement Plan (the Inducement Plan), under which we may grant options, stock appreciation rights, RSAs and RSUs to new employees. In November 2020, September 2021 and June 2022 we amended the Inducement Plan to reserve an additional 1,500,000 shares of the Company's common stock for issuance under the Inducement Plan in each case.

As of June 30, 2023 September 30, 2023, 4,971,721 4,847,270 shares of common stock were reserved for issuance under the Inducement Plan, of which 1,725,231 1,869,565 shares were available for future grant and 3,246,490 2,977,705 shares were subject to outstanding options and RSUs.

Restricted Stock Units

The following is a summary of RSU activity under our 2014 EIP and Inducement Plan:

	RSUs		RSUs	
	Shares	Weighted Average Grant Date Fair Value	Shares	Weighted Average Grant Date Fair Value
Balance as of December 31, 2022	6,708,608	$ 10.61	6,708,608	$ 10.61
Granted	5,278,116	$ 3.71	5,472,166	$ 3.64
Forfeited	(669,390)	$ 8.63	(1,343,120)	$ 8.52
Vested	(1,554,968)	$ 10.74	(2,375,066)	$ 9.71
Balance as of June 30, 2023	9,762,366	$ 6.99		

Balance as of September 30, 2023	8,462,588	$ 6.69

As of June 30, 2023 September 30, 2023, there was $62.1 49.7 million of unrecognized stock-based compensation expense related to RSUs that is expected to be recognized over a weighted average period of 2.4 2.2 years.

Stock Options

The following is a summary of stock option activity under our 2014 EIP and Inducement Plan:

	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value (in thousands)	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value (in thousands)
Balance as of December 31, 2022	10,645,555	$ 16.88	6.4	$ 42	10,645,555	$ 16.88	6.4	$ 42
Granted	4,693,897	3.64	—	—	4,693,897	3.64	—	—
Exercised	—	—	—	—	—	—	—	—
Forfeited or expired	(1,522,660)	20.95	—	—	(2,809,692)	16.97	—	—
Balance as of June 30, 2023	13,816,792	$ 11.93	7.6	$ 38				
Balance as of September 30, 2023					12,529,760	$ 11.90	6.2	$ —

Aggregate intrinsic value represents the difference between the closing stock price of our common stock on June 30, 2023 September 30, 2023 and the exercise price of outstanding, in-the-money options. As of June 30, 2023 September 30, 2023, there was $31.4 23.4 million of unrecognized stock-based compensation expense related to stock options that is expected to be recognized over a weighted average period of 2.3 2.1 years. This excludes unrecognized stock-based compensation expense for performance-based stock options that were deemed not probable of vesting in accordance with U.S. GAAP.

Reserved Shares

The following shares of common stock were reserved for future issuance under our equity incentive plans as of June 30, 2023 September 30, 2023:

	Total Shares Reserved
2014 Equity Incentive Plan	22,259,975 21,564,328
2018 Inducement Plan	4,971,721 4,847,270
2014 Employee Stock Purchase Plan	332,735
Total reserved shares of common stock	27,564,431 26,744,333

Stock-based Compensation Expense

Total The following is a summary of stock-based compensation expense related to all employee and non-employee stock awards was as follows: for the periods presented:

	Three Months Ended June 30,		Six Months Ended June 30,		Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022	2023	2022	2023	2022
	(in thousands)		(in thousands)		(in thousands)		(in thousands)	
Research and development	$ 7,195	$ 8,993	$ 13,965	$ 17,499	$ 6,758	$ 7,986	$ 20,723	$ 24,361
General and administrative	5,357	5,124	10,351	10,953	4,385	6,037	14,736	18,114
Total stock-based compensation expense	$ 12,552	$ 14,117	$ 24,316	$ 28,452	$ 11,143	$ 14,023	$ 35,459	$ 42,475

10. Supplemental Balance Sheet Information

Inventories

Inventories consisted of the following as of each period end:

	June 30, 2023	December 31, 2022	September 30, 2023	December 31, 2022
	(in thousands)		(in thousands)	
Raw Materials	$ 2,750	$ 1,214	$ 2,422	$ 1,214
Work-in-process	5,111	372	4,169	372
Total inventories	$ 7,861	$ 1,586	$ 6,591	$ 1,586

Property and equipment, net

Property and equipment consisted of the following as of each period end:

	June 30, 2023	December 31, 2022	September 30, 2023	December 31, 2022
	(in thousands)		(in thousands)	
Leasehold improvements	$ 904	$ 875	$ 904	$ 875
Lab equipment	14,930	14,797	15,361	14,797
Machinery and equipment	572	572	572	572
Computer equipment and software	1,154	1,149	1,279	1,149
Furniture and fixtures	1,258	1,297	1,258	1,297
Construction in progress	708	32	239	32
Property and equipment, gross	19,526	18,722	19,613	18,722
Less: accumulated depreciation and amortization	(14,177)	(12,422)		
Less: accumulated depreciation			(14,985)	(12,422)
Property and equipment, net	$ 5,349	$ 6,300	$ 4,628	$ 6,300

Depreciation expense was $0.9 million and $1.4 1.1 million for the three months ended June 30, 2023 September 30, 2023 and 2022, respectively, and $1.8 2.8 million and $3.0 3.8 million for the six nine months ended June 30, 2023 September 30, 2023 and 2022, respectively.

Other current liabilities

Other current liabilities consisted of the following as of each period end:

	June 30, 2023	December 31, 2022	September 30, 2023	December 31, 2022
	(in thousands)		(in thousands)	
Accrued operating expenses	$ 10,646	$ 7,435	$ 8,299	$ 7,435
Current portion of operating lease liabilities	12,095	12,806	12,409	12,806
Current portion of finance lease liabilities	859	834	887	834
Interest payable	641	—	763	—
Other accrued liabilities	931	319	211	319
Total other current liabilities	$ 25,172	$ 21,394	$ 22,569	$ 21,394

11. Subsequent Events

Reduction in Force

On November 1, 2023, we announced a reduction in force that will reduce our current workforce by approximately 30%. We expect to recognize approximately $7.0 million in total for severance and related benefits for employees laid off under the reduction in force. These charges are primarily one-time termination benefits and are all cash charges. We may also incur other charges or cash expenditures not currently contemplated due to events that may occur as a result of, or associated with, the workforce reduction.

Global Tab-cel Partnership

On October 31, 2023, we entered into an amended and restated Pierre Fabre Commercialization Agreement (A&R Commercialization Agreement). Effectiveness of the A&R Commercialization Agreement is subject to the receipt of clearance under the Hart-Scott Rodino Antitrust Improvements Act of 1976. The A&R Commercialization Agreement is expected to take effect in December 2023.

Pursuant to the A&R Commercialization Agreement, Pierre Fabre's exclusive rights to research, develop, manufacture, commercialize and distribute tab-cel (Ebvallo) will be expanded to include all other countries in the world (Additional Territory) in addition to the Initial Territory (together, the Territory), subject to our performance of certain activities as described below.

During the applicable period specified in the A&R Commercialization Agreement, we will be responsible, at Pierre Fabre's cost, to continue conducting the ongoing Phase 3 ALLELE clinical study and the Phase 2 multi-cohort clinical study. We will also be responsible, at Pierre Fabre's cost, for certain other activities directed to obtaining regulatory approval in the United States for tab-cel for EBV-associated post-transplant lymphoproliferative disease pursuant to the terms of the A&R

Commercialization Agreement. Pierre Fabre will be responsible, at its cost, for obtaining and maintaining all other required regulatory approvals and for commercialization and distribution of tab-cel in the Additional Territory, including conducting any other clinical study required.

Prior to the transfer of manufacturing responsibility to Pierre Fabre, we will be responsible for manufacturing and supplying tab-cel to Pierre Fabre for commercialization in the Territory, at Pierre Fabre's cost. After manufacturing responsibility is transferred to Pierre Fabre and for the remainder of the term of the A&R Commercialization Agreement, Pierre Fabre will be responsible, at its cost, for the manufacture and supply of tab-cel for commercialization in the Territory.

Pursuant to the A&R Commercialization Agreement, Pierre Fabre will pay us an additional upfront cash payment of $20.0 million for the expanded exclusive license grant. We will also be entitled to receive an aggregate of up to $620.0 million in additional milestone payments upon achieving certain regulatory and commercial milestones relating to tab-cel in the Additional Territory. In addition, we will be eligible to receive double-digit tiered royalties as a percentage of net sales of tab-cel (Ebvallo) in the Territory until the later of 12 years after the first commercial sale in such country, the expiration of specified patent rights in such country, or the expiration of all regulatory exclusivity for such Product in such country. Royalty payments may be reduced in certain specified customary circumstances. Royalties and milestones from the commercialization of Ebvallo in the Initial Territory remain subject to the HCRx Agreement.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

You should read the following discussion and analysis of our financial condition and results of operations together with our condensed consolidated financial statements and related notes included elsewhere in our Quarterly Report on Form 10-Q for the quarter ended June 30, 2023 September 30, 2023. This discussion and other parts of this Quarterly Report contain forward-looking statements that involve risk and uncertainties, such as statements of our plans, objectives, expectations and intentions. As a result of many factors, including those factors set forth in the "Risk Factors" section of this Quarterly Report, our actual results could differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

Overview

Atara Biotherapeutics is a leader in T-cell immunotherapy, leveraging its novel allogeneic Epstein-Barr virus (EBV) T-cell platform to develop transformative therapies for patients with cancer and autoimmune disease. Tab-cel (tabelecleucel), our lead program in Phase 3 clinical development in the U.S., has received marketing authorization approval (MAA) under the proprietary name Ebvallo™ for commercial sale in the European Union (EU) by the European Commission (EC) and for commercial sale and use in the United Kingdom (UK) by the Medicines and Healthcare products Regulatory Agency (MHRA). We are the most advanced allogeneic T-cell immunotherapy company and intend to rapidly deliver off-the-shelf treatments to patients with high unmet medical need. Our platform leverages the unique biology of EBV T cells and has the capability to treat a wide range of EBV-driven diseases or other serious diseases through incorporation of engineered chimeric antigen

receptors (CARs) or T-cell receptors (TCRs). Atara is applying this one platform, that does not require TCR or HLA gene editing, to create a robust pipeline. Our strategic priorities are:

- ***Tab-cel®***: Our most advanced T-cell immunotherapy program, tab-cel, has received MAA for commercial sale in the EU and the UK under the proprietary name Ebvallo and is partnered with Pierre Fabre Medicament (Pierre Fabre) for commercialization in Europe and potential commercialization, if approved, worldwide, including in select emerging markets. the U.S. Tab-cel (tabelecleucel) is currently in Phase 3 development in the U.S. for patients with EBV-driven EBV-associated post-transplant lymphoproliferative disease (EBV+ PTLD) who have failed rituximab or rituximab plus chemotherapy, as well as other EBV-driven diseases;
- ***ATA188***: T-cell immunotherapy targeting EBV antigens, believed to be important for the potential treatment of primary and secondary progressive multiple sclerosis, and is currently in Phase 2 development; and
- ***ATA3219***: Allogeneic CAR T targeting CD19, currently in preclinical development, and being developed as a potential best-in-class product intended to target B-cell malignancies, based on a next generation 1XX co-stimulatory domain and the innate advantages of EBV T cells as the foundation for an allogeneic CAR T platform.

In addition to the aforementioned strategic priorities, we also have a number of clinical and preclinical programs, including ATA2271, an autologous CAR T immunotherapy currently in Phase 1 development targeting solid tumors expressing the tumor antigen mesothelin; ATA3271, an allogeneic CAR T immunotherapy targeting mesothelin; and ATA3431, a multi-targeted allogeneic CAR T immunotherapy targeting B-cell malignancies.

Our T-cell immunotherapy platform includes the capability to progress both allogeneic and autologous programs and is potentially applicable to a broad array of targets and diseases. Our off-the-shelf, allogeneic T-cell platform allows for rapid delivery of a T-cell immunotherapy product manufactured in advance of patient need and stored in inventory, with each manufactured lot of cells providing therapy for numerous potential patients. This differs from autologous treatments, in which each patient's own cells must be extracted, genetically modified outside the body and then delivered back to the patient, requiring a complex logistics network. For our allogeneic programs, we select the appropriate set of cells for use based on a patient's unique immune profile. One of our contract manufacturing organizations (CMOs) has completed commercial production qualification activities for tab-cel and our other CMOs are currently in the process of completing commercial production qualification activities for tab-cel while we build inventory according to our commercial product supply strategy.

In October 2021, we entered into the Commercialization Agreement with Pierre Fabre (Pierre Fabre Commercialization Agreement), pursuant to which we granted to Pierre Fabre an exclusive, field-limited license to commercialize and distribute Ebvallo in Europe and select emerging markets in the Middle East, Africa, Eastern Europe and Central Asia following regulatory approval. We retain full rights to tab-cel in other major markets, including North America, Asia Pacific and Latin America. As contemplated by the Pierre Fabre Commercialization Agreement, we entered into (i) a Manufacturing and Supply Agreement (ii) a Pharmacovigilance Agreement (iii) and a Quality Agreement, in each case, with Pierre Fabre to further advance our partnership with Pierre Fabre. In September 2022, we amended the Pierre Fabre Commercialization Agreement and received an additional $30 million milestone payment from Pierre Fabre following EC approval of Ebvallo for EBV+ PTLD and subsequent filing of the MAA transfer to Pierre Fabre, in exchange for, among other things, a reduction in: (i) royalties we are eligible to receive as a percentage of net sales of Ebvallo in the Territory, and (ii) the supply price mark up on Ebvallo purchased by Pierre Fabre. Additionally, we also agreed to extend the time period for provision of certain services to Pierre

Fabre under the Pierre Fabre Commercialization Agreement. In December 2022, we sold a portion of our right to receive royalties and certain milestones in Ebvallo under the Pierre Fabre

Commercialization Agreement to HCR Molag Fund L.P. (HCRx) for a total investment amount of $31.0 million, subject to a repayment cap between 185% and 250% of the total investment amount by HCRx.

On October 31, 2023, we entered into an amended and restated Pierre Fabre Commercialization Agreement (A&R Commercialization Agreement). Effectiveness of the A&R Commercialization Agreement is subject to the receipt of clearance under the Hart-Scott Rodino Antitrust Improvements Act of 1976. The A&R Commercialization Agreement is expected to take effect in December 2023. Pursuant to the A&R Commercialization Agreement, Pierre Fabre's exclusive rights to research, develop, manufacture, commercialize and distribute tab-cel (Ebvallo) will be expanded to include all other countries in the world (Additional Territory) in addition to the Initial Territory (together, the Territory), subject to our performance of certain obligations as described below.

During the applicable period specified in the A&R Commercialization Agreement, we will be responsible, at Pierre Fabre's cost, to continue conducting the ongoing Phase 3 ALLELE clinical study and the Phase 2 multi-cohort clinical study. We will also be responsible, at Pierre Fabre's cost, for certain other activities directed to obtaining regulatory approval in the United States for tab-cel for EBV-associated post-transplant lymphoproliferative disease pursuant to the terms of the A&R Commercialization Agreement. Pierre Fabre will be responsible, at its cost, for obtaining and maintaining all other required regulatory approvals and for commercialization and distribution of tab-cel in the Additional Territory, including conducting any other clinical study required.

Prior to the transfer of manufacturing responsibility to Pierre Fabre, we will be responsible for manufacturing and supplying tab-cel to Pierre Fabre for commercialization in the Territory, at Pierre Fabre's cost. Upon the date manufacturing responsibility is transferred to Pierre Fabre (planned to be at the time of BLA transfer to Pierre Fabre) and throughout the remainder of the term of the A&R Commercialization Agreement, Pierre Fabre will be responsible, at its cost, for the manufacture and supply of tab-cel for commercialization in the Territory. Pursuant to the A&R Commercialization Agreement, Pierre Fabre will pay us an additional upfront cash payment of $20.0 million for the expanded exclusive license grant. We will also be entitled to receive an aggregate of up to $620.0 million in additional milestone payments upon achieving certain regulatory and commercial milestones relating to tab-cel in the Additional Territory. In addition, we will be eligible to receive significant double-digit tiered royalties as a percentage of net sales of tab-cel (Ebvallo) in the Territory until the later of 12 years after the first commercial sale in such country, the expiration of specified patent rights in such country, or the expiration of all regulatory exclusivity for such Product in such country. Royalty payments may be reduced in certain specified customary circumstances. Royalties and milestones from the commercialization of Ebvallo in the Initial Territory remain subject to the HCRx Agreement.

We have also entered into research collaborations with leading academic institutions such as Memorial Sloan Kettering Cancer Center (MSK), and the Council of the Queensland Institute of Medical Research (QIMR Berghofer) and H. Lee Moffitt

Cancer Center and Research Institute (Moffitt) pursuant to which we acquired rights to novel and proprietary technologies and programs.

Our research facilities in Thousand Oaks, California (ARC) and Aurora, Colorado contain our translational and pre-clinical sciences, analytical development and process science functions. These facilities support our product pipeline, process development and leverage our allogeneic cell therapy platform to drive innovation.

In January 2022, we entered into an asset purchase agreement with FUJIFILM Diosynth Biotechnologies California, Inc. (FDB) and, for certain limited purposes, FUJIFILM Holdings America Corporation, to sell all of the Company's right, title and interest in and to certain assets related to the Atara T-Cell Operations and Manufacturing facility (ATOM Facility) located in Thousand Oaks, California for $100 million in cash, subject to potential post-closing adjustments pursuant to the asset purchase agreement (the Fujifilm Transaction). The closing of the Fujifilm Transaction occurred on April 4, 2022. We also entered into a Master Services and Supply Agreement with FDB (Fujifilm MSA) which became effective upon the closing and could extend for up to ten years. Pursuant to the Fujifilm MSA, FDB will supply us with specified quantities of our cell therapy products (if approved) and product candidates, manufactured in accordance with cGMP standards. The Fujifilm MSA does not obligate us to purchase products and product candidates exclusively from FDB.

We also work with Charles River Laboratories (CRL) pursuant to a Commercial Manufacturing Services Agreement (CRL MSA) that we entered into in December 2019. Pursuant to the CRL MSA, CRL provides manufacturing services for our product and certain of our product candidates. In February September 2023, we further amended the CRL MSA to extend the term until the earlier of September 30, 2023 December 31, 2023 or receipt of certain batches of our product and product candidates.

We have non-cancellable minimum commitments for products and services, subject to agreements with a term of greater than one year, with clinical research organizations and CMOs.

In December 2022, we entered into a Purchase and Sale Agreement (HCRx Agreement) with HCR Molag Fund, L.P. (HCRx), a Delaware limited partnership. Pursuant to the terms of the HCRx Agreement, we received a total investment amount of $31.0 million in exchange for HCRx being entitled to receive a portion of the tiered, sales-based royalties for Ebvallo, in amounts ranging from the mid-single digits to significant double digits, as well as certain milestone payments, both otherwise payable by Pierre Fabre to us under the Pierre Fabre Commercialization Agreement. The total royalties and milestones payable to HCRx under the HCRx Agreement are capped between 185% and 250% of the total investment amount by HCRx, dependent upon the timing of such royalties and milestones.

Pipeline

Ebvallo™ / Tab-cel®

Our most advanced T-cell immunotherapy program, tab-cel, is approved by the EC for commercial sale and use in the EU and the UK under the proprietary name Ebvallo. We continue to advance development of tab-cel in the U.S. in a Phase 3 clinical trial for patients with EBV+ PTLD (ALLELE). Tab-cel has received Breakthrough Therapy Designation (BTD) in the U.S. for

the treatment of patients with EBV+ PTLD after hematopoietic cell transplants (HCT) who have failed rituximab and orphan drug designation in the U.S. and UK for the treatment of patients with EBV+ PTLD following HCT or solid organ transplants (SOT).

- In May 2023, the MHRA granted Ebvallo marketing authorization in the UK for the treatment of patients with EBV+ P The marketing authorization was subsequently transferred to Pierre Fabre. Pierre Fabre is progressively launching Ebvallo on a country-by-country basis and patients in Europe are now receiving treatment in the commercial setting
- Following an April a September 2023 meeting with the FDA on chemistry, manufacturing, and controls (CMC), we had continued discussions are aligned with the FDA and addressed on analytical comparability between manufacturing process versions of tab-cel. This alignment supports our ability to pool the outstanding CMC questions. pivotal clinica trial data from different process versions in a tab-cel BLA submission. We have scheduled plan to request a pre-BLA meeting with the FDA in the first quarter of 2024 to potentially resolve the remaining topic discuss various aspects of comparability between clinical and intended commercial process versions of tab-cel which may potentially provide clarity on timing for a potential our proposed BLA submission for tab-cel. and expect to submit the tab-cel BLA in the second quarter of 2024, which will enable us to incorporate the latest tab-cel pivotal data from the Phase 3 ALLELE study.
- We continue to engage In October 2023, we entered into an expanded partnership with and advance discussions wit potential partners Pierre Fabre for the potential commercialization U.S. and remaining global commercial markets for tab-cel for up to $640.0 million and significant double-digit tiered royalties on net sales. In addition, Pierre Fabre will reimburse us for expected tab-cel global development costs through BLA transfer and purchase existing and future t cel inventory from us through the BLA transfer date. Substantially all tab-cel manufacturing, clinical and regulatory activities are planned to transition to Pierre Fabre at the time of tab-cel in the U.S. BLA transfer.
- We continue to pursue development of tab-cel in additional patient populations, with a primary focus on immunodeficiency-associated lymphoproliferative diseases (IA-LPDs), given the commonality of their EBV-driven

mechanism of disease in immunocompromised patients, high unmet medical need and positive clinical data to date with tab-cel.

- We continue to enroll patients in our Phase 2 multi-cohort study which comprises a total of five patient populations, including IA-LPDs and other EBV-driven disease, in both the U.S. and EU. We are investigating potential label expansic opportunities with our Phase 2 multi-cohort study and initial data from this study is expected in the fourth quarter of December 2023.
- Due to the evolving treatment landscape of EBV-driven nasopharyngeal carcinoma (NPC), we are not actively conducting any development activities while we reassess our approach and the development and regulatory pathwa for patients with platinum resistant or recurrent EBV-driven NPC.

ATA188

We continue to progress our development of ATA188, which has received fast track designation from the FDA for treatment of primary progressive multiple sclerosis (PPMS) and secondary progressive multiple sclerosis (SPMS), an allogeneic T-cell immunotherapy targeting EBV antigens believed to be important for the potential treatment of multiple sclerosis (MS).

- In our Phase 2 randomized, double-blind, placebo-controlled study evaluating the efficacy and safety of ATA188 in patients with PPMS and SPMS (EMBOLD), we now expect more than 90 patients to be included in the read out of the study primary endpoint of confirmed disability improvement of Expanded Disability Status Scale (EDSS) at 12 month

other clinical endpoints, additional biomarker data, and longer term results for patients that have completed study v beyond the 12-month primary endpoint. Communication of such data is planned to occur in early November 2023.

- We plan to present new biomarker analyses from the ongoing Phase 1 trial of ATA188 at the International Society of Neuroimmunology (ISNI) Congress in August 2023.
- We continue to plan for Phase 3 readiness, including interacting with the FDA based on two fast track designations, a further developing our proprietary large-scale bioreactor manufacturing process.

ATA3219

We are also developing ATA3219, a potential best-in-class, allogeneic CD19 CAR T immunotherapy targeting B-cell malignancies, leveraging our next-generation 1XX CAR co-stimulatory signaling domain and EBV T-cell platform and does not require TCR or human leukocyte antigen (HLA) gene editing.

- We received a Safe to Proceed letter from the FDA in response to our submission of an IND for the ATA3219 program and plan to start a Phase 1 study in relapsed/refractory B-cell non-Hodgkins's lymphoma in the coming months. mor with preliminary clinical data anticipated for the second half of 2024.
- Our EBV CD19 CAR T program incorporates multiple clinical technologies designed for T-cell memory, robust expansi and anti-tumor efficacy in preclinical studies. We continue to make progress on the ATA3219 manufacturing process scale-up.

Additional Programs and Platform Expansion Activities

In addition to the prioritized programs described above, we have a number of other clinical and preclinical programs.

Our CAR T immunotherapy pipeline include autologous ATA2271 and allogeneic ATA3271 targeting mesothelin, which is a tumor antigen expressed on a number of solid tumors including mesothelioma, ovarian cancer, pancreatic cancer, non-small cell lung cancer and other tumors over-expressing mesothelin.

- MSK is currently conducting an open-label, single-arm Phase 1 clinical study of ATA2271 for patients with advanced mesothelioma.
- We have had been conducting IND-enabling studies for ATA3271, an off-the-shelf, allogeneic CAR T therapy targeting mesothelin using a PD-1 DNR and 1XX CAR co-stimulatory signaling domain through our EBV T-cell platform. In preclinical data for ATA3271, we observed anti-tumor activity that we believe indicated functional persistence and significant survival benefit, and we found no evidence of allocytotoxicity in vivo, suggesting that allogeneic MSLN-CA engineered EBV T cells are a promising approach for the treatment of MSLN-positive cancers. We are not actively conducting any development activities while we reassess our approach for the development of ATA3271.

We are also developing ATA3431, a multi-targeted allogeneic CAR T immunotherapy targeting B-cell malignancies. We are also collaborating with QIMR Berghofer to develop a potential next generation EBV vaccine which is differentiated from earlier EBV vaccine efforts that solely focused on B cell responses to EBV.

We believe our platform will have utility beyond the current set of targets to which it has been directed. We continue to evaluate additional product candidates, including those derived from collaborations with our partners. We also continue to evaluate opportunities to license or acquire additional product candidates or technologies to enhance our existing platform.

Manufacturing

In April 2022, we sold all of our right, title and interest in and to certain assets related to the ATOM Facility location in Thousand Oaks, California to FDB. We also entered into the Fujifilm MSA which became effective in April 2022 and could extend for up to ten years. Pursuant to the Fujifilm MSA, FDB will supply us with specified quantities of our product and product candidates, manufactured in accordance with cGMP standards. The Fujifilm MSA does not obligate us to purchase our product and product candidates exclusively from FDB.

We also work with CRL pursuant to the CRL MSA. CRL provides manufacturing services for our product and certain of our product candidates. In February September 2023, we further amended the CRL MSA to extend the term until the earlier of September 30, 2023 December 31, 2023 or receipt of certain batches of our product and product candidates.

COVID-19 Business Update

We have transitioned a portion of our workforce to a remote, work-from-home model, while maintaining essential in-person laboratory functions in order to advance key research, development and manufacturing priorities. We implemented safety protocols and procedures to support our onsite workforce and our clinical teams work with clinical sites to minimize the impact of the COVID-19 pandemic.

To date, the COVID-19 pandemic has not materially impacted our or our partners' clinical, research and development, regulatory, and manufacturing operations or timelines. The full extent to which the COVID-19 pandemic may impact our business and operations is subject to future developments, which are uncertain and difficult to predict.

For additional information about risks and uncertainties related to the COVID-19 pandemic that may impact our business, financial condition and operations, see the section titled "Risk Factors" under Part II, Item 1A in this Quarterly Report on Form 10-Q.

Financial Overview

We have a limited operating history. Since our inception in 2012, we have devoted substantially all of our resources to identify, acquire and develop our product and product candidates, including conducting preclinical and clinical studies, acquiring or manufacturing materials for clinical studies, and providing general and administrative support for these operations.

Our net losses were $145.9 million $215.7 million and $69.6 million $153.7 million for the six nine months ended June 30, 2023 September 30, 2023 and 2022, respectively. As of June 30, 2023 September 30, 2023, we had an accumulated deficit of $1.8 billion $1.9 billion. Substantially all of our net losses have resulted from costs incurred in connection with our research and

development programs and from general and administrative expenses associated with our operations. As of June 30, 2023 September 30, 2023, our cash, cash equivalents and short-term investments totaled $153.6 million $102.4 million, which we intend to use to fund our operations.

Revenues

We have only just begun to generate commercialization revenues under the Pierre Fabre A&R Commercialization Agreement, following the December 2022 EC approval of Ebvallo. Our commercialization revenue recognized to date is derived from agreements with Pierre Fabre, primarily related to upfront license fees and milestones, and is subject to the terms of the HCRx Agreement. We will do not receive retain any meaningful milestone or royalty payments from Pierre Fabre related to the Initial Territory under the A&R Commercialization Agreement until the applicable royalty cap under the HCRx Agreement is met, if at all. all, or until regulatory approval is achieved in the US or for another market within the Additional Territory. Our license and collaboration revenue recognized to date is primarily derived from agreements with Bayer AG, which terminated as of July 31, 2022.

We expect that any revenue we generate from the Pierre Fabre A&R Commercialization Agreement, subject to the terms of the HCRx Agreement, and any future collaboration and research and license partners will fluctuate from year to year as a result of the timing and number of milestones and other payments.

Cost of commercialization revenue

Cost of commercialization revenue consists primarily of expenses associated with cell selection services performed for Pierre Fabre, in-license sales-related milestone costs, period manufacturing expenses and the lower of cost or net realizable value adjustments to inventories. All Ebvallo sold to Pierre Fabre to date had been produced prior to receiving regulatory approval of

Ebvallo. Costs incurred to produce Ebvallo prior to regulatory approval, referred to as zero cost inventories, have been recorded as research and development expense in our condensed consolidated statement of operations and comprehensive income (loss). Once we begin selling Ebvallo produced after receiving regulatory approval and in a qualified manufacturing facility, and as revenue is recognized on such Ebvallo shipments, cost of commercialization revenue will also include direct and indirect costs related to the production of Ebvallo. Such costs include, but are not limited to, CMO costs, quality testing and validation, materials used in production, and an allocation of compensation, benefits and overhead costs associated with employees involved with production.

Research and Development Expenses

The largest component of our total operating expenses since inception has been our investment in research and development activities, including the preclinical and clinical development of our product candidates. Research and development expenses consist primarily of compensation and benefits for research and development and regulatory support employees, including stock-based compensation; expenses incurred under agreements with contract research organizations and investigative sites that conduct preclinical and clinical studies; the costs of acquiring and manufacturing clinical study

materials and other supplies, including expenses incurred under agreements with CMOs for the manufacture of product candidates prior to receiving regulatory approval to manufacture commercial product; payments under licensing and research and development agreements related to product candidates; other outside services and consulting costs; and information technology and overhead expenses. Research and development costs are expensed as incurred.

We plan to continue investment in the development of our product candidates. Our current planned research and development activities include the following:

- continuing to enroll patients in our Phase 3 clinical study of tab-cel for the treatment of patients with EBV+ PTLD afte HCT and SOT who have failed rituximab;
- process development, testing and manufacturing of drug supply to support clinical and IND-enabling studies;

- continuing development of ATA188 in PMS;
- continuing to develop product candidates based on our next-generation CAR T programs;
- continuing to develop our product candidates in additional indications, including tab-cel for EBV+ cancers;
- continuing to develop other pre-clinical product candidates; and
- leveraging our relationships and experience to in-license or acquire additional product candidates or technologies.

In addition, we believe it is important to invest in the development of new product candidates to continue to build the value of our product candidate pipeline and our business. We plan to continue to advance our most promising early product candidates into preclinical development with the objective to advance these early-stage programs to human clinical studies over the next several years.

Our expenditures on current and future preclinical and clinical development programs are subject to numerous uncertainties in timing and cost to completion. The duration, costs, and timing of clinical studies and development of our product candidates will depend on a variety of factors, including:

- the availability of qualified drug supply for use in our ongoing Phase 3 or other clinical studies;
- the scope, rate of progress, and expenses of our ongoing clinical studies, potential additional clinical studies and othe research and development activities;
- the potential review or reanalysis of our clinical study results;
- future clinical study results;
- uncertainties in clinical study enrollment rates or discontinuation rates of patients, including any potential impact of health epidemics and pandemics;
- potential additional safety monitoring or other studies requested by regulatory agencies;
- changing medical practice patterns related to the indications we are investigating;
- significant and changing government regulation;
- disruptions caused by man-made or natural disasters or public health pandemics or epidemics, including, for exampl the COVID-19 pandemic; and
- the timing and receipt of any regulatory approvals, as well as potential post-market requirements.

The process of conducting the necessary clinical research to obtain approval from the FDA and other regulators is costly and time consuming and the successful development of our product candidates is highly uncertain. The risks and uncertainties associated with our research and development projects are discussed more fully in the section of this report titled "1A. Risk Factors." As a result of these risks and uncertainties, we are unable to determine with any degree of certainty the duration and completion costs of our research and development projects, or if, when, or to what extent we will generate revenues from any of our product candidates that obtain regulatory approval.

General and Administrative Expenses

General and administrative expenses consist primarily of compensation and benefits for legal, human resources, finance, commercial and other general and administrative employees, including stock-based compensation; professional services costs, including legal, patent, human resources, audit and accounting services; other outside services and consulting costs; and information technology and overhead expenses.

Interest Income

Interest income consists primarily of interest earned on our cash, cash equivalents and short-term investments.

Interest Expense

Interest expense consists primarily of interest expense recorded in connection with the HCRx Agreement.

Critical Accounting Policies and Significant Judgments and Estimates

Liability related to the sale of future revenues

To the extent we account for the sale of future revenues as debt in accordance with ASC 470, we amortize the liability and recognize interest expense related to the sale of future revenues using the effective interest rate method over the estimated life of the underlying agreement. The liability and related interest expense are based on our current estimate of expected future payments over the life of the arrangement. We re-assess the amount and timing of expected payments each reporting period using a combination of internal projections and forecasts from external resources and record interest expense on the carrying value of the liability using the imputed effective interest rate. To the extent our estimates of future payments are greater or less than previous estimates or the estimated timing of such payments is materially different than previous estimates, this could impact the amount of interest expense we record each period as well as the amount and classification of the liability. We will account for any such changes by adjusting the effective interest rate on a prospective basis. The assumptions used in determining the expected repayment term of the liability and amortization period requires that we make estimates that could impact the effective interest rate, short-term and long-term classification of the liability and the period over which the liability will be amortized.

Except as set forth above, there have been no significant changes to our critical accounting policies and significant judgments and estimates during the six nine months ended June 30, 2023 September 30, 2023 from those disclosed in our management's discussion and analysis of financial condition and results of operations included in our Annual Report on Form 10-K for the year ended December 31, 2022 filed with the SEC on February 8, 2023.

Results of Operations

Comparison of the Three and Six Nine Months Ended June 30, 2023 September 30, 2023 and 2022

Revenues

Revenue consisted of the following in the periods presented:

	Three Months Ended June 30,			Six Months Ended June 30,			Three Months Ended September 30,			Nine Months Ended September 30,		
	2023	2022	Increase (Decrease)	2023	2022	Increase (Decrease)	2023	2022	Increase (Decrease)	2023	2022	Increase (Decrease)
	(in thousands)			(in thousands)			(in thousands)			(in thousands)		
Commercialization revenue	$ 379	$ —	$ 379	$ 1,767	$ —	$ 1,767	$ 202	$ —	$ 202	$ 3,069	$ —	$ 3,069
License and collaboration revenue	1,656	51,957	(51,301)	50,589	58,963	(58,373)	118	4,459	(4,341)	62,354	63,482	(62,728)
Total revenue	$ 2,035	$ 51,957	$ (49,922)	$ 52,356	$ 58,963	$ (56,606)	$ 320	$ 4,459	$ (4,139)	$ 65,423	$ 63,482	$ 1,941

Commercialization revenues were $0.8 million $2.0 million and $1.7 million $3.7 million for the three and six nine months ended June 30, 2023 September 30, 2023, respectively, as compared to none in the comparative periods. The increases in the 2023 periods were due to the EC marketing authorization for commercial sale and use of Ebvallo in the EU was transferred to Pierre Fabre in February 2023 and no commercialization revenue could be recognized prior to this occurring.

License and collaboration revenues were $0.2 million $0.1 million and $0.5 million $0.6 million for the three and six nine months ended June 30, 2023 September 30, 2023, as compared to $51.6 million $4.5 million and $58.9 million $63.4 million for

the three and six nine months ended June 30, 2022 September 30, 2022, respectively. The decreases in the 2023 periods were primarily due to Bayer having notified us in May 2022 of its decision to terminate the Bayer Agreements, which resulted in the recognition of the remaining deferred revenue related to the Bayer Agreements in the second quarter of 2022. the The only license and collaboration revenue recognized subsequent to the termination of the agreements with Bayer in the third quarter of 2022 has been related to certain early access program cost reimbursements per the Pierre Fabre Commercialization Agreement.

Cost of commercialization revenue

Cost of commercialization revenue consisted of the following in the periods presented:

	Three Months Ended June 30,		Increase (Decrease)	Six Months Ended June 30,		Increase (Decrease)
	2023	2022		2023	2022	
	(in thousands)			(in thousands)		
Cost of commercialization revenue	$ 2,895	$ —	$ 2,895	$ 3,111	$ —	$ 3,111

	Three Months Ended September 30,		Increase (Decrease)	Nine Months Ended September 30,		Increase (Decrease)
	2023	2022		2023	2022	
	(in thousands)			(in thousands)		
Cost of commercialization revenue	$ 2,615	$ —	$ 2,615	$ 5,726	$ —	$ 5,726

Cost of commercialization revenue was $2.9 million $2.6 million and $3.1 million $5.7 million for the three and six nine months ended June 30, 2023 September 30, 2023, respectively, and primarily related to adjustments to reflect current period work-in-process inventory at net realizable value and in-license sales-related milestone expense. Prior to receiving EC regulatory approval for Ebvallo in the EU in December 2022, we recorded all costs incurred in the

manufacture of Ebvallo to be sold upon commercialization as research and development expense. As a result, Ebvallo inventories manufactured before EC regulatory approval, referred to as zero cost inventories, were expensed as research and development and are therefore excluded from the cost of commercialization revenue. Ebvallo manufacturing costs incurred after EC regulatory approval are capitalized into inventory. All commercialization revenue recognized to date relates to zero cost inventories.

Total costs of commercialization revenue for the three and six nine months ended June 30, 2023 September 30, 2023 and 2022 were not significantly impacted as a result of the COVID-19 pandemic.

Research and development expenses

Research and development expenses consisted of the following, by program, in the periods presented:

	Three Months Ended June 30,		Increase (Decrease)	Six Months Ended June 30,		Increase (Decrease)	Three Months Ended September 30,		Increase (Decrease)	Nine Months Ended September 30,		Increase (Decrease)
	2023	2022		2023	2022		2023	2022		2023	2022	
	(in thousands)			(in thousands)			(in thousands)			(in thousands)		
Program-specific expenses												
Tab-cel® expenses	$ 8,451	$ 10,372	$ (5,485)	$ 8,499	$ 20,990	$ (12,491)	$ 6,509	$ 8,764	$ (2,549)	$ 14,958	$ 29,636	$ (15,078)
ATA188 expenses	5,974	7,429	(1,455)	11,873	11,959	(86)	5,775	6,373	(616)	17,630	18,332	(702)
CAR T and other program expenses	2,264	2,027	237	5,234	5,269	(35)	3,138	1,761	1,377	8,588	6,888	1,700
Non program-specific expenses												
Employee and overhead expenses	39,203	42,362	(3,159)	85,982	98,490	(12,508)	38,011	49,823	(11,812)	123,993	148,313	(24,320)

Other non program-specific expenses	3,802	2,465	1,337	6,871	3,315	3,556	3,863	3,704	(66)	10,509	7,019	3,490
Total research and development expenses	$ 41,156	$ 98,647	$ (7,375)	$ 97,611	$ 61,389	$ (4,256)	$ 88,856	$ 57,170	$ (269)	$ 85,508	$ 8,210	$ (33,648)

Tab-cel expenses were $4.5 million $6.1 million and $8.5 million $14.6 million in the three and six nine months ended June 30, 2023 September 30, 2023, as compared to $10.4 million $8.6 million and $21.0 million $29.7 million in the comparative 2022 periods, respectively. The decreases in the 2023 periods were primarily due to the capitalization of tab-cel manufacturing costs to inventory following EC regulatory approval in December 2022 and a decrease in European tab-cel regulatory filing and approval activities.

ATA188 expenses were $6.0 million $5.8 million and $11.9 million $17.6 million in the three and six nine months ended June 30, 2023 September 30, 2023, as compared to $7.4 million $6.4 million and $12.0 million $18.3 million in the comparative 2022 periods, respectively. The three-month decrease is primarily due to a decrease in product development and manufacturing activities. For the six-months nine-months ended June 30, 2023 September 30, 2023, the decrease in product development activity costs and manufacturing activities was partially offset by higher an increase in clinical trial costs, as compared to the six months ended June 30, 2022.cost.

CAR T and other program expenses were $2.6 million $3.4 million and $5.2 million $8.6 million in the three and six nine months ended June 30, 2023 September 30, 2023, as compared to $2.3 million $1.6 million and $5.3 million $6.9 million in the comparative 2022 periods respectively. An increase in The increases were primarily driven by ATA3219 clinical manufacturing costs to support our IND submission and clinical trial start-up activities. For the nine-month period, these increases were largely partially offset by lower ATA3271 IND-enabling activities after program pause following Bayer's notice of termination in the second quarter of 2022.

Non program-specific expenses were $43.0 million $41.6 million and $92.7 million $134.3 million in the three and six nine months ended June 30, 2023 September 30, 2023, as compared to $44.9 million $53.5 million and $101.6 million $155.1 million in the comparative 2022 periods, respectively. The decrease decreases in the 2023 periods were primarily due to lower payroll and related costs, driven by the sale of the ATOM facility and August 2022 reduction in force, partially offset by the cost of CMO manufacturing services and amounts accrued related to minimum commitments as well as an increase in cross-program contract research organizations (CRO) activities following the EU commercial launch of Ebvallo. commitments. Relative to the 2022 comparative period, for the three months ended June 30, 2023 September 30, 2023, payroll and related costs decreased by $5.2 million $5.9 million; facility-related and overhead costs increased by $1.3 million $0.5 million; outside services costs decreased by $6.4 million; and other non-program specific costs remained materially consistent. Relative to the 2022 comparative period, for the nine months ended September 30, 2023, payroll and related costs decreased by $24.6 million;

facility-related and overhead costs decreased by $0.7 million; outside services costs increased by $0.7 million $1.0 million; and other non-program specific costs increased by $1.3 million $3.5 million. Relative to the 2022 comparative period, for the six months ended June 30, 2023, payroll and related costs decreased by $18.7 million; facility-related and overhead costs decreased by $1.2 million; outside services costs increased by $7.4 million; and other non-program specific costs increased by $3.6 million.

Total research and development expenses for the three and six nine months ended June 30, 2023 September 30, 2023 and 2022 were not significantly impacted as a result of the COVID-19 pandemic.

General and administrative expenses

	Three Months Ended September 30,			Nine Months Ended September 30,		
	2023	2022	Increase (Decrease)	2023	2022	Increase (Decrease)
	(in thousands)			(in thousands)		
General and administrative expenses	$ 12,247	$ 18,924	$ (6,677)	$ 39,454	$ 58,308	$ (18,854)

	Three Months Ended June 30,			Six Months Ended June 30,		
	2023	2022	Increase (Decrease)	2023	2022	Increase (Decrease)
	(in thousands)			(in thousands)		
General and administrative expenses	$ 13,335	$ 18,813	$ (5,478)	$ 27,207	$ 39,384	$ (12,177)

General and administrative expenses were $13.3 million $12.2 million and $27.2 million $39.5 million in the three and six nine months ended June 30, 2023 September 30, 2023, as compared to $18.8 million $18.9 million and $39.4 million $58.3 million in the comparative 2022 periods, respectively. The decreases in the 2023 periods were primarily due to lower payroll and related costs as a result of the August 2022 reduction in force and lower outside service costs related to a reduction in US tab-cel commercial activities.

Total general and administrative expenses for the three and six nine months ended June 30, 2023 September 30, 2023 and 2022 were not significantly impacted as a result of the COVID-19 pandemic.

Other income (expense), net

Three Months Ended	Six Months Ended	Three Months Ended September 30,	Nine Months Ended September 30,

	June 30,		Increase (Decrease)	June 30,		Increase (Decrease)			Increase (Decrease)			Increase (Decrease)
	2023	2022		2023	2022		2023	2022		2023	2022	
	(in thousands)						(in thousands)					
Interest income	$ 1,695	$ 704	$ 991	$ 3,749	$ 932	$ 2,817	$ 1,218	$ 973	$ 245	$ 4,715	$ 1,904	$ 2,811
Interest expense	(1,378)	(129)	(1,249)	(2,714)	(133)	(2,581)	(1,395)	(123)	(1,272)	(4,109)	(256)	(3,853)
Other income (expense), net	(10)	(214)	204	(207)	32	(239)	(27)	(309)	282	(234)	(631)	397
Gain on sale of ATOM Facility	—	—	—	—	—	—	—	—	—	—	50,237	(50,237)
Total other income (expense), net	$ 307	$ 361	$ (54)	$ 5,747	$ 810	$ 4,937	$ (204)	$ 541	$ (745)	$ 372	$ 51,254	$ (50,882)

Interest income was $1.7 million $1.2 million and $3.5 million $4.7 million in the three and six nine months ended June 30, 2023 September 30, 2023, as compared to $0.7 million $1.0 million and $0.9 million $1.9 million in the comparative 2022 periods, respectively. The increases in the 2023 periods were primarily due to higher investment yields on our cash, cash equivalents and available-for-sale securities as compared to those for the 2022 periods, partially offset by lower balances of cash, cash equivalents and available-for-sale securities in 2023 as compared to those in the 2022 periods.

Interest expense was $1.4 million and $2.7 million $4.1 million in the three and six nine months ended June 30, 2023 September 30, 2023, as compared to $0.1 million and $0.1 million $0.3 million in the comparative 2022 periods, respectively. The increases higher interest expense in the 2023 periods were primarily due to interest expense recognized on the liability related to the sale of future revenues following us entering into the HCRx Agreement in December 2022.

Other income (expense), net remained materially consistent with the comparative period.

Liquidity and Capital Resources

Sources of Liquidity

Since our inception in 2012, we have funded our operations primarily through the issuance of common and preferred stock, issuance of pre-funded warrants to purchase common stock, upfront fees and milestone payments from the Research, Development and License Agreement with Bayer (Bayer License Agreement) which terminated as of July 31, 2022 and the Pierre Fabre Commercialization Agreement and the sale of our ATOM Facility.

In recent years, we have entered into sales agreements with Cowen and Company, LLC (Cowen). In November 2021, we entered into a sales agreement with Cowen (2021 ATM Facility) which provides for the sale, in our sole discretion, of shares of our common stock having an aggregate offering price of up to $100.0 million, through Cowen, as our sales agent. The issuance and sale of these shares by us pursuant to the 2021 ATM Facility are deemed "at the market" offerings defined in Rule 415 under the Securities Act of 1933, as amended (Securities Act), and were registered under the Securities Act. Commissions of up to 3.0% are due on the gross sales proceeds of the common stock sold under the 2021 ATM Facility.

During the six nine months ended June 30, 2023 September 30, 2023, we sold an aggregate of 147,930 shares of common stock under the 2021 ATM Facility, at an average price of $4.64 per share for gross proceeds of $0.7 million and net proceeds of $0.6 million, after deducting commissions and other offering expenses payable by us.

As of June 30, 2023 September 30, 2023, we had $55.2 million of common stock remaining and available to be sold under the 2021 ATM Facility.

In November 2023, we entered into a sales agreement (the 2023 ATM Facility) with Cowen, which provides for the sale, in our sole discretion, of shares of our common stock having an aggregate offering price of up to $100.0 million through Cowen, as our sales agent. The issuance and sale of these shares by us pursuant to the 2023 ATM Facility are deemed "at the market" offerings as defined in Rule 415 under the Securities Act, and we intend to file a registration statement on Form S-3 registering the offer and sale of these shares under the Securities Act (the 2023 Registration Statement). We pay a commission of up to 3.0% of gross sales proceeds of any common stock sold under the 2023 ATM Facility. Upon the effectiveness of the 2023 Registration Statement, the 2021 ATM Facility will terminate, and no further sales will be made under the 2021 ATM Facility.

We have incurred losses and negative cash flows from operations in each year since inception and have only just begun to generate commercialization revenues under the Pierre Fabre Commercialization Agreement, following the December 2022 EC regulatory approval of Ebvallo, which is subject to the terms of the HCRx Agreement. We will do not receive retain any meaningful milestone or royalty payments from Pierre Fabre until the applicable royalty cap under the HCRx Agreement is met, if at all. We continue to incur significant research and development and other expenses related to our ongoing operations and expect to incur losses for the foreseeable future. As a result, we will need additional capital to fund our operations, which we may raise through a combination of equity offerings, debt financings, other third party funding, marketing and distribution arrangements and other collaborations, strategic alliances and licensing arrangements. We may borrow funds on terms that may include restrictive covenants, including covenants that restrict the operation of our business, liens on assets, high effective interest rates and repayment provisions that reduce cash resources and limit future access to capital markets. In addition, we expect to continue to opportunistically seek access to additional funds through

additional public or private equity offerings or debt financings including by utilizing the 2021 our ATM Facility, facilities, through potential commercialization, collaboration, partnering or other strategic arrangements, or a combination of the foregoing. To the extent that we raise additional capital by issuing equity securities, our stockholders may experience substantial dilution. To the extent that we raise additional capital through commercialization, collaboration or partnering arrangements, we may be required to relinquish some of our rights to our technologies or rights to market and sell our products in certain geographies, grant licenses or other rights on terms that are not favorable to us, or issue equity that may be substantially dilutive to our stockholders.

Cash in excess of immediate requirements is invested in accordance with our investment policy, primarily with a view to liquidity and capital preservation. Currently, our cash, cash equivalents and short-term investments are held in bank and custodial accounts and consist of money market funds, U.S. Treasury, government agency and corporate debt obligations, commercial paper and asset-backed securities.

Our cash, cash equivalents and short-term investments balances as of the dates indicated were as follows:

	June 30, 2023	December 31, 2022	September 30, 2023	December 31, 2022
	(in thousands)		(in thousands)	
Cash and cash equivalents	$ 45,898	$ 92,942	$ 64,791	$ 92,942
Short-term investments	107,744	149,877	37,617	149,877
Total cash, cash equivalents and short-term investments	$ 153,642	$ 242,819	$ 102,408	$ 242,819

Cash Flows

Comparison of the Six Nine Months Ended June 30, 2023 September 30, 2023 and 2022

The following table details the primary sources and uses of cash for each of the periods set forth below:

	Nine Months Ended September 30,	
	2023	2022
	(in thousands)	
Net cash (used in) provided by:		
Operating activities	$ (142,571)	$ (213,550)
Investing activities	113,922	151,738
Financing activities	498	20,794
Net (decrease) increase in cash, cash equivalents and restricted cash	$ (28,151)	$ (41,018)

	Six Months Ended June 30,	
	2023	2022

	(in thousands)	
Net cash (used in) provided by:		
Operating activities	$ (91,225)	$ (148,493)
Investing activities	43,475	92,041
Financing activities	706	21,008
Net (decrease) increase in cash, cash equivalents and restricted cash	$ (47,044)	$ (35,444)

Operating activities

Net cash used in operating activities was $91.2 million $142.6 million in the six nine months ended June 30, 2023 September 30, 2023 as compared to $148.5 million $213.6 million in the comparative 2022 period. The decrease of $57.3 million $71.0 million was primarily due to the $40.0 million received from Pierre Fabre in 2023 for development milestones met in December 2022, with no similar cash flows received in the 2022 comparative period. The remaining decrease was due to lower cash operating expenses in 2023 as compared to 2022, primarily due to lower compensation-related costs resulting from lower headcount driven by the sale of the ATOM facility in April 2022 and the August 2022 reduction in force, partially offset by an increase in cash used in f net working capital from the capitalization of costs into inventory following the December 2022 EC regulatory approval of Ebvallo.

Investing activities

Net cash provided by investing activities in the six nine months ended June 30, 2023 September 30, 2023 consisted primarily of $128.0 million $198.7 million received from maturities and sales of available-for-sale securities, partially offset by $83.6 million used to purchase available-for-sale securities. Net cash provided by investing activities in the comparative 2022 period consisted of $166.4 million $242.3 million received from maturities and sales of available-for-sale securities and $94.8 million in net proceeds received from the sale of the ATOM Facility, partially offset by $165.1 million $181.2 million used to purchase available-for-sale securities and $4.0 million $4.2 million in purchases of property and equipment.

Financing activities

Net cash provided by financing activities in the six nine months ended June 30, 2023 September 30, 2023 primarily consisted of $0.7 million from employee stock award transactions and $0.6 million of net proceeds received from the 2021 ATM Facility, partially offset by $0.5 million $0.7 million in principal payments on finance lease obligations. Net cash provided by financing activities in the comparative 2022 period consisted primarily of $20.5 million of net proceeds received from the 2021 ATM Facility and $1.4 million $1.5 million from employee stock award transactions, partially offset by $0.6 million of taxes paid related to the net share settlement of RSUs.

Operating Capital Requirements and Plan of Operations

We expect that our existing cash, cash equivalents and short-term investments as of June 30, 2023 September 30, 2023, combined with certain anticipated payments from the A&R Commercialization Agreement, will be sufficient enable us to fund our planned operations into the second third quarter of 2024, however, it 2025. Such anticipated payments are estimates based on assumptions and plans that are subject to change and such changes could materially impact our cash runway. These assumptions include the receipt of future payments that are dependent upon the successful filing and approval of the tab-cel BLA, as well as the completion of specific development and regulatory activities by us and actions taken by third parties, and are, therefore, uncertain at this time. In the event that we do not receive our anticipated payments and, as a result, our cash runway is materially impacted, our existing cash, cash equivalents and short-term investments as of September 30, 2023 will not be sufficient to fund our planned operations for at least the next twelve months from the date of issuance of these financial statements. We do not know when, or if, we will generate sufficient revenue from commercialization to offset our operating expenses. We anticipate that we will continue to generate losses for the foreseeable future, and we expect the accumulated losses to increase as we continue the development of, and seek regulatory approvals for, our product candidates and begin to commercialize any approved products. We are subject to all of the risks inherent in the development of new products, and we may encounter unforeseen expenses, difficulties, complications, delays and other unknown factors that may adversely affect our business. We anticipate that we will need to raise substantial additional funding to finance our planned operations. operations in the long-term. These conditions, including the uncertainties surrounding our receipt of certain anticipated payments, raise substantial doubt about our ability to continue as a going concern.

In order to complete the process of obtaining regulatory approval for any of our product candidates that have not received approval, we will require substantial additional funding. We expect to continue to opportunistically seek access to additional funds through additional public or private equity offerings or debt financings, through potential commercialization, collaboration, partnering or other strategic arrangements, or a combination of the foregoing. If we are unable to obtain sufficient funding on acceptable terms, we could be forced to delay, limit, reduce or terminate preclinical studies, clinical studies or other development activities for one or more of our product candidates.

We have based our projections of operating capital requirements on assumptions that may prove to be incorrect and we may use all of our available capital resources sooner than we expect. Because of the numerous risks and uncertainties associated with research, development and commercialization of pharmaceutical products, we are unable to estimate the exact amount of our operating capital requirements. Our future funding requirements will depend on many factors, including, but not limited to:

- the timing, costs and results of our ongoing and planned clinical and preclinical studies for our product candidates;
- our success in establishing and maintaining commercial manufacturing relationships with CMOs;

- the number and characteristics of product candidates that we pursue;
- the outcome, timing and costs of seeking regulatory approvals;
- subject to receipt of regulatory approval, costs associated with the commercialization of our product candidates by c partners and the amount of revenues received from commercial sales of our product candidates;
- the timing of proceeds from, and our ability to perform under, the Pierre Fabre A&R Commercialization Agreement,

subject to the HCRx Agreement, as well as the terms and timing of any future commercialization, collaboration, licens consulting or other arrangements that we may establish;

- the amount and timing of any payments we may be required to make in connection with the licensing, filing, prosecution, maintenance, defense and enforcement of any patents or patent applications or other intellectual prop rights;
- the extent to which we in-license or acquire other products and technologies; and
- the timing of the qualification of our CMOs' manufacturing facilities.

Until we are able to generate a sufficient amount of net cash inflows from operations, which we may never do, meeting our long-term capital requirements is in large part reliant on access to public and private equity and debt capital markets, augmented by cash generated from operations and interest income earned on the investment of our cash balances. We expect to continue to seek access to the equity and debt capital markets to support our development efforts and operations. To the extent that we raise additional capital by issuing equity securities, our stockholders may experience substantial dilution. To the extent that we raise additional funds through commercialization, collaboration or partnering arrangements, we may be required to relinquish some of our rights to our technologies or rights to market and sell our products in certain geographies, grant licenses or other rights on terms that are not favorable to us, or issue equity that may be substantially dilutive to our stockholders.

As a result of economic conditions, general global economic uncertainty, political change and other factors, we do not know whether additional capital will be available when needed, or that, if available, we will be able to obtain additional capital on reasonable terms. If we are unable to raise additional capital due to the volatile global financial markets, general economic uncertainty or other factors, we will be forced to delay, limit, reduce or terminate preclinical studies, clinical studies or other development activities for one or more of our product candidates.

Contractual Obligations and Commitments

Our contractual obligations primarily consist of our obligations under non-cancellable operating and finance leases and contracts we enter into in the normal course of business with clinical research organizations for clinical studies, with CMOs for clinical and commercial materials, and with other vendors for preclinical studies and supplies and other services and products for operating purposes. These contracts generally provide for termination for convenience following a notice period. There have been no material changes to our contractual obligations and commitments reported in our Annual Report on Form 10-K for the year ended December 31, 2022 filed with the SEC on February 8, 2023.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

During the six nine months ended June 30, 2023 September 30, 2023, there were no material changes to our interest rate risk disclosures, market risk disclosures and foreign currency exchange rate risk disclosures reported in our Annual Report on Form 10-K for the year ended December 31, 2022 filed with the SEC on February 8, 2023.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Under the supervision of our Chief Executive Officer and Chief Financial Officer, we evaluated the effectiveness of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act (Exchange Act) as of June 30, 2023 September 30, 2023. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures were effective as of June 30, 2023 September 30, 2023 to ensure that information required to be disclosed by us in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely discussion regarding required disclosures. In designing and evaluating our disclosure controls and procedures, management recognizes that any disclosure controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply its judgment in evaluating the benefits of possible controls and procedures relative to their costs.

Changes in Internal Control over Financial Reporting

There was no change in our internal control over financial reporting identified in connection with the evaluation required by Rules 13a-15(d) and 15d-15(d) of the Exchange Act that occurred during the three months ended June 30, 2023 September 30, 2023 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

None.

Item 1A. Risk Factors

Investing in our common stock involves a high degree of risk. Investors should carefully consider all of the risk factors and uncertainties described below, in addition to the other information contained in this Quarterly Report on Form 10-Q, including the section of this report titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated and combined financial statements and related notes, before investing in our common stock.

The risks described below may not be the only ones relating to our company and additional risks that we currently believe are immaterial may also affect us. If any of these risks, including those described below, materialize, our business, competitive position, reputation, financial condition, results of operations, cash flows and future prospects could be seriously harmed. In these circumstances, the market price of our common stock could decline, and investors may lose all or a part of their investment.

Risks Related to Our Financial Results and Capital Needs

We have incurred substantial losses since our inception and anticipate that we will continue to incur substantial losses for the foreseeable future.

We are a clinical-stage biopharmaceutical company. Investment in biopharmaceutical product development is highly speculative because it entails substantial upfront capital expenditures and significant risk that product candidates will fail to prove effective, gain regulatory approval or become commercially viable. We have one product, Ebvallo, which is approved in the EU and the UK and have generated limited revenues from commercialization, and have incurred significant research, development and other expenses related to our ongoing operations and expect to continue to incur such expenses. As a result, we have incurred significant operating losses in every annual reporting period since our inception. For the six nine months ended June 30, 2023 September 30, 2023, we reported a net loss of $145.9 million $215.7 million.

We do not know when, or if, we will generate sufficient revenue from commercialization to offset our operating expenses. We expect to continue to incur significant expenses and operating losses for the foreseeable future as we continue to research, develop and seek regulatory approvals for our product candidates and any additional product candidates we may acquire, in-license or develop. We may encounter unforeseen expenses, difficulties, complications, delays and other unknown factors that may adversely affect our business. The size of our future net losses will depend, in part, on the rate of change of our expenses and our ability to generate revenues. If any of our product candidates fails in clinical studies or does not gain regulatory approval, or if approved, fails to achieve market acceptance, we may never become profitable. Even if we achieve profitability in the future, we may not be able to sustain profitability in subsequent periods. Our expenses may increase in the future as we continue to invest in research and development of our existing product candidates, investigate and potentially acquire new product candidates.

We have a limited operating history, which may make it difficult to evaluate the success of our business to date and to assess our future viability.

Our operations to date have been limited to organizing and staffing our company, acquiring product and technology rights and conducting product development activities for our product candidates. We have not yet demonstrated our ability to successfully complete any Phase 3 clinical studies, obtain regulatory approval in the U.S., consistently manufacture a commercial scale product or arrange for a third party to do so on our behalf, or conduct sales and marketing activities necessary for successful commercialization for any of our product candidates or arrange for a third party to do so on our behalf. In addition, the adoptive immunotherapy technology underlying our T-cell product candidates, including our next-generation CAR T programs, is new and largely unproven. Any predictions about our future success, performance or viability, particularly in view of the rapidly evolving immunotherapy field, may prove to be inaccurate.

In addition, as a young business, we may encounter unforeseen expenses, difficulties, complications, delays and other known and unknown factors. We expect our financial condition and operating results to continue to fluctuate significantly from quarter to quarter and year to year due to a variety of factors, many of which are beyond our control. Accordingly, any of our quarterly or annual periods' results are not indicative of future operating performance.

We have earned limited commercialization revenues to date. We may never achieve profitability.

To date, we have generated only limited revenues from commercialization. We have regulatory approval for one product, Ebvallo, in the EU and the UK. We have outlicensed out-licensed the commercialization rights to Ebvallo tab-cel (Ebvallo in the EU and the UK UK) to Pierre Fabre

under the amended and restated Pierre Fabre Commercialization Agreement and we have sold certain of our royalty and milestone interests for the Initial Territory under the amended and restated Pierre Fabre Commercialization Agreement, subject to a specified cap, to HCRx pursuant to the HCRx Agreement. Our ability to generate revenues from commercialization and achieve profitability will be subject to the amended and restated Pierre Fabre Commercialization Agreement, the HCRx Agreement and depend on our commercialization partners' ability to successfully commercialize products, including any of our current product and product candidates, and other product candidates that we may develop, in-license or acquire in the future. Our ability to generate revenues from the sale of products and achieve profitability will also depend on a number of additional factors, including our ability to:

- successfully complete development activities, including the necessary clinical studies with positive results;
- complete and submit regulatory submissions to the FDA, EMA or other agencies and obtain regulatory approval for indications for which there is a commercial market;
- develop manufacturing and distribution processes for our novel T-cell immunotherapy product candidates;
- develop commercial quantities of our products, including at acceptable cost levels;
- establish and maintain adequate supply of our products, including cell lines with sufficient breadth to treat patients;
- establish and maintain manufacturing and commercialization relationships with reliable third parties;
- qualify our CMOs' manufacturing facilities such that we can maintain the supply of our products by ensuring adequa manufacturing of bulk drug substances and drug products in a manner that is compliant with global legal and regula requirements;
- achieve market acceptance of and pricing and reimbursement for our products, if any;
- attract, hire and retain qualified personnel;
- protect our rights in our intellectual property and regulatory protections portfolio; and
- find suitable commercialization partners who can obtain coverage and adequate reimbursement from third parties, including government payors, set commercially viable prices, market, sell and distribute our approved products.

Our revenues from Ebvallo or any product candidate for which regulatory approval is obtained will be dependent, in part, upon the size of the markets in the territories for which we gain regulatory approval, the accepted price for the product, the ability to get reimbursement at any price, and the terms and conditions of our commercialization agreement with our partner for that territory. We will do not receive retain any meaningful milestones or royalty payments from Pierre Fabre for Ebvallo in the Initial Territory until the applicable royalty cap under the HCRx Agreement is met, which could take many years, if at all. If the number of our addressable disease patients is not as significant as we estimate, the indication approved by regulatory authorities is narrower than we expect, or the reasonably accepted population for treatment is narrowed by competition, physician choice, treatment guidelines or a reduction in the incidence of the addressable disease, our partners

may not successfully commercialize our products, even if approved. The timing and amount of any milestone and royalty payments we may receive from our partners, as well as the commercial success of our products will depend on, among other things, the efforts, allocation of resources, negotiation of pricing and reimbursement and successful commercialization of our products by our partners. As a result, even if we generate product revenues, we may not become profitable and may need to obtain additional funding to continue operations. If we fail to become profitable or are unable to sustain profitability on a continuing basis, then we may be unable to continue our operations at planned levels and may be forced to reduce our operations.

We will require substantial additional financing to achieve our goals, and a failure to obtain this necessary capital when needed could force us to delay, limit, reduce or terminate our product development or manufacturing efforts.

We expect to expend substantial resources for the foreseeable future to continue the clinical development and manufacturing of our T-cell immunotherapy product candidates, and the advancement and expansion of our preclinical research pipeline. We also expect to continue to expend resources for the development and manufacturing of our product and product candidates and the technology we have licensed or have an exclusive right to license from our partners. These expenditures will include costs associated with research and development, potentially acquiring or licensing new product candidates or technologies, conducting preclinical and clinical studies and potentially obtaining regulatory approvals and manufacturing products. Under the terms of our license agreements with each of our in-license partners, we are obligated to make payments upon the achievement of certain development, regulatory and commercial milestones. In addition, other unanticipated costs may arise. Because the design and outcome of our ongoing, planned and anticipated clinical studies is highly uncertain, we cannot reasonably estimate the actual amounts necessary to successfully complete the development and commercialization of our product and product candidates.

Our future capital requirements depend on many factors, including:

- the scope, progress, results and costs of researching and developing our product candidates, and conducting preclin and clinical studies;
- the timing of, and the costs involved in, obtaining regulatory approvals for our product candidates, if clinical studies successful, including any costs from post-market requirements;
- the cost of contracting for the manufacture of our product and product candidates for clinical studies in preparation regulatory approval and in preparation for commercialization;
- our ability to establish and maintain strategic licensing or other arrangements and the financial terms of such agreements;
- the costs to develop, acquire or in-license future product candidates or technologies;
- the costs involved in preparing, filing, prosecuting, maintaining, expanding, defending and enforcing patent claims, including litigation costs and the outcome of such litigation;
- the timing, receipt and amount of sales of, or royalties on, our product and future products, if any; and
- the emergence of competing technologies or other adverse market developments.

As of June 30, 2023 September 30, 2023, we had total cash, cash equivalents and short-term investments of $153.6 million $102.4 million. We expect that our existing cash, cash equivalents and short-term investments as of June 30, 2023 September 30, 2023, combined with certain anticipated payments from the amended and restated Pierre Fabre Commercialization Agreement, will be sufficient enable us to fund our planned operations into the second third quarter of 2024, however, it 2025. Such anticipated payments are estimates based on assumptions and plans that are subject to change and such changes could materially impact our cash runway. These assumptions include the receipt of future payments that are dependent upon the successful filing and approval of the tab-cel BLA, as well as the completion of specific development and regulatory activities by us and actions taken by third parties, and are, therefore, uncertain at this time. In the event that we do not receive our anticipated payments and, as a result, our cash runway is materially impacted, our existing cash, cash equivalents and short-term investments as of September 30, 2023 will not be sufficient to fund our planned operations for at least the next twelve months from the date of issuance of these financial statements. Our operating plan may change as a result of many factors currently unknown to us, and we may need additional funds sooner than planned. We do not have any committed external source of funds other than milestone and royalty payments that we may receive under the Pierre Fabre A&R Commercialization Agreement, subject to the terms of the HCRx Agreement. We will do not receive retain any meaningful milestone or royalty payments related to the Initial Territory from Pierre Fabre until the applicable royalty cap under the HCRx Agreement is met, if at all. These conditions, including the uncertainties surrounding our receipt of certain anticipated payments, raise substantial doubt about our ability to continue as a going concern.concern for at least 12 months after the issuance of the accompanying condensed consolidated financial statements.

To alleviate the conditions that raise substantial doubt about our ability to continue as a going concern, we plan to secure additional capital, potentially through a combination of public or private security offerings; use of our existing 2021 ATM Facility; facilities; and/or strategic transactions, including, but not limited to, seeking a commercialization partner for tab-cel in the U.S. transactions. We may also need to raise additional funding as required based on the status of our development programs and our projected cash flows. Although we have been successful in raising capital in the past, and expect to continue to raise capital as required, there is no assurance that we will be successful in obtaining sufficient funding on terms acceptable to us to fund continuing operations, if at all, or identify and enter into any strategic transactions that will provide the capital that we will require. If we are unable to obtain sufficient funding on acceptable terms, we could be forced to delay, limit, reduce or terminate preclinical studies, clinical studies or other development activities for one or more of our product candidates, which could have a material adverse effect on our business, results of operations, and financial condition. Accordingly, we have concluded that substantial doubt exists with respect to our ability to continue as a going concern for at least 12 months after the issuance of the accompanying condensed consolidated financial statements.

Raising additional capital may cause dilution to our existing stockholders, restrict our operations or require us to relinquish rights to our product candidates on terms that are unfavorable to us.

We plan to seek required additional capital, and may do so through a variety of means, including through private and public equity offerings and debt financings. For example, in December 2022, we sold certain of our royalty and milestone interests under the Pierre Fabre Commercialization Agreement, subject to a specified cap, to HCRx pursuant to the HCRx Agreement. To the extent that we raise additional capital through the sale of equity or convertible debt securities, or if existing holders of warrants exercise their rights to purchase common stock, the ownership interest of existing stockholders will be

diluted, and the terms may include liquidation or other preferences that adversely affect the rights of stockholders. To the extent equity valuations, including the trading price of our common stock, are depressed as a result of economic disruptions or other uncertainties, for example due to rising inflationary pressures, the ongoing Russian invasion of war in Ukraine, the war in the Middle East or other factors, the potential magnitude of this dilution will increase. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take certain actions, including incurring additional debt, making capital expenditures, entering into licensing arrangements, or declaring dividends. If we raise additional funds from third parties, we may have to relinquish valuable rights to our technologies or product candidates or

grant licenses or other rights on terms that are not favorable to us. If we are unable to raise additional funds through equity or debt financing when needed, we may be required to delay, limit, reduce or terminate our product development efforts for our product candidates, grant to others the rights to develop and market product candidates that we would otherwise prefer to develop ourselves or take other actions that are adverse to our business.

Our 2022 workforce reduction reductions may not result in anticipated savings, could result in total costs and expenses that are greater than expected and could disrupt our business.

In August 2022, we reduced our workforce by approximately 20% across all areas of our company, including members of management. In November 2023, we announced that we plan to implement a further reduction of our workforce by approximately 30%. The reduction reductions in force reflects reflect a prioritization around key research and development programs and the reduction of our expense profile. We may not realize, in full or in part, the anticipated benefits, savings and improvements in our cost structure from our restructuring efforts due to unforeseen difficulties, delays or unexpected costs. If we are unable to realize the expected operational efficiencies and cost savings from the restructuring, our operating results and financial condition would be adversely affected. We also cannot be certain that we will not have to undertake additional workforce reductions or restructuring activities in the future. Furthermore, our cost savings plan may be disruptive to our operations, which could affect our ability to generate product revenue. In addition, our workforce reductions could yield unanticipated consequences, such as attrition beyond planned staff reductions, or disruptions in our day-to-day operations. Our workforce reduction reductions could also harm our ability to attract and retain qualified management, scientific, clinical, and manufacturing personnel who are critical to our business. Any failure to attract or retain qualified personnel could prevent us from successfully developing and commercializing our product candidates in the future, including tab-cel, if approved.

There can be no assurance that we will achieve all of the anticipated benefits of the Fujifilm Transaction and we could face unanticipated challenges.

We may not realize some or all of the anticipated benefits from the Fujifilm Transaction and we may encounter post-closing risks, including associated with the provision of (i) certain transition services to FDB by us and (ii) the provision of services to us by FDB pursuant to the Fujifilm MSA. We may experience increased difficulty and loss of institutional knowledge as a result of the transfer of ATOM Facility employees to FDB in connection with the Fujifilm Transaction, which could harm

our business. During the transition period, the Fujifilm Transaction will require significant time and resources from us which may disrupt our business and distract management from other responsibilities, which may result in losses or continued financial involvement in the ATOM Facility, including through indemnification or other financial arrangements, which could adversely affect our financial results.

Risks Related to the Development of Our Product Candidates

We are generally early in our development efforts and have only a small number of product candidates in clinical development. All of our other product candidates are still in preclinical development. If we or our collaborators are unable to successfully develop, manufacture and commercialize our product or product candidates or experience significant delays in doing so, our business may be materially harmed.

We are generally early in our development efforts, and only a small number of our product candidates are in clinical development. The majority of our product candidates are currently in preclinical development. We have invested substantial resources in identifying and developing potential product candidates, conducting preclinical and clinical studies, manufacturing activities, and preparing for the commercial launch of our product and product candidates. Our ability to generate revenues from the sale of our product and product candidates, if approved, will depend heavily on the successful development, manufacture and our partners' eventual commercialization of our product and product candidates.

The success of our product and product candidates will depend on many factors, including the following:

- completion of preclinical and clinical studies with positive results, including demonstrating the stability, safety, purity and potency of our product candidates to the satisfaction of the FDA or other regulatory agencies;
- receipt of regulatory approvals from applicable authorities, including required authorizations for clinical trials and marketing authorizations;
- protecting our rights in our intellectual property portfolio, including by obtaining and maintaining patent and trade secret protection and regulatory exclusivity for our product candidates;
- establishing or making successful arrangements with third party manufacturers and commercialization partners;
- qualifying our and our CMOs' manufacturing facilities for clinical and commercial manufacturing purposes;

- developing manufacturing and distribution processes for our novel T-cell product candidates and next-generation CA programs;
- contracting with third parties for the manufacture of our product candidates at an acceptable cost;
- contracting with third parties for commercialization of our products on terms favorable to us, if approved by applicable regulatory authorities;
- acceptance of our products, if approved by applicable regulatory authorities, by patients and the medical community

- our partners' ability to obtain and maintain coverage and adequate reimbursement by third-party payors, including government payors, for our products, if approved by applicable regulatory authorities;
- effectively competing with other therapies;

- maintaining a continued acceptable benefit/risk profile of the products following approval; and
- maintaining and growing an organization of scientists and functional experts who can develop our products and technology.

If we do not achieve one or more of these factors in a timely manner or at all, we could experience significant delays or an inability to successfully develop and commercialize our product candidates, which could materially harm our business.

We have been affected by and could be adversely affected in the future by the effects of health epidemics and pandemics, including the COVID-19 pandemic, which could materially and adversely affect our business and operations in the future, as well as the businesses and operations of third parties on which we rely.

Our business could be adversely affected by health epidemics and pandemics, including the COVID-19 pandemic, which presented a substantial public health and economic challenge around the world and has affected, and continues to affect, our employees, patients, communities and business operations, as well as the U.S. economy and financial markets. As a result of the COVID-19 pandemic, we transitioned most of our employees to a work-from-home model. We continue to maintain essential in-person manufacturing and laboratory functions in order to advance key research, development and manufacturing priorities. In connection with these measures, we may be subject to claims based upon, arising out of, or related to COVID-19 and our actions and responses thereto, including any determinations that we may make to continue to operate our offices and facilities where permitted by applicable law. The effects of potential future state executive orders, local shelter-in-place orders, government-imposed quarantines, our work-from-home policies and other similar actions may negatively impact productivity, disrupt our business and delay our clinical programs and timelines, the magnitude of which will depend, in part, on the length and severity of the restrictions and other limitations on our ability to conduct our business in the ordinary course.

Further quarantines, shelter-in-place or similar restrictions and other actions taken by foreign, federal, state and local governments, or the perception that such orders, shutdowns or other restrictions on the conduct of business operations could be reinstated, related to COVID-19, other health epidemics and pandemics, or other infectious diseases, could impact our manufacturing capabilities and third party manufacturing facilities in the United States and other countries, or the availability or cost of materials, which would disrupt our supply chain. In particular, standard transportation channels have been impacted and we and other manufacturing, testing, product disposition, CMOs and external testing laboratories are subject to enhanced risk assessment and mitigation measures. In addition, there have been and may continue to be interruptions in the supply of leukapheresis collections, which supply raw materials used in our products.

Our clinical trials may also be affected by health epidemics and pandemics and have been affected by the COVID-19 pandemic. Clinical site initiation and patient enrollment have experienced delays as a result of the COVID-19 pandemic, including due to the prioritization of hospital resources toward COVID-19 and away from clinical trials or as a result of changing practice patterns that impact the diseases our trials address. Some patients may not be able to comply with clinical trial protocols if quarantines impede patient movement or interrupt healthcare services or if patients are forced to quarantine due to a health epidemic or pandemic. For example, while most clinical trial sites for our studies, including our Phase 3 clinical trial of tab-cel in patients with EBV+ PTLD, remain open to enrollment for patients, some sites have limited the screening and enrollment of new patients due to governmental orders related to COVID-19, or fear of infection of COVID-19, have limited,

and may continue to limit, patients' abilities to access clinical sites. Pandemic-related travel restrictions may also interrupt key clinical trial activities, such as clinical trial site data monitoring and efficacy, safety and translational data collection, processing and analyses. For example, at the outset of the COVID-19 pandemic, we observed a temporary slow-down in stem cell and solid organ transplant volumes, which may have decreased the eligible patient population for the tab-cel Phase 3 study. In April 2020, we initiated a temporary pause in the screening and enrollment of patients in our EMBOLD study of ATA188 in patients with PMS. Although we were able to resume the screening and enrollment of patients in our EMBOLD study and enrolled the first patient in the study in June 2020, the COVID-19 pandemic may require us to

pause screening and enrollment of patients in our clinical studies. Similarly, our ability to recruit and retain principal investigators and site staff who, as healthcare providers, may have heightened exposure to health epidemics and pandemics, may be adversely impacted.

In addition, to the extent the COVID-19 pandemic adversely affect our business and results of operations, it may also have the effect of heightening many of the other risks and uncertainties described elsewhere in this "Risk Factors" section.

Our future success is dependent on the regulatory approval of our product candidates.

We only have one product, Ebvallo, that has gained regulatory approval, an approval in the EU and the UK. Currently, our prioritized clinical-stage product candidates include ATA188 and tab-cel in the U.S. Our business is substantially dependent on our ability to obtain regulatory approval for, and, if approved, to find a partner who can successfully commercialize our product candidates in a timely manner.

Neither we nor our partners can commercialize product candidates in the U.S. without first obtaining regulatory approval for the product candidates from the FDA; similarly, neither we nor our partners can commercialize product candidates outside of the U.S. without obtaining regulatory approval from comparable foreign regulatory authorities. Before obtaining regulatory approvals for the commercial sale of any product candidate for a target indication, we must demonstrate with substantial evidence gathered in preclinical and clinical studies that the product candidate is safe and effective for use for that target indication and that the manufacturing facilities, processes and controls are adequate with respect to such product candidate to assure stability, safety, purity and potency.

The time required to obtain approval by the FDA and comparable foreign regulatory authorities is unpredictable but typically takes many years following the commencement of preclinical and clinical studies and depends upon numerous factors, including the substantial discretion of the regulatory authorities. The novel nature of our product candidates may create further challenges in obtaining regulatory approval. For example, the FDA and comparable foreign regulatory authorities have limited experience with regulating the development and commercialization of T-cell immunotherapies, particularly allogeneic T-cell product candidates, and CAR T therapies, including assessing the comparability of different versions of such product candidates. In addition, approval policies, regulations, regulatory positions or the type and amount of clinical and other data necessary to gain approval may change during the course of a product candidate's clinical

development and throughout regulatory interactions, and may vary among jurisdictions, particularly for novel therapies. The European Commission (EC) and the MHRA has approved the Marketing Authorization Application (MAA) for Ebvallo as a monotherapy treatment for patients with EBV+ PTLD who have received at least one prior therapy under "exceptional circumstances," which is a pathway under which EC and MHRA grant marketing authorization when "comprehensive data cannot be obtained even after authorization." Under the exceptional circumstances marketing authorization, our commercial partner, Pierre Fabre, is subject to ongoing post-marketing obligations to continue confirmation of the benefits of Ebvallo, and if any of our other product candidates are approved under this pathway, we or our future commercial partners will be subject to this obligation. Continuation of the Ebvallo marketing authorization is subject to annual re-assessment. The annual re-assessment will determine whether the Ebvallo marketing authorization should be maintained, changed, or suspended, based on Pierre Fabre's fulfillment of post-marketing obligations and the risk/benefit profile of Ebvallo. If we, or our commercial partners, do not satisfy the ongoing post-marketing obligations or the EC determines that the risk/benefit profile of Ebvallo is not acceptable, the EC may change or suspend the marketing approval for Ebvallo. We have not obtained regulatory approval for any other product candidate, and it is possible that none of our existing product candidates or any future product candidates will ever obtain regulatory approval.

Our product candidates could fail to receive regulatory approval from the FDA or a comparable foreign regulatory authority for many reasons, including:

- disagreement with the design or conduct of our clinical studies;
- failure to demonstrate positive benefit/risk profile of the product candidate for its proposed indication;
- failure to demonstrate the stability, safety, purity and potency of the product candidate;
- failure of clinical sites to conduct the study in accordance with applicable regulatory requirements;
- failure of clinical studies to meet the level of statistical significance required for approval;
- disagreement with our interpretation of data from preclinical studies or clinical studies;
- the insufficiency of data collected from clinical studies of our product candidates to support the submission and filin a BLA or other submission or to obtain regulatory approval;

- inability to reach agreement with the FDA or comparable foreign regulatory authorities on the methodologies for, an assessment of, comparability of different versions of product candidates used in non-pivotal studies, pivotal studies for intended commercial use;
- failure to obtain approval of our manufacturing processes or facilities of third party manufacturers with whom we contract for clinical and commercial supplies or our own manufacturing facility; or
- changes or inconsistencies in the requested or required methodologies, statistical analyses, specification criteria or regulatory submission requirements for a product candidate, including changes to, or inconsistencies with, applicabl industry practice or precedent; or

- changes in the approval policies or regulations that render our preclinical and clinical data insufficient for approval or positions, guidance or feedback communicated by the FDA or comparable foreign regulatory authorities that have a negative impact on the potential approval of a product candidate.

The FDA or a comparable foreign regulatory authority may require information beyond what we plan to provide in or expect to be required for a marketing application, including additional CMC information, preclinical or clinical data to support approval. These requirements may delay or prevent approval and our commercialization plans, or we may decide to abandon the development program. For example, at a Type B meeting in February 2022, we were not able to align with the FDA on comparability between tab-cel product versions used in the pivotal ALLELE study and the intended commercial product. The FDA initially recommended we conduct a new clinical trial with the commercial product to address the lack of alignment on comparability and to gain additional clinical experience with the intended commercial product. In February 2023, we held a meeting with the FDA on clinical aspects for a potential BLA submission for tab-cel. In April 2023, we held a meeting with the FDA to further discuss CMC matters relating to a potential BLA submission for tab-cel, and in August 2023, we have scheduled held an additional meeting with the FDA, where we reached alignment on analytical comparability between clinical and intended commercial process versions of tab-cel. We plan to request a subsequent pre-BLA meeting with the FDA to further discuss to the remaining topic of comparability that may support pooling clinical data from different process versions. While we continue to discuss such potential pathways with the FDA to enable filing various aspects of a proposed BLA for tab-cel without the need for a new clinical trial, we submission. We may not ultimately reach agreement with the FDA on a pathway path to BLA submission with the current clinical dataset. In this case, the conduct of an additional clinical trial or trials in the lead indication may be necessary to support a BLA for tab-cel, which would result in considerable delay to a BLA submission or could lead us not to pursue a BLA submission. Conducting an additional clinical trial, if one was required, may prove too difficult or too expensive, and the process of designing a clinical trial, enrolling enough patients, and completing treatment and data collection under the protocol could take a significant amount of time, effort, and resources. Even if we complete the clinical trial, the study may not meet its prespecified endpoints, and even if it does, the FDA may still disagree that the clinical trial is sufficient to support submission and approval of a BLA for tab-cel, or may consider that the data, while adequate for BLA submission, can support only a more limited indication than that for which we initially applied.

Our development activities and/or commercialization planning with our partners could be harmed or delayed by governmental or regulatory delays due to a variety of factors. These factors include limitations on the availability of governmental and regulatory agency personnel to review regulatory filings or engage with us (caused by global health concerns or otherwise, including the COVID-19 pandemic); changes to governmental regulatory requirements, policies, guidelines or priorities, reallocation, or availability of government resources; or for other reasons, that may significantly delay the FDA's, or other regulatory agencies', ability to review and process any submissions we have filed or may file or cause other regulatory delays. If global health concerns continue to prevent the FDA or other regulatory authorities from conducting their regular inspections, or impact reviews or other regulatory activities, it could significantly impact the ability of the FDA or other regulatory authorities to review and process our regulatory submissions in a timely fashion, which could have a material adverse effect on our business. For example, in response to the COVID-19 pandemic, on March 10, 2020, the FDA announced its intention to postpone most inspections of foreign manufacturing facilities and products inspections of domestic manufacturing facilities through April 2020. On March 18, 2020, the FDA announced its intention to postpone temporarily routine surveillance inspections of domestic manufacturing facilities and provided guidance regarding the conduct of clinical trials. On July 10, 2020, the FDA announced that it is working toward the goal of restarting on-site inspections it deems to be "mission critical." In May 2021, the FDA updated its guidance, first published in August 2020, clarifying how it intends to conduct inspections during the COVID-19 pandemic, including how it plans to determine which inspections are "mission critical." Additionally, on April 14, 2021, the FDA issued a guidance document in which the FDA described its plans to conduct

voluntary remote interactive evaluations of certain drug manufacturing facilities and clinical research sites. According to the guidance, the FDA intends to request such remote interactive evaluations in situations where an in-person inspection would not be prioritized, deemed mission-critical, or where direct inspection is otherwise limited by travel restrictions, but where the FDA determines that remote evaluation would still be appropriate. The FDA intends to use this risk-based assessment system to identify the categories of regulatory activity that can occur within a given geographic area, ranging from mission critical inspections to resumption of all regulatory activities. The FDA has since adjusted its inspection activities in response to the COVID-19 pandemic. On December 29, 2021, the FDA implemented temporary changes to its inspectional inspection activities to ensure the safety of its employees and regulated firms. On February 2, 2022, FDA announced that it would resume domestic surveillance inspections across all product areas on February 7, 2022. In July 2022, FDA published a draft guidance document outlining its policies regarding remote regulatory assessments. We cannot predict whether, and when, FDA will decide to pause or resume inspections due to the COVID-19 pandemic. Regulatory authorities outside

the United States may adopt similar restrictions or other policy measures in response to the COVID-19 pandemic. It is unclear how FDA's and other health agencies' policies and guidance will impact any inspections of our facilities or clinical trial sites involved without with our clinical studies.

If we do obtain approval for tab-cel marketing applications, regulatory authorities may approve any of our product candidates for fewer or more limited indications than we request (including failing to approve the most commercially promising indications), may grant approval contingent on the performance of costly post-marketing clinical studies, or may approve a product candidate with a label that does not include the labeling claims necessary or desirable for the successful commercialization of that product candidate. In addition, the clinical study requirements of the FDA, EMA and other regulatory agencies and the criteria these regulators use to determine the safety and efficacy of a product candidate are determined according to the type, complexity, novelty and intended use and market of the potential

products. The regulatory approval process for novel product candidates, such as our novel T-cell product candidates and next-generation CAR T programs, can be more complex and consequently more expensive and take longer than for other, better known or extensively studied pharmaceutical or other product candidates. Approvals by the EC and FDA of autologous CAR T therapies, such as Novartis' Kymriah® and Gilead's Yescarta®, may not be indicative of what these regulators may require for approval of our therapies. We have multiple clinical trials of our product candidates currently ongoing. If an adverse safety issue, clinical hold or other adverse finding occurs in one or more of our clinical trials, such event could adversely affect our other clinical trials of the same or related product candidates. Moreover, our product candidates may not perform successfully in clinical studies or may be associated with adverse events that distinguish them from those that have previously been approved, such as approved autologous CAR T therapies. For instance, allogeneic product candidates may result in adverse events not experienced with autologous products. Even if a product candidate was is to successfully obtain approval from the FDA and comparable foreign regulatory authorities, any approval might contain significant limitations related to use restrictions for specified age groups, warnings, precautions or contraindications, or may be subject to burdensome post-approval study or risk management requirements. If we are unable to obtain regulatory approval for one

of our product candidates in one or more jurisdictions, or any approval contains significant limitations, we may not be able to obtain sufficient funding to continue the development of that product or generate revenues attributable to that product candidate. Also, any regulatory approval of our current or future product candidates, once obtained, may be withdrawn in a region or country by the respective regulatory agency.

Our T-cell immunotherapy product and product candidates and our next-generation CAR T programs represent new therapeutic approaches that could result in heightened regulatory scrutiny, delays in clinical development or our inability to achieve regulatory approval, commercialization or payor coverage of our product candidates.

Our future success is dependent on the successful development and commercialization of T-cell immunotherapies and our next-generation CAR T programs in general and our development product candidates in particular. Because these programs, particularly our pipeline of allogeneic T-cell product and product candidates that are bioengineered from donors, represent a new approach to immunotherapy for the treatment of cancer and other diseases, developing and commercializing our product candidates subject us to a number of challenges, including:

- obtaining regulatory approval from the FDA and other regulatory authorities, which have limited experience with regulating the development and commercialization of T-cell immunotherapies, particularly allogeneic T-cell products product candidates;
- developing and deploying consistent and reliable processes for procuring blood from consenting third party donors, isolating T cells from the blood of such donors, activating the isolated T cells against a specific antigen, characterizing storing the resulting activated T cells for future therapeutic use, selecting and delivering a sufficient supply and breac of appropriate partially HLA-matched cell line from among the available T-cell lines, and finally infusing these activate cells into patients;
- utilizing these product candidates in combination with other therapies (e.g., immunomodulatory approaches such a checkpoint inhibitors), which may increase the risk of adverse side effects;
- educating medical personnel regarding the potential side effect profile of our product and each of our product candidates, particularly those that may be unique to our allogeneic T-cell product and product candidates and to ou next-generation CAR T programs;
- understanding and addressing variability in the quality of a donor's T cells, which could ultimately affect our ability tc manufacture products and product candidates in a reliable and consistent manner;
- developing processes for the safe administration of these product and product candidates, including long-term follo up and registries, for all patients who receive these product candidates;
- establishing or making arrangements with third party manufacturers to manufacture, or manufacturing on our own, product and product candidates to our specifications and in a timely manner to support our clinical studies and, if approved, commercialization;

- sourcing clinical and, if approved by applicable regulatory authorities, commercial supplies for the materials used to manufacture and process these product and product candidates that are free from viruses and other pathogens tha may increase the risk of adverse side effects;
- developing a manufacturing process and distribution network that can provide a stable supply with a cost of goods t allows for an attractive return on investment;
- establishing favorable terms with commercialization partners that possess appropriate sales and marketing capabilit

ahead of and after obtaining any regulatory approval to gain market acceptance, and obtaining adequate coverage, reimbursement and pricing by third party payors and government authorities; and

- developing therapies for types of diseases beyond those initially addressed by our current product and product candidates.

We cannot be sure that the manufacturing processes used in connection with our T-cell immunotherapy product and product candidates will yield a sufficient supply of satisfactory products that are stable, safe, pure, and potent, or comparable to those T cells historically produced by our partners, be scalable or profitable.

Moreover, actual or perceived safety issues, including adoption of new therapeutics or novel approaches to treatment, may adversely influence the willingness of subjects to participate in clinical studies, or, if one of our product candidates is approved by applicable regulatory authorities, of physicians to subscribe to the novel treatment mechanics or of patients to provide consent to receive a novel treatment despite its regulatory approval. The FDA or other applicable regulatory authorities may require specific post-market studies or additional information that communicates the benefits or risks of our products. New data may reveal new risks of our product candidates at any time prior to or after regulatory approval.

The FDA may also modify or enhance trial requirements which may affect enrollment. In August 2023, the FDA published a guidance document, Informed Consent, Guidance for IRBs, Clinical Investigators, and Sponsors, which supersedes past guidance and finalizes draft guidance on informed consent. The FDA's new guidance presents evolving requirements for informed consent which may affect recruitment and retention of patients in clinical trials. Effects on recruitment and retention of patients may hinder or delay a clinical trial and could cause a significant setback to an applicable program.

Physicians, hospitals and third party payors often are slow to utilize new products, technologies and treatment practices that require additional upfront costs and training. Physicians may not be willing to undergo training on this novel therapy, may decide the therapy is too complex to adopt without appropriate training or not cost-efficient, and may choose not to administer the therapy. Based on these and other factors, hospitals and payors may decide that the benefits of this new therapy do not or will not outweigh its costs.

The results of preclinical studies or earlier clinical studies are not necessarily predictive of future results. Our existing product candidates in clinical studies, and any other product candidate we advance into clinical studies, may not have favorable results in later clinical studies or receive regulatory approval.

Success in preclinical studies and early clinical studies does not ensure that later clinical studies will generate adequate data to demonstrate the efficacy and safety of an investigational drug. Likewise, a number of companies in the pharmaceutical and biotechnology industries, including those with greater resources and experience than us, have suffered significant setbacks in clinical studies, even after seeing promising results in earlier preclinical studies or clinical studies. Despite the results reported in earlier preclinical studies or clinical studies for our product candidates, there can be significant variability in safety and efficacy results between different clinical trials of the same product candidate due to numerous factors. We do not know whether the clinical studies we may conduct, or clinical studies in progress, will demonstrate adequate efficacy and safety to result in regulatory approval to market any product candidates in any particular jurisdiction.

Tab-cel has been predominantly evaluated in single-center studies under investigator-sponsored investigational new drug (INDs) applications held by MSK and in our Expanded Access Programs, utilizing different response criteria and endpoints from those we have used or may utilize in later clinical studies. These Phase 2 clinical studies with tab-cel also enrolled a heterogeneous group of patients with a variety of EBV-driven malignancies, including EBV+ PTLD after HCT and EBV+ PTLD after SOT. These Phase 2 studies were not prospectively designed to evaluate the efficacy of tab-cel in the treatment of a single disease state for which we may later seek approval. Findings from early studies may not be reproducible in late phase studies we conduct. For instance, the current protocol for our ALLELE study in EBV+ PTLD is designed to rule out a 20% ORR as the null hypothesis. This means that if the lower bound of the 95% confidence interval on ORR among patients receiving at least one dose of tab-cel exceeds 20% at the end of the study, then the study would be expected to meet the primary endpoint for the treatment of PTLD. For example, assuming enrollment of 33 patients in a cohort of ALLELE, an observed ORR above approximately 37% would be expected to meet the primary endpoint for that cohort. In addition, our amended ALLELE study protocol includes an interim analysis as well as a final study analysis. We have previously received feedback from the FDA that an interim analysis of the ALLELE study may not be sufficient to support approval of a BLA. Moreover, final study results may not be consistent with interim study results. Furthermore, modifications

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to the total sample size of the ALLELE study and the statistical approach may be necessary depending on the FDA's conclusion regarding outcome of a pre-BLA meeting we plan to request, or in connection with the comparability review of different process versions of tab-cel used in such a BLA submission by the ALLELE study.FDA.

Efficacy data from prospectively designed studies may differ significantly from those obtained from retrospective subgroup analyses. In addition, clinical data obtained from a clinical study with an allogeneic product candidate may not yield the same or better results as compared to an autologous product candidate. If later-stage clinical studies do not produce favorable results, our ability to achieve regulatory approval for any of our product candidates may be adversely impacted. Even if we believe that we have adequate data to support an application for regulatory approval to market any of our product candidates, the FDA or other regulatory authorities may not agree and may require that we conduct additional clinical studies.

Ebvallo was approved under the exceptional circumstances regulatory pathway by the EMA and the MHRA, therefore continuation of the Ebvallo marketing authorizations in the EU and the UK are subject to annual reassessments. The annual reassessments will determine whether the Ebvallo marketing authorization should be maintained, changed, or suspended, based on Pierre Fabre's fulfillment of post-marketing obligations and the risk/benefit profile of Ebvallo.

Interim "top line" and preliminary data from clinical studies that we or our partners may announce or share with regulatory authorities from time to time may change as more patient data become available and are subject to audit and verification procedures that could result in material changes in the final data.

From time to time, we or our partners may announce or share with regulatory authorities interim "top line" or preliminary data from clinical studies. Interim data from clinical studies are subject to the risk that one or more of the clinical outcomes may materially change as patient enrollment continues and more patient data become available. Preliminary or

"top line" data also remain subject to audit and verification procedures that may result in the final data being materially different from the preliminary data previously announced. As a result, interim and preliminary data should be viewed with caution until the final data are available. Adverse differences between preliminary or interim data and final data could impact the regulatory approval of, and significantly harm the prospects of any product candidate that is impacted by the applicable data.

Clinical drug development involves a lengthy and expensive process with an uncertain outcome.

Clinical testing is expensive and can take many years to complete, and its outcome is inherently uncertain. Failure can occur at any time during the clinical study process. Product candidates in later stages of clinical studies may fail to show the desired safety and efficacy traits despite having progressed through preclinical and clinical studies.

We may experience delays in our ongoing or future clinical studies and we do not know whether clinical studies will begin or enroll subjects on time, will need to be redesigned or will be completed on schedule, if at all. There can be no assurance that the FDA or comparable foreign regulatory authorities will not put clinical studies of any of our product candidates on clinical hold in the future. Clinical studies may be delayed, suspended or prematurely terminated for a variety of reasons, such as:

- delays in enrollment due to travel, shelter-in-place or quarantine policies, or other factors, related to the COVID-19 pandemic or other epidemics or pandemics;
- delay or failure in reaching agreement with the FDA or a comparable foreign regulatory authority on a study design t we are able to execute;
- delay or failure in obtaining authorization to commence a study or inability to comply with conditions imposed by a regulatory authority regarding the scope or design of a study;
- delay or failure in reaching agreement on acceptable terms with prospective contract research organizations (CROs) clinical study sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and study sites;
- delay or failure in obtaining institutional review board (IRB) approval or the approval of other reviewing entities, including comparable foreign regulatory authorities, to conduct a clinical study at each site;
- withdrawal of clinical study sites from our clinical studies or the ineligibility of a site to participate in our clinical studie
- delay or failure in recruiting and enrolling eligible subjects to participate in a study;
- delay or failure in subjects completing a study or returning for post-treatment follow-up;
- clinical sites and investigators deviating from study protocol, failing to conduct the study in accordance with regulatc requirements, or dropping out of a study;

- an FDA or other regulatory authority clinical site inspection reveals serious violations of regulations applicable to clin investigations, which may result in requests for additional data analyses and/or rejection of data deemed unreliable;
- inability to identify and maintain a sufficient number of study sites, including because potential study sites may alrea be engaged in competing clinical study programs enrolling the same population;
- failure of our third-party clinical study managers to satisfy their contractual duties, meet expected deadlines or retur

trustworthy data;

- delay or failure in adding new study sites;
- interim results or data that are ambiguous or negative or are inconsistent with earlier results or data;
- feedback from the FDA, the IRB, data safety monitoring boards or comparable foreign authorities, or results from ear stage or concurrent preclinical and clinical studies, that might require modification to the protocol for a study;
- a decision by the FDA, the IRB, comparable foreign authorities, or us, or a recommendation by a data safety monitori board or comparable foreign authority, to suspend or terminate clinical studies for non-compliance with regulatory requirements, safety issues, including a finding that our product candidates have undesirable side effects or other

unexpected characteristics, or a finding that the participants are being exposed to unacceptable health risk, or for any other reason;

- unacceptable benefit/risk profile, unforeseen safety issues or adverse side effects;
- failure to demonstrate a benefit from using a product candidate;
- difficulties in manufacturing or obtaining from third parties sufficient quantities and breadth of appropriate partially HLA matched cell lines from among the available T-cell lines to start or to use in clinical studies;
- lack of adequate funding to continue a study, including the incurrence of unforeseen costs due to enrollment delays, requirements to conduct additional studies or increased expenses associated with the services of our CROs and othe third parties; or
- changes in governmental regulations or administrative actions or lack of adequate funding to continue a clinical stuc

Patient enrollment, a significant factor in the timing of clinical studies, is affected by many factors including:

- the size and nature of the patient population;
- the possibility that the rare diseases that many of our product candidates address are under-diagnosed;
- changing medical practice patterns or guidelines related to the diseases or conditions we are investigating;
- the severity of the disease under investigation;
- our ability to open clinical study sites;
- the proximity of subjects to clinical sites;
- the patient referral practices of physicians;
- the design and eligibility criteria of the clinical study;
- ability to obtain and maintain patient consents;
- risk that enrolled subjects will drop out or die before completion;
- competition for patients from other clinical studies;
- our or our partner's ability to manufacture the requisite materials for a study;
- risk that we do not have appropriately matched HLA cell lines;
- clinicians' and patients' perceptions as to the potential advantages and risks of the drug being studied in relation to other available therapies, including any new drugs that may be approved for the diseases or conditions we are investigating; and

- disruptions caused by man-made or natural disasters or public health pandemics or epidemics, including, for exampl the COVID-19 pandemic.

As an example, we activated additional clinical sites for the ALLELE study of tab-cel over the course of 2018 and increased HLA coverage during this period. As a result, enrollment in our studies was limited in the early part of 2018 and increased through the

course of the year as we increased clinical sites and HLA coverage. However, in May 2019, we announced that enrollment in our Phase 3 studies of tab-cel for patients with EBV+ PTLD was proceeding slower than anticipated. Many of our product candidates are designed to treat rare diseases, and as a result, the pool of potential patients with respect to a given disease is small. We may not be able to initiate or continue to support clinical studies of tab-cel, ATA188 or any other product candidates if we are unable to locate and enroll a sufficient number of eligible participants in these studies as required by the FDA or other regulatory authorities. We experienced some transient delays in clinical trial site initiation and patient enrollment in certain of our clinical trials, including our ALLELE study, as a result of the COVID-19 pandemic. Even if we are able to enroll a sufficient number of patients in our clinical studies, if the pace of enrollment is slower than we expect, the development costs for our product candidates may increase and the completion of our studies may be delayed or our studies could become too expensive to complete.

We rely on CROs, other vendors and clinical study sites to ensure the proper and timely conduct of our clinical studies, and while we have agreements governing their committed activities, we have limited influence over their actual performance. Furthermore, these third parties may also have relationships with other entities, some of which may be our competitors. Reliance on CROs entails risks to which we would not be subject if we conducted our clinical studies ourselves, including reliance on the CRO for clinical site initiation and monitoring, the possibility that the CRO does not maintain the financial resources to meet its obligations under our agreements, the possibility of breach of these agreements by the CRO because of factors beyond our control, including a failure to properly perform their obligations under these agreements, and the possibility of termination or nonrenewal non-renewal of the

agreements by the CROs, based on their own business priorities, at a time that is costly or damaging to us. Our reliance on these third parties for research and development activities will reduce our control over these activities but will not relieve us of our regulatory responsibilities. For example, we will remain responsible for ensuring that each of our clinical trials is conducted in accordance with the general investigational plan, study protocols for the trial, statistical analysis plan and other study-specific documents (for example, monitoring and blinding plans). Moreover, the FDA requires us to comply with standards, commonly referred to as Good Clinical Practice (GCP), International Council for Harmonization of Technical Requirements for Pharmaceuticals for Human Use, or ICH, guidelines, and regulations regarding the informed consent process, safety reporting requirements, data collection guidelines, and other regulations for conducting, recording and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity and confidentiality of trial participants are protected. The EMA also requires us to comply with similar standards. Regulatory authorities enforce these GCP requirements through periodic inspections of trial sponsors, principal investigators

and trial sites. If we or any of our CROs fail to comply with applicable GCP requirements, the clinical data generated in our clinical trials may be deemed unreliable and the FDA, EMA or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. We cannot assure that upon inspection by a given regulatory authority, such regulatory authority will determine that any of our clinical trials comply with GCP and other applicable regulations. In addition, our clinical trials must be conducted with product produced under applicable current Good Manufacturing Practices (cGMP) and current Good Tissue Practices (cGTP) regulations. Our failure to comply with these regulations may require us to conduct new clinical trials, which would delay the marketing approval process. We also are required to register certain ongoing clinical trials and post the results of certain completed clinical trials on a government-sponsored database, ClinicalTrials.gov, within certain timeframes. Failure to do so can result in fines, adverse publicity and civil and criminal sanctions.

If we experience delays or quality issues in the conduct, completion or termination of any clinical study of our product candidates, the approval and commercial prospects of such product candidate will be harmed, and our ability to generate product revenues from such product candidate will be delayed. In addition, any delays in completing our clinical studies will increase our costs, slow down our product candidate development and approval process and jeopardize our ability to generate revenues. Any delays in completing our clinical studies for our product candidates may also decrease the period of commercial exclusivity. In addition, many of the factors that could cause a delay in the commencement or completion of clinical studies may also ultimately lead to the denial of regulatory approval of our product candidates.

Our product and product candidates, the methods used to deliver them or their dosage levels may cause undesirable side effects or have other properties that could delay or prevent their regulatory approval, limit the commercial profile of an approved label or result in significant negative consequences following any regulatory approval.

Undesirable side effects caused by our product and product candidates, their delivery methods or dosage levels could cause us or regulatory authorities to interrupt, delay or halt clinical studies and could result in a more restrictive label or the delay or denial of regulatory approval by the FDA or other comparable foreign regulatory authority. As a result of safety or toxicity issues that we or our partners may experience in our clinical studies, we or our partners may not receive approval to market any product candidates, which could prevent us from ever generating product or royalty revenues for such product candidates or achieving profitability. Results of our studies could reveal an unacceptably high severity and incidence of side effects, or risks that outweigh the benefits of our product and product candidates. In such an event, our studies could be suspended or terminated, and the FDA or comparable foreign regulatory authorities could order us to cease further development of or deny approval of our product candidates for any or all targeted

indications. The drug-related side effects could affect patient recruitment or the ability of enrolled subjects to complete the study or result in potential product liability claims.

Additionally, if any of our product candidates receives regulatory approval, and we or others later identify undesirable side effects caused by such product, a number of potentially significant negative consequences could result, including that:

- we may be forced to suspend marketing of that product;

- regulatory authorities, IRBs, or other clinical trial oversight bodies may place a hold on any ongoing clinical trials;
- regulatory authorities may withdraw or change their approvals of that product;
- regulatory authorities may require additional warnings on the label or limit access of that product to selective specialized centers with additional safety reporting and with requirements that patients be geographically close to th centers for all or part of their treatment;
- we may be required to conduct post-marketing studies;
- we may be required to change the way the product is administered;
- we could be sued and held liable for harm caused to subjects or patients;
- our products may be seized, or we may be required to recall our products;

- our products may become less competitive in the marketplace; and
- our reputation may suffer.

Any of these events could diminish the usage or otherwise limit the commercial success of our product and product candidates and prevent us from achieving or maintaining market acceptance of the affected product candidate, if approved by applicable regulatory authorities.

The market opportunities for our product and product candidates may be limited to those patients who are ineligible for or have failed prior treatments and may be small.

The FDA often approves new cancer therapies initially only for use in patients with relapsed or refractory metastatic disease. We expect to seek initial approval of tab-cel and our other oncology product candidates in this setting. Subsequently, for those products that prove to be sufficiently beneficial, if any, we may seek approval for earlier lines of treatment and potentially as a first line therapy, but there is no guarantee that our product and product candidates, even if approved, would be approved for earlier lines of therapy, and, prior to any such approvals, we will have to conduct additional clinical trials.

Our projections of both the number of people who have the diseases we are targeting, as well as the subset of people with these diseases in a position to receive second or later lines of therapy, and who have the potential to benefit from treatment with our product and product candidates, are based on our current beliefs and estimates. These estimates have been derived from a variety of sources, including scientific literature, surveys of clinicians, patient foundations, or our own market research, and may prove to be incorrect. Further, new studies, product approvals, changes to the standard of care and diagnosis rates or market research scientific understanding of disease burden may change the estimated incidence or prevalence of these diseases, and the number of patients who could benefit from our products may turn out to be lower than expected. Additionally, the potentially addressable patient population for our product candidates may be limited or may not be amenable to treatment with our product candidates. For instance, we expect our product, tab-cel, to initially target a patient population that suffers from aggressive EBV+PTLD and has failed rituximab or rituximab plus chemotherapy. Our commercial partners may have different estimates of the market opportunities for our product or product candidates. At the outset of the COVID-19 pandemic, we initially observed a temporary slow-down in stem cell and solid organ transplant volumes. These reductions were transient, but if a reduction in such volumes resumes or if there are other disruptive factors

that reduce PTLD incidence, such as changes in immunosuppression regimens or treatment of re-activated viremia, it could result in lower PTLD incidence and thus reduce the demand for tab-cel. Even if our product and product candidates obtain significant market share, because the potential target populations are small, we may never achieve profitability without obtaining regulatory approval for additional indications.

We may not be able to obtain or maintain orphan drug exclusivity for our product candidates.

Regulatory authorities in some jurisdictions, including the U.S., EU and the UK, may designate drugs for relatively small patient populations as orphan drugs. Under the Orphan Drug Act, the FDA may designate a product as an orphan drug if it is a drug intended to treat a rare disease or condition, which is generally defined as a patient population of fewer than 200,000 individuals annually in the U.S. The FDA, the EMA, and the MHRA have granted us orphan drug designation for tab-cel for EBV+ PTLD.

Generally, if a product with an orphan drug designation subsequently receives the first regulatory approval for the indication for which it has such designation, the product is entitled to a period of marketing exclusivity, which precludes the FDA, the EMA, and the MHRA from approving another marketing application for the same biologic for the same indication for that time period. The applicable period is seven years in the U.S. and ten years in the EU and the UK. The EU and UK exclusivity periods can be reduced to six years if a drug no longer meets the criteria for orphan drug designation or if the drug is sufficiently profitable so that market exclusivity is no longer justified. These periods may be reduced in the EU based on a new applicable legal framework, currently adopted by the EC and under review by the European Parliament and Council. Orphan drug exclusivity may be lost if the FDA, EMA or MHRA determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantity of the drug to meet the needs of patients with the rare disease or condition. In the U.S., the FDA may still approve a later marketing application blocked by an ongoing period of orphan drug exclusivity in limited circumstances such as a showing of clinical superiority to the product with orphan drug exclusivity or if the FDA finds that the holder of the orphan drug exclusivity has not shown that it can assure the availability of sufficient quantities of the orphan drug to meet the needs of patients with the disease or condition for which the product was approved. As a result, even if one of our product candidates receives orphan exclusivity, the FDA can still approve or license other drugs or biological products that have a different active ingredient for use in treating the same indication or disease.

In addition, Congress is considering updates to the orphan drug provisions of the FDCA in response to a recent 11th Circuit decision. Any changes to the orphan drug provisions could change our opportunities for, or likelihood of success in obtaining, orphan drug exclusivity and could materially adversely affect our business, financial condition, results of operations, cash flows and prospect.

Even if we obtain orphan drug exclusivity for a product, that exclusivity may not be maintained or effectively protect the product from competition because different drugs can be approved for the same condition.

BTD by the FDA and PRIME designation by the EMA may not lead to a faster development or regulatory review or approval process and it does not increase the likelihood that our product candidates will receive marketing approval.

Although we have obtained BTD for tab-cel in the U.S. for treatment of patients with EBV+ PTLD who have failed rituximab, these designations may not lead to faster development or regulatory review and do does not increase our likelihood of success. A breakthrough therapy is defined as a drug or biologic that is intended, alone or in combination with one or more other drugs or biologics, to treat a serious or life-threatening disease or condition and preliminary clinical evidence indicates that the drug, or biologic in our case, may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. For product candidates that have been designated as breakthrough therapies, interaction and communication between the FDA and the sponsor of the study can help to identify the most efficient path for clinical development while minimizing the number of patients placed in ineffective control regimens. Biologics designated as breakthrough therapies by the FDA may also be eligible for other expedited review programs, such as priority review. Based on our BTD, we may pursue a rolling submission strategy for our BLA for tab-cel for EBV+ PTLD in the U.S. While a rolling review process may provide the opportunity for ongoing communications with and feedback from the FDA, it may not result in a faster timeline to marketing approval and has no bearing on whether or not tab-cel is ultimately approved. The FDA may raise issues and pose questions to us that may delay the initiation and completion of our BLA submission, acceptance of the complete BLA for filing, and approval of the BLA. We may not be able to provide a satisfactory or a timely response to FDA questions or we may not be able to gather the required data to prepare our BLA submissions as we plan. If we are unable to address all questions or concerns that the FDA may raise or if we do not have timely access to the data required for the preparation of the BLA, we may not be able to initiate and complete our BLA in a timely manner and ultimately receive FDA approval. In addition, even if we submit our BLA under the rolling review process, the FDA may decide not to review portions of our BLA under the rolling review process until the submission is deemed to be complete.

PRIME designation supports the development and accelerated review by the EMA of new therapies to treat patients with unmet medical need. Despite this designation and the associated opportunity for accelerated assessment, the EMA may decide that additional time is needed for the MAA review and convert the MAA to a standard review timeline. For example, the EMA converted the tab-cel MAA review timeline from accelerated to standard.

Designation as a breakthrough therapy is at the discretion of the FDA, and access to PRIME is at the discretion of the EMA. Receipt of a BTD or PRIME designation for a product candidate may not result in a faster development process, review or approval compared to drugs considered for approval under non-expedited FDA or EMA review procedures and does not assure ultimate approval by either the FDA or EMA. In addition, the FDA or EMA, respectively, may later decide that the product no longer meets the conditions for qualification and rescind the BTD or PRIME designation or decide that the time period for FDA or EMA, respectively, review or approval will not be shortened. For example, in June 2022, FDA published a draft guidance document outlining considerations for the FDA in rescinding BTD for products that no longer meet the requirements for that designation.

A Fast Track designation by the FDA, even if granted for other current or future product candidates, may not lead to a faster development or regulatory review, licensure process and does not increase the likelihood that our product candidates will receive marketing licensure.

We may seek fast track designation for one or more of our future product candidates. In December 2021, ATA188 received fast track designation for treatment of patients with nonactive PPMS and nonactive SPMS. If a drug or biological product is intended for the treatment of a serious or life-threatening disease or condition and it demonstrates the potential to address unmet medical needs for such a disease or condition, the drug sponsor may apply for FDA fast track designation for a particular indication. We may seek fast track designation for our product candidates, but there is no assurance that the FDA will grant this designation to any of our proposed product candidates. Marketing applications submitted by sponsors of products in fast track development may qualify for priority review under the policies and procedures offered by the FDA, but the fast track designation does not assure any such qualification or ultimate marketing licensure by the FDA. The FDA has broad discretion whether or not to grant fast track designation, so even if we believe a particular product candidate is eligible for this designation, there can be no assurance that the FDA would decide to grant it. Even if we do receive fast track designation, we may not experience a faster development process, review or licensure compared to conventional FDA procedures or pathways and receiving a fast track designation does not provide assurance of ultimate FDA licensure. In addition, the FDA may withdraw fast track designation at any time, including if it believes that the designation is no longer supported by data from our clinical development program.

Failure to obtain regulatory or payor approval in international jurisdictions would prevent our product candidates from being marketed abroad.

In addition to regulations in the U.S., to market and sell our products in the EU, the UK, many Asian countries and other jurisdictions, we, or our current or future commercialization partners, must obtain separate regulatory approvals and comply with numerous and varying regulatory requirements, both from a clinical and manufacturing perspective. The approval procedure varies among countries and can involve additional testing. The time required to obtain approval may differ substantially from that required to obtain FDA approval. The regulatory approval process outside the U.S. generally includes all of the risks associated with obtaining FDA approval and may include additional risks. Clinical studies accepted in one country may not be accepted by regulatory authorities in other countries. In addition, many countries outside the U.S. require that a product be approved for reimbursement before it can be approved for sale in that country. A product candidate that has been approved for sale in a particular country may not receive reimbursement approval in that country. We or our partners may not be able to obtain approvals from regulatory authorities or payor authorities outside the U.S. on a timely basis, if at all. Approval by a regulatory agency or payor does not ensure approval by any other regulatory or payor authorities in other countries or jurisdictions. We may not be able to file for regulatory approvals and may not receive necessary approvals to commercialize our products in any market. If we or our partners are unable to obtain approval of any of our product candidates by regulatory or payor authorities in the US, EU, the UK, Asia or elsewhere, the commercial prospects of that product candidate may be significantly diminished.

The proposed revision of the European legislation on pharmaceuticals could lead to uncertainties over the regulatory framework that will be applicable to medicinal products in the EU, including orphan medicinal products.

In April 2023, The European Commission published proposals to revise the existing European legislation on medicinal products (EU Pharma Law Review). The revisions consists of two proposals, a new directive and a new regulation (EU Pharma Law Proposal) that would amend and/or repeal and replace the relevant legislation concerning medicinal products for human use, including legislation concerning orphan medicinal products and medicinal products for pediatric use. The EU pharma Law Review could have a significant impact on the designation of and incentives offered to orphan medicinal products in the EU. If adopted in current form, the EU Pharma Law Proposal would introduce the possibility for the Commission, by way of delegated acts, to derogate from the current prevalence criterion, and introduce specific criteria for certain conditions, due to the characteristics of such conditions or other scientific reasons. The EU Pharma Law Proposal also proposes changes to the current orphan market exclusivity (OME) approach. If adopted in the current form, the EU Pharma Law Proposal would in most cases reduce the duration of the OME, and replace the current system with separate OME periods for each new indication, to a system with a single OME period for each active substance.

Even if our product candidates receive regulatory approval, they may still face future development and regulatory difficulties.

Even if we, or our partners obtain regulatory approval for a product candidate, it would be subject to ongoing requirements by the FDA and comparable foreign regulatory authorities governing the manufacture, quality control, further development, labeling, packaging, storage, distribution, adverse event reporting, safety surveillance, import, export, advertising, promotion, recordkeeping and reporting of safety and other post-marketing information. These requirements include submissions of safety and other post-marketing information and reports, registration, as well as continued compliance by us and/or our CMOs and CROs for any post-approval clinical studies that we conduct. They also include any post-approval requirements or commitments imposed by FDA or comparable foreign regulatory authorities as a condition of approval, or any risk evaluation or mitigation strategies (REMS), if applicable. The safety profile of any product will continue to be closely monitored by the FDA and comparable foreign regulatory

authorities after approval. If the FDA or comparable foreign regulatory authorities become aware of new safety information after approval of any of our product candidates, they may require labeling changes or establishment of a risk evaluation and mitigation strategy, impose significant restrictions on a product's indicated uses or marketing or impose ongoing requirements for potentially costly post-approval studies or post-market surveillance.

In addition, manufacturers of drug products and their facilities are subject to initial and continual review and periodic inspections by the FDA and other regulatory authorities for compliance with current cGMP, current GCP, current cGTP and other regulations. If we or a regulatory agency discover previously unknown problems with a product, such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, a regulatory agency may impose restrictions on that product, the manufacturing facility or us, including requiring recall or withdrawal of the product from the market or suspension of manufacturing. If we, our products, product candidates, or the manufacturing

facilities for our products or product candidates fail to comply with applicable regulatory requirements, a regulatory agency may:

- issue warning letters or untitled letters;
- mandate modifications to promotional materials or require us to provide corrective information to healthcare practitioners;
- require us or our partners to enter into a consent decree, which can include imposition of various fines, reimbursem for inspection costs, required due dates for specific actions and penalties for noncompliance;
- seek an injunction or impose civil or criminal penalties or monetary fines;
- suspend, withdraw or modify regulatory approval;
- suspend or modify any ongoing clinical studies;
- refuse to approve pending applications or supplements to applications filed by us;
- suspend or impose restrictions on operations, including costly new manufacturing requirements; or
- seize or detain products, refuse to permit the import or export of products, require us to withdraw product from the market, or require us to initiate a product recall.

The occurrence of any event or penalty described above may also generate negative publicity or inhibit our ability to successfully commercialize our products.

Advertising and promotion of any product candidate that obtains approval in the U.S. will be heavily scrutinized by the FDA, the Department of Justice (DOJ), the Office of Inspector General of the Department of Health and Human Services (HHS), state attorneys general, members of the U.S. Congress and the public. Additionally, advertising and promotion of any product candidate that obtains approval outside of the U.S. will be heavily scrutinized by comparable foreign entities and stakeholders. For example, a company may not promote "off-label" uses for its drug products. An off-label use is the use of a product for an indication that is not described in the product's FDA-approved label in the U.S. or for uses in other jurisdictions that differ from those approved by the applicable regulatory agencies. Physicians, on the other hand, may prescribe products for off-label uses. Although the FDA and other regulatory agencies do not regulate a physician's choice of drug treatment made in the physician's independent medical judgment, they do restrict promotional communications from companies or their sales force with respect to off-label uses of products for which marketing clearance has not been issued. However, companies may share truthful and not misleading information that is otherwise consistent with a product's FDA approved labeling. Violations, including actual or alleged promotion of our products for unapproved or off-label uses, are subject to enforcement letters, inquiries and investigations, and civil and criminal sanctions by the FDA or comparable foreign bodies. Any actual or alleged failure to comply with labeling and promotion requirements may result in fines, warning letters, mandates to corrective information to healthcare practitioners, injunctions, or civil or criminal penalties.

Regulations, guidelines and recommendations published by various government agencies and organizations may affect the use of our product candidates.

Changes to regulations, recommendations or other guidelines advocating alternative therapies for the indications we treat could result in decreased use of our products. For example, although treatment with EBV-specific T cells is recognized as a recommended treatment for persistent or progressive EBV+ PTLD as set forth in the National Comprehensive Cancer Network Guidelines, future guidelines from governmental agencies, professional societies, practice management groups, private health/science foundations and other organizations could lead to decreased ability to develop our product candidates, or decreased use of our products once approved by applicable regulatory authorities.

We may not successfully identify, acquire, develop or commercialize new potential product candidates.

Part of our business strategy is to expand our product candidate pipeline by identifying and validating new product candidates, which we may develop ourselves, in-license or otherwise acquire from others. In addition, in the event that our existing product candidates do not receive regulatory approval or are not successfully commercialized, then the success of our business will depend on our ability to expand our product pipeline through internal development, in-licensing or other acquisitions. We may be unable to identify relevant product candidates. If we do identify such product candidates, we may be unable to reach acceptable terms with any third party from which we desire to in-license or acquire them. Any product candidates we identify, acquire, in-license, develop, or manufacture may not be safe or effective for their targeted diseases, and may not receive marketing authorization in a timely manner, or at all.

Risks Related to Manufacturing

We are subject to a multitude of manufacturing risks, any of which could substantially increase our costs and limit supply of our product and product candidates.

Concurrently with the in-license of our existing product and product candidates, we acquired manufacturing process know-how and, in some cases, inventory of process intermediates and clinical materials from our partners. Transferring manufacturing processes, testing and associated know-how is complex and involves review and incorporation of both documented and undocumented processes that may have evolved over time. In addition, transferring production to different facilities may require utilization of new or different processes and/or equipment to meet the specific requirements of a given facility. Each stage is retroactively and concurrently verified to be compliant with appropriate regulations. As a result, there is a risk that all relevant know-how was not adequately transferred to us from our partners or that previous execution was not compliant with applicable regulations.

In addition, we need to conduct significant development and scale-up work to transfer these processes and manufacture each of our product and product candidates for various studies, clinical studies and commercial launch readiness. To the extent we elect to transfer manufacturing within our network of third party CMOs, we are required to demonstrate that the product manufactured in the new or "receiving" facility is comparable to the product manufactured in the original or "sending" facility. The inability to demonstrate to each of the applicable regulatory authorities that comparable drug product was manufactured could delay the development of our product candidates.

The processes by which some of our product and product candidates are manufactured were initially developed by our partners for clinical purposes. We intend to evolve the processes developed by our partners and the processes developed by us to support advanced clinical studies and commercialization requirements. We similarly intend to evolve the processes originating at Atara to support advanced clinical studies and commercialization requirements. Developing commercially viable manufacturing processes is a

difficult and uncertain task, and there are risks associated with scaling to the level required for advanced clinical studies or commercialization, including cost overruns, potential problems with process scale-up, process reproducibility, comparability issues, stability, safety, purity and potency issues, regulatory agency review and endorsement processes, consistency and timely availability of reagents or raw materials. The manufacturing facilities in which our product and product candidates will be made could be adversely affected by pandemics, earthquakes and other natural or man-made disasters, equipment failures, labor shortages, power failures, and numerous other factors. In addition, there have been, and there may continue to be, transient interruptions in the supply of raw materials and consumables used in the development and manufacturing of our preclinical and clinical cell therapies related to raw material shortages due to the COVID-19 pandemic or other global pressures, including leukapheresis collections, which supply starting materials used in our product and product candidates, and raw materials and consumables specialized for cell therapy manufacturing. If we are unable to obtain such raw materials or other necessary raw materials in a timely manner, our business operations and manufacturing capabilities could be adversely affected.

The process of manufacturing cellular therapies is susceptible to product loss due to contamination, equipment failure or improper installation or operation of equipment, or vendor or operator error. Even minor deviations from normal manufacturing and distribution processes for any of our product and product candidates could result in reduced production yields, impact to key product quality attributes, and other supply disruptions. Product defects can also occur unexpectedly. If microbial, viral or other contaminations are contamination is discovered in reagents or in our product and product candidates or in the manufacturing facilities in which our product and product candidates are made, these manufacturing facilities may need to be closed for an extended period of time to allow us to investigate and remedy the contamination. For example, we were informed by a CMO of mold contamination in certain manufacturing suites related to the manufacture of finished Ebvallo and tab-cel product at the CMO's facility and we are actively working worked with the CMO to investigate and remediate such contamination issue while production continues continued in other manufacturing suites. Because our T-cell immunotherapy product and product candidates are manufactured from cells collected from the blood of third party donors, the process of manufacturing is susceptible to the availability of the third party donor material. The process of developing products that can be commercialized may be particularly challenging, even if they otherwise prove to be safe and effective. The manufacture of these product and product candidates involves complex processes. Some of these processes require specialized equipment and highly skilled and trained personnel. The process of manufacturing these product and product candidates will be susceptible to additional risks, given

the need to maintain aseptic conditions throughout the manufacturing process. Contamination with viruses or other pathogens in either the donor material or materials utilized in the manufacturing process or ingress of microbiological material at any point in the process may result in contaminated or unusable product. Viral contaminants may also arise in recombinant viral reagent production systems used to manufacture viral reagents used to manufacture product and product candidates. These types of contaminations could result in delays in the manufacture of products which could result in delays in the development of our product candidates. These contaminations could also increase the risk of adverse side effects. Furthermore, our allogeneic products ultimately consist of many individual cell intermediate or cell product lots, each with a different HLA profile. As a result, the selection and distribution of the appropriate cell product lot for therapeutic use in a patient requires close coordination between clinical operations, supply chain and quality assurance personnel.

Any adverse developments affecting our, or our CMOs' manufacturing operations for our product and product candidates may result in lot failures, inventory shortages, shipment delays, product withdrawals or recalls or other interruptions in the supply of our drug product which could delay the development of our product candidates or our ability to supply product to our commercial partners, including Pierre Fabre. We may also have to write off inventory, incur other charges and expenses for supply of drug product that fails to meet specifications, undertake costly remediation efforts, or seek more costly manufacturing alternatives. Inability to meet the demand for our product and product candidates could damage our reputation and the reputation of our products among physicians, healthcare payors, patients or the medical community that supports our product development efforts, including hospitals and outpatient clinics.

Delays in receiving regulatory approvals for product candidates produced at our CMOs' facilities could delay our development plans and thereby limit our ability to generate revenues.

The research and development and process and analytical development labs within ARC and our facility in Aurora, Colorado, currently support our preclinical and mid/late development activities. Product-specific qualification to support clinical development is complete and commercial production qualification activities are ongoing at our CMOs' facilities. If the appropriate regulatory approvals for manufacturing product candidates at our CMOs' facilities are delayed, we may not be able to manufacture sufficient quantities of our product candidates, which would limit our development activities and our opportunities for growth.

In addition to the similar manufacturing risks described in "Risks Related to Our Dependence on Third Parties," our facilities, and our CMOs' facilities, will be subject to ongoing, periodic inspection by the FDA, EMA or other comparable regulatory agencies to ensure compliance with cGMP and GTP. Our, or our partner's, failure to follow and document adherence to these regulations or other regulatory requirements may lead to significant delays in the availability of products for clinical or, in the future, commercial

use, may result in the termination of or a hold on a clinical study, or may delay or prevent filing or approval of commercial marketing applications for our product candidates. We also may encounter problems with the following:

- achieving adequate inventory of clinical-grade materials that meet regulatory agency standards or specifications witl consistent and acceptable production yield and costs;

- shortages of qualified personnel, raw materials or key contractors; and
- achieving and maintaining ongoing compliance with cGMP regulations and other requirements of the FDA, EMA or o comparable regulatory agencies.

Failure to comply with applicable regulations could also result in sanctions being imposed on us, including fines, injunctions, civil penalties, a requirement to suspend or put on hold one or more of our clinical studies, failure of regulatory authorities to grant marketing approval of our product candidates, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of product candidates, operating restrictions and criminal prosecutions, any of which could harm our business.

Developing advanced manufacturing techniques and process controls is costly, time consuming and is required to fully utilize our or our CMOs' facilities. Failure to advance manufacturing techniques and process controls could lead to a delay in obtaining approval for our product candidates. Without further investment, advances in manufacturing techniques may render the facilities and equipment that manufacture our product candidates inadequate or obsolete.

A number of the product candidates in our portfolio, if approved by applicable regulatory authorities, may require significant commercial supply to meet market demand. In these cases, we may need to increase, or "scale up," the production process by a significant factor over the initial level of production. If we are unable to do so, are delayed, or if the cost of this scale up is not economically feasible for us or we cannot find a third party supplier, we may not be able to produce our product candidates in sufficient quantities to meet future demand.

If one or more of our CMO's facilities is damaged or destroyed or production at these facilities is otherwise interrupted, our business would be negatively affected.

If any of our CMOs' manufacturing facilities, or the equipment in any such facilities, is either damaged or destroyed, we may not be able to quickly or inexpensively replace such manufacturing capacity or replace it at all. In the event of a temporary or protracted disruption in operations or loss of a facility or its equipment, we may not be able to transfer manufacturing to another third party in the time required to maintain supply. Even if we could transfer manufacturing to another third party, the shift would likely be expensive and time-consuming, particularly since the new facility would need to comply with the necessary regulatory requirements or may require regulatory approval before selling any products manufactured at that facility. Such an event could delay our clinical studies or reduce our commercial product revenues.

Currently, we maintain insurance coverage against damage to our property and to cover business interruption and research and development restoration expenses. However, our insurance coverage may not reimburse us, or may not be sufficient to reimburse us, for any expenses or losses we may suffer. We may be unable to meet our requirements for our product candidates if there were a catastrophic event or failure of our current manufacturing facility or processes.

Risks Related to Our Dependence on Third Parties

Maintaining clinical and commercial timelines is dependent on our end-to-end supply chain network to support manufacturing; if we experience problems with our third party suppliers or CMOs we may delay development and/or

commercialization of our product and product candidates.

We rely on our CMOs or our partners for the current production of our product and product candidates and the acquisition of materials incorporated in or used in the manufacturing or testing of our product and product candidates. Our CMOs or partners are not our employees, and except for remedies available to us under our agreements with our CMOs or partners, we cannot directly control whether or not they devote sufficient time and resources, including experienced staff, to the manufacturing of supply for our ongoing clinical, nonclinical and preclinical programs. Our CMOs for our product and product candidates will need to be prepared to undergo pre-approval inspection in connection with our regulatory filings, and we cannot be certain that we will be able to adequately support them through such inspection nor that they will successfully pass any such inspection.

To meet our projected supply needs for clinical and commercial materials to support our activities through regulatory approval and commercial manufacturing of tab-cel, ATA188, any product candidates resulting from our next-generation CAR T programs or any other product candidates, we will need to transition the manufacturing of these materials to a CMO. Regardless of where production occurs, we will need to develop relationships with suppliers of critical starting materials or reagents, increase the scale of

production and demonstrate comparability of the material produced at these facilities to the material that was previously produced. Transferring manufacturing processes, analytical methods and know-how is complex and involves review and incorporation of both documented and undocumented processes that may have evolved over time.

In addition, transferring production to different facilities may require utilization of new or different processes to meet the specific requirements of a given facility. We would expect additional comparability work will also need to be conducted to support the transfer of certain manufacturing processes and process improvements. We cannot be certain that all relevant know-how and data has been adequately incorporated into the manufacturing process until the completion of studies (and the related evaluations) intended to demonstrate the comparability of material previously produced with that generated by us or our CMOs.

If we or our CMOs are not able to successfully transfer and produce comparable product and product candidates, our ability to further develop and manufacture our product and product candidates may be negatively impacted.

We still may need to identify additional CMOs for continued production of supply for some of our product and product candidates. Given the nature of our manufacturing processes, the number of CMOs who possess the requisite skill and capability to manufacture our T-cell immunotherapy product candidates, and the critical intermediates or reagents used to manufacture such products, are limited. We have not yet identified alternate suppliers in the event the current CMOs that we utilize are unable to scale production, or if we otherwise experience any problems with them.

We rely on our CMOs and manufacturing network for the production of our product and product candidates. Our supply, and ability to maintain inventory, of these products and product candidates depends on the uninterrupted and efficient operation of these facilities, which could be adversely affected by equipment failures, failure to meet regulatory or

cGMP requirements, labor or raw material shortages, public health epidemics, natural disasters, power failures, cyber-attacks and many other factors. If we encounter any manufacturing or supply chain difficulties, we may be unable to meet the demand for our products and product candidates.

Manufacturing cellular therapies is complicated and tightly regulated by the FDA and comparable regulatory authorities around the world, and although alternative third party suppliers with the necessary manufacturing and regulatory expertise and facilities exist, it could be expensive and take a significant amount of time to arrange for alternative suppliers, transfer manufacturing procedures and analytical methods to these alternative suppliers, and demonstrate comparability of material produced by such new suppliers. New manufacturers of any product, product candidate or intermediate would be required to qualify under applicable regulatory requirements. These manufacturers may not be able to manufacture our product and product candidates at costs, or in sufficient quantities, or in a timely manner necessary to complete development of our product candidates or make commercially successful products. If we are unable to arrange for alternative third party manufacturing sources, or to do so on commercially reasonable terms or in a timely manner, we may not be able to complete development of our product candidates, or market or distribute them. In addition, should the FDA or comparable regulatory authorities not agree with our product candidate specifications and comparability methodologies or assessments for these materials, regulatory authorities may require that we conduct additional studies, including bridging comparability testing, and further clinical development or commercial launch of our product candidates could be substantially delayed.

Reliance on third party manufacturers entails risks to which we would not be subject if we manufactured product and product candidates ourselves, including reliance on the third party for regulatory compliance and quality assurance, the possibility that the third party manufacturer does not maintain the financial resources to meet its obligations under the manufacturing agreement, the possibility of breach of the manufacturing agreement by the third party because of factors beyond our control, including a failure to manufacture our product candidates or any products we or our partners may eventually commercialize in accordance with our specifications, misappropriation of our proprietary information, including our trade secrets and know-how, the possibility that the third party does not devote sufficient time or resources to our product candidates or any products we or our partners may eventually commercialize based on its own business priorities, the possibility that the third party is acquired by another party and changes its business priorities, and the possibility of termination or nonrenewal of the agreement by the third party, based on its own business priorities, at a time that is costly or damaging to us. If Fujifilm does not perform its obligations under the Fujifilm MSA adequately or does not devote sufficient time or resources to our product or product candidates, our operations, including the commercialization of our products, may be adversely impacted. Similarly, if CRL does not perform its obligations under the CRL MSA adequately or does not devote sufficient time or resources to our product or product candidates, our operations, including the commercialization of our products, may be adversely impacted. We also have non-cancellable minimum purchase commitments for products and services in certain of our agreements with our CMOs, if we do not fulfill such minimum purchase commitments, we will need to pay such CMOs the difference between the applicable minimum purchase commitment and our actual purchases of products and services for a given period. In addition, the FDA and other regulatory authorities require that our product candidates and any products that we or our partners may eventually commercialize be manufactured according to cGMP, cGTP and similar regulatory jurisdictional standards. These requirements include, among other things, quality control, quality assurance and the maintenance of records and documentation. The FDA or similar foreign regulatory agencies may also

implement new standards at any time or change their interpretations and enforcement of existing standards for manufacture, packaging or testing of products. We have limited control over our manufacturers'

compliance with these regulations and standards and although we monitor our manufacturers, we depend on them to provide honest and accurate information. Any failure by our third party manufacturers to comply with cGMP or cGTP or failure to scale up manufacturing processes, including any failure to deliver sufficient quantities of product candidates in a timely manner, could lead to a delay in, or failure to obtain, regulatory approval of any of our product candidates. In addition, such failure could be the basis for the FDA to issue a warning letter, withdraw approvals for product candidates previously granted to us, or take other regulatory or legal action, including recall or seizure of outside supplies of the product candidate, total or partial suspension of production, suspension of ongoing clinical studies, refusal to approve pending applications or supplemental applications, detention or product, refusal to permit the import or export of products, injunction or imposing civil and criminal penalties.

We depend on third party suppliers and testing laboratories for key materials used to produce or test our product and product candidates. Any significant disruption in our supplier relationships could harm our business. Any significant delay in the supply of a product candidate for an ongoing clinical study could considerably delay initiation or completion of our clinical studies, product testing and potential regulatory approval of our product candidates. If raw materials or components cannot be purchased or fail to meet approved specifications, the commercial launch of our product and product candidates could be delayed, or there could be a shortage in supply, which could impair our ability to generate revenues from the sale of our product and product candidates.

We are dependent on Pierre Fabre for the commercialization of Ebvallo tab-cel (Ebvallo in the EU, UK and several countries outside UK) worldwide, including the United States. The failure of Pierre Fabre to meet its contractual, regulatory or other obligations could adversely affect our business and our obligations under the HCRx Agreement.

We have entered into an amendment and restatement of the Pierre Fabre Commercialization Agreement (A&R Commercialization Agreement) for Ebvallo in Europe and select emerging markets tab-cel (Ebvallo in the Middle East, Africa, Eastern Europe EU and Central Asia (Territory) the UK) worldwide for EBV-positive cancers and are in the process of negotiating amendments to certain ancillary agreements as contemplated by the Pierre Fabre A&R Commercialization Agreement to further advance our partnership with Pierre Fabre. The closing of the A&R Commercialization Agreement is subject to expiration of the waiting period under the Hart-Scott-Rodino Antitrust Improvements Act and other customary closing conditions, is expected to occur

in December 2023. As a result, we are entirely dependent on Pierre Fabre for marketing and commercialization, including negotiation of pricing and reimbursement, of Ebvallo in the Territory. We will not receive any meaningful milestone or royalty payments from Pierre Fabre until the applicable royalty cap under the HCRx Agreement is met, if at all. Furthermore, the tab-cel. The timing and amount of any milestone and royalty payments we may receive under thePierre Fabre A&R Commercialization Agreement, as well as the commercial success of Ebvallo in the Territory, tab-cel, will depend on, among

other things, the efforts, allocation of resources, negotiation of pricing and reimbursement and successful commercialization of Ebvallo tab-cel by Pierre Fabre in the Territory.Fabre.

Under the terms of the Pierre Fabre A&R Commercialization Agreement, if we transferred the EU and UK marketing authorizations receive US BLA approval for Ebvallo tab-cel in patients with EBV+ PTLD, we are required to transfer the BLA to Pierre Fabre. Pierre Fabre will be responsible for obtaining all other regulatory approvals in the Territory and maintaining all regulatory approvals in the Territory. approvals. We will depend on Pierre Fabre to comply with numerous and varying regulatory requirements governing, if and when applicable, the manufacture, quality control, further development, labeling, packaging, storage, distribution, adverse event reporting, safety surveillance, import, export, advertising, promotion, recordkeeping and reporting of safety and other post-marketing information. We do not control the individual efforts of Pierre Fabre and have limited ability to terminate the Pierre Fabre A&R Commercialization Agreement if Pierre Fabre does not perform as expected. The failure of Pierre Fabre to devote sufficient time and effort to comply with regulatory requirements and maintain the US BLA (if approved), the EU and UK marketing authorizations and other regulatory approvals in the Territory and/or to meet their obligations to us, could have an adverse impact on our financial results and operations, and our obligations under the HCRx Agreement.Agreement with respect to the Initial Territory.

We also depend on Pierre Fabre to comply with all applicable laws relative to the commercialization of Ebvallo tab-cel in the Additional Territory. The failure of Pierre Fabre to devote sufficient time and effort to the commercialization of Ebvallo; tab-cel; to meet their obligations to us, including for future royalty and milestone payments; to adequately deploy business continuity plans in the event of a crisis; and/or to satisfactorily resolve significant disagreements with us or address other factors could have an adverse impact on our financial results and operations and our obligations under the HCRx Agreement. operations. In addition, if Pierre Fabre violates, or are alleged to have violated, any laws or regulations during the performance of their obligations for us, it is possible that we could suffer financial and reputational harm or other negative outcomes, including possible legal consequences.

Any termination, breach or expiration of the Pierre Fabre A&R Commercialization Agreement or ancillary agreements, could have a material adverse effect on our financial position, and our obligations under the HCRx Agreement with respect to the Initial Territory, by reducing or eliminating our right to receive fees, milestones and royalties. In such an event, we may be required to devote additional efforts and to incur additional costs associated with the transfer of regulatory approvals and commercialization of Ebvallo in the Territory. tab-cel. Alternatively, we may attempt to identify and transact with a new commercialization partner, but there can be no assurance that we would be able to identify a suitable partner or transact on terms similar to the Pierre Fabre A&R Commercialization Agreement or that are favorable to us.

We may not realize the benefits of strategic alliances that we may form in the future or of potential future product acquisitions or licenses.

We may desire to form additional strategic alliances, commercialization partnerships, create joint ventures or collaborations, enter into licensing arrangements with third parties or acquire products or business, in each case that we believe will complement or augment our existing business. These relationships or transactions, or those like them, may

require us to incur nonrecurring and other charges, increase our near- and long-term expenditures, issue securities that dilute our existing stockholders, reduce the potential profitability of the products that are the subject of the relationship or disrupt our management and business. In addition, we face significant competition in seeking appropriate strategic alliances and transactions and the negotiation process is time-consuming and complex and there can be no assurance that we can enter into any of these transactions even if we desire to do so. Moreover, we may not be successful in our efforts to establish a strategic alliance or other alternative arrangements for any future product candidates and programs because our research and development pipeline may be insufficient, our product candidates and programs may be deemed to be at too early a stage of development for collaborative effort and third parties may not view our product candidates and programs as having the requisite potential to demonstrate a positive benefit/risk profile. Any delays in entering into new strategic alliances agreements related to our product candidates could also delay the development and commercialization of our product candidates and reduce their competitiveness even if they reach the market. In addition, any termination of established strategic alliance agreements will terminate any potential future funding we may receive under the relevant agreements, and we would have to seek a new partner for development or commercialization, curtail or abandon that development or commercialization, or undertake and fund the development and commercialization of the relevant product. If we seek a new partner but are unable to do so on acceptable terms, or at all, or do not have sufficient funds to conduct the development or commercialization of products ourselves, we would have to explore other strategic options, including curtailing or abandoning that development or commercialization, which could harm our business. For example, effective July 31, 2022, we terminated the agreements with Bayer pursuant to the Termination, Amendment and Program Transfer Agreement (Bayer Termination Agreement). As a result, we have assumed responsibility for the further development of ATA2271 and ATA3271 and commercialization of the resulting product, if approved, until we enter into a new strategic collaboration with a new partner for ATA2271 and/or ATA3271.

If we license products or acquire businesses, we may not be able to realize the benefit of these transactions if we are unable to successfully integrate them with our existing operations and company culture. We cannot be certain that, following an acquisition or license, we will achieve the financial or strategic results that would justify the transaction.

Risks Related to Our Intellectual Property

If we are unable to obtain and maintain sufficient intellectual property protection for our product candidates, or if the scope of the intellectual property protection is not sufficiently broad, our ability to commercialize our product candidates successfully and to compete effectively may be adversely affected.

We rely upon a combination of patents, trademarks, trade secrets and confidentiality agreements – both that we own or possess or that are owned or possessed by our partners that are in-licensed to us – to protect the intellectual property related to our technology, product and product candidates. When we refer to "our" technologies, inventions, patents, patent applications or other intellectual property rights, we are referring to both the rights that we own or possess as well as those that we in-license, many of which are critical to our intellectual property protection and our business. For example, the product, product candidates and platform technology we have licensed from our partners are protected primarily by patent or patent applications of our partners that we have licensed and as confidential know-how and trade secrets. If the

intellectual property that we rely on is not adequately protected, competitors may be able to use our technologies and erode or negate any competitive advantage we may have.

The patentability of inventions and the validity, enforceability and scope of patents in the biotechnology field is uncertain because it involves complex legal, scientific and factual considerations, and it has in recent years been the subject of significant litigation. Moreover, the standards applied by the U.S. Patent and Trademark Office (USPTO) and non-U.S. patent offices in granting patents are not always applied uniformly or predictably. For example, there is no uniform worldwide policy regarding patentable subject matter or the scope of claims allowable in biotechnology patents.

There is no assurance that all potentially relevant prior art relating to our patents and patent applications is known to us or has been found in the instances where searching was done. We may be unaware of prior art that could be used to invalidate an issued patent or prevent a pending patent application from issuing as a patent. There also may be prior art of which we are aware, but which we do not believe affects the validity or enforceability of a claim of one of our patents or patent applications, which may, nonetheless, ultimately be found to affect the validity or enforceability of such claim. As a consequence of these and other factors, our patent applications may fail to result in issued patents with claims that cover our product and product candidates in the U.S. or in other countries.

Even if patents have issued or do successfully issue from patent applications, and even if these patents cover our product and product candidates, third parties may challenge the validity, enforceability or scope thereof, which may result in these patents being

narrowed, invalidated or held to be unenforceable. No assurance can be given that if challenged, our patents would be declared by a court to be valid or enforceable.

Even if unchallenged, our patents and patent applications or other intellectual property rights may not adequately protect our intellectual property, provide exclusivity for our product and product candidates or prevent others from designing around our claims. The possibility exists that others will develop products on an independent basis which have the same effect as our product and product candidates and which do not infringe our patents or other intellectual property rights, or that others will design around the claims of patents that we have had issued that cover our product and product candidates. If the breadth or strength of protection provided by our patents and patent applications with respect to our product and product candidates are threatened, it could jeopardize our ability to commercialize our product and product candidates and dissuade companies from collaborating with us.

We may also desire to seek a license from a third party who owns intellectual property that may be useful for providing exclusivity for our product and product candidates, or for providing the ability to develop and commercialize a product candidate in an unrestricted manner. There is no guarantee that we will be able to obtain a license from such a third party on commercially reasonable terms, or at all.

In addition, the USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. While an

inadvertent lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction.

We and our partners have filed a number of patent applications covering our product and product candidates or methods of using or making those product candidates. We cannot offer any assurances about which, if any, patents will be issued with respect to these pending patent applications, the breadth of any such patents that are ultimately issued or whether any issued patents will be found invalid and unenforceable or will be threatened by third parties. Because patent applications in the U.S. and most other countries are confidential for a period of time after filing, and some remain so until issued, we cannot be certain that we or our partners were the first to file any patent application related to a product or product candidate. We or our partners may also become involved in proceedings regarding our patents, including patent infringement lawsuits, interference or derivation proceedings, oppositions, and *inter partes* and post-grant review proceedings before the USPTO the European Patent Office and other non-U.S. patent offices.

Even if granted, patents have a limited lifespan. In the U.S., the natural expiration of a patent generally occurs 20 years after it is filed. Although various extensions may be available if certain conditions are met, the life of a patent and the protection it affords is limited. If we encounter delays in our clinical studies or in obtaining regulatory approvals, the period of time during which we could exclusively market any of our product and product candidates under patent protection, if approved, could be reduced. Even if patents covering our product and product candidates are obtained, once the patent life has expired for a product, we may be vulnerable to competition from biosimilar products, as we may be unable to prevent competitors from entering the market with a product that is similar or identical to our product candidates.

Furthermore, the research resulting in certain of our licensed patent rights and technology was funded by the U.S. government. As a result, the government has certain rights to these patent rights and technology. When new technologies are developed with government funding, the government generally obtains certain rights in any resulting patents, including a non-exclusive license authorizing the government to practice the invention for or on behalf of the U.S. These rights may permit the government to disclose confidential information on which we rely to third parties and to exercise march-in rights to use or allow third parties to use our licensed technology. The government can exercise its march-in rights if it determines that action is necessary because we fail to achieve practical application of the government-funded technology, because action is necessary to alleviate health or safety needs, to meet requirements of federal regulations or to give preference to U.S. industry. In addition, our rights in any inventions that result from government-funded research may be subject to certain requirements to manufacture products embodying these inventions in the U.S.

If we are sued for infringing the intellectual property rights of third parties, the resulting litigation could be costly and time-consuming and could prevent or delay our or our partners' development and commercialization efforts.

Our commercial success depends, in part, on us and our partners not infringing the patents and proprietary rights of third parties. There is a substantial amount of litigation and other adversarial proceedings, both within and outside the U.S., involving patent and other intellectual property rights in the biotechnology and pharmaceutical industries, including patent

infringement lawsuits, interference or derivation proceedings, oppositions, and *inter partes* and post-grant review proceedings before the USPTO and non-U.S. patent offices. Numerous U.S. and non-U.S. issued patents and pending patent applications owned by third parties exist in the fields in which we are developing and may develop our product and product candidates. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our product and product candidates may be subject to claims of

infringement of third parties' patent rights, as it may not always be clear to industry participants, including us, which patents cover various types of products or methods of use. The coverage of patents is subject to interpretation by the courts, and the interpretation is not always uniform or predictable.

Third parties may assert infringement claims against us based on existing or future intellectual property rights, alleging that we are employing their proprietary technology without authorization. There may be third party patents or patent applications with claims to materials, formulations, methods of manufacture or methods for treatment related to the use or manufacturing of our product and product candidates that we failed to identify. For example, patent applications covering our product and product candidates could have been filed by others without our knowledge, since these applications generally remain confidential for some period of time after their filing date. Even pending patent applications that have been published, including some of which we are aware, could be later amended in a manner that could cover our product and product candidates or their use or manufacture. In addition, we may have analyzed patents or patent applications of third parties that we believe are relevant to our activities and believe that we are free to operate in relation to any of our product and product candidates, but our competitors may obtain issued claims, including in patents we consider to be unrelated, which may block our efforts or potentially result in any of our product, product candidates or our activities infringing their claims.

If we or our partners are sued for patent infringement, we would need to demonstrate that our product candidates, products and methods either do not infringe the patent claims of the relevant patent or that the patent claims are invalid, and we may not be able to do this. Proving that a patent is invalid is difficult and even if we are successful in the relevant proceedings, we may incur substantial costs and the time and attention of our management and scientific personnel could be diverted from other activities. If any issued third party patents were held by a court of competent jurisdiction to cover aspects of our materials, formulations, methods of manufacture or methods for treatment, we could be forced, including by court order, to cease developing, manufacturing or commercializing the

relevant product or product candidate until the relevant patent expired. Alternatively, we may desire or be required to obtain a license from such third party in order to use the infringing technology and to continue developing, manufacturing or marketing the infringing product or product candidate. However, we may not be able to obtain any required license on commercially reasonably terms, or at all. Even if we were able to obtain a license, the rights may be nonexclusive, which could result in our competitors gaining access to the same intellectual property licensed to us.

We may face claims that we misappropriated the confidential information or trade secrets of a third party. If we are found to have misappropriated a third party's trade secrets, we may be prevented from further using these trade secrets, which could limit our ability to develop our product candidates.

Defending against intellectual property claims could be costly and time consuming, regardless of the outcome. Thus, even if we were to ultimately prevail, or to settle before a final judgment, any litigation could burden us with substantial unanticipated costs. In addition, litigation or threatened litigation could result in significant demands on the time and attention of our management team, distracting them from the pursuit of other company business. During the course of any intellectual property litigation, there could be public announcements of the results of hearings, rulings on motions, and other interim proceedings in the litigation and these announcements may have negative impact on the perceived value of our product, product candidates, programs or intellectual property. In the event of a successful intellectual property claim against us, we may have to pay substantial damages, including treble damages and attorneys' fees if we are found to have willfully infringed a patent, or to redesign our infringing product and product candidates, which may be impossible or require substantial time and monetary expenditure. In addition to paying monetary damages, we may lose valuable intellectual property rights or personnel and the parties making claims against us may obtain injunctive or other equitable relief, which could impose limitations on the conduct of our business. We may also elect to enter into license agreements in order to settle patent infringement claims prior to litigation, and any of these license agreements may require us to pay royalties and other fees that could be significant. As a result of all of the foregoing, any actual or threatened intellectual property claim could prevent us or our partners from developing or commercializing a product or product candidate or force us to cease some aspect of our business operations.

We may not be able to protect our intellectual property rights throughout the world.

Filing, prosecuting, enforcing and defending patents on all of our product and product candidates in all countries throughout the world would be prohibitively expensive. Our intellectual property rights in certain countries outside the U.S. may be less extensive than those in the U.S. In addition, the laws of certain foreign countries do not protect intellectual property rights to the same extent as laws in the U.S. Consequently, we and our partners may not be able to prevent third parties from practicing our inventions in countries outside the U.S., or from selling or importing infringing products made using our inventions in and into the U.S. or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection or where we do not have exclusive rights under the relevant patents to develop their own products and, further, may export otherwise-infringing products to territories where we and our partners have patent protection but where enforcement is not as strong as that in the U.S. These infringing products may compete with our product and product candidates in jurisdictions where we or our partners have no issued patents or

where we do not have exclusive rights under the relevant patents, or our patent claims and other intellectual property rights may not be effective or sufficient to prevent them from so competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents and other intellectual property protection, particularly those relating to biopharmaceuticals, which

could make it difficult for us and our partners to stop the infringement of our patents or marketing of competing products in violation of our intellectual property rights generally. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly, could put our patent applications at risk of not issuing, and could provoke third parties to assert claims against us or our partners. We or our partners may not prevail in any lawsuits that we or our licensors initiate, and even if we or our licensors are successful the damages or other remedies awarded, if any, may not be commercially meaningful.

We have in-licensed a significant portion of our intellectual property from our partners. If we breach any of our license agreements with these partners, we could lose the ability to continue the development and potential commercialization of one or more of our product candidates.

We hold rights under license agreements with our partners, including MSK and QIMR Berghofer and Moffitt that are important to our business. Our discovery and development platform is built, in part, around patent rights in-licensed from our partners. Under our existing license agreements, we are subject to various obligations, including diligence obligations with respect to development and commercialization activities, payment obligations upon achievement of certain milestones and royalties on product sales. If there is any conflict, dispute, disagreement or issue of nonperformance between us and our counterparties regarding our rights or obligations under these license agreements, including any conflict, dispute or disagreement arising from our failure to satisfy diligence or payment

obligations, we may be liable to pay damages and our counterparties may have a right to terminate the affected license. The termination of any license agreement with one of our partners would materially adversely affect our ability to utilize the intellectual property that is subject to that license agreement in our drug discovery and development efforts, our ability to enter into future collaboration, licensing and/or marketing agreements for one or more affected product and product candidates and our, or our partners' ability to commercialize the affected product and product candidates. Furthermore, a disagreement under any of these license agreements may harm our relationship with the partner, which could have negative impacts on other aspects of our business.

We may become involved in lawsuits to protect or enforce our intellectual property, which could be expensive, time-consuming and unsuccessful and have a material adverse effect on the success of our business.

Third parties may infringe our patents or misappropriate or otherwise violate our intellectual property rights. Our patent applications cannot be enforced against third parties practicing the technology claimed in these applications unless and until a patent issues from the applications, and then only to the extent the issued claims cover the technology. In the future, we or our partners may elect to initiate legal proceedings to enforce or defend our or our partners' intellectual property rights, to protect our or our partners' trade secrets or to determine the validity or scope of our intellectual property rights. Any claims that we or our partners assert against perceived infringers could also provoke these parties to assert counterclaims against us or our partners alleging that we or our partners infringe their intellectual property rights or that our intellectual property rights are invalid.

Interference or derivation proceedings provoked by third parties, brought by us or our partners, or brought by the USPTO or any non-U.S. patent authority may be necessary to determine the priority of inventions or matters of inventorship with respect to our patents or patent applications. We or our partners may also become involved in other proceedings, such as reexamination or opposition proceedings, *inter partes* review, post-grant review or other pre-issuance or post-grant proceedings in the USPTO or its foreign counterparts relating to our intellectual property or the intellectual property of others. An unfavorable outcome in any of these proceedings could require us or our partners to cease using the related technology and commercializing our product and product candidates, or to attempt to license rights to it from the prevailing party. Our business could be harmed if the prevailing party does not offer us or our partners a license on commercially reasonable terms if any license is offered at all. Even if we or our licensors obtain a license, it may be non-exclusive, thereby giving our competitors access to the same technologies licensed to us or our licensors. In addition, if the breadth or strength of protection provided by our patents and patent applications is threatened, it could dissuade companies from collaborating with us to license, develop or commercialize current or future product and product candidates.

Any intellectual property proceedings can be expensive and time-consuming. Our or our partners' adversaries in these proceedings may have the ability to dedicate substantially greater resources to prosecuting these legal actions than we or our partners can. Accordingly, despite our or our partners' efforts, we or our partners may not be able to prevent third parties from infringing upon or misappropriating our intellectual property rights, particularly in countries where the laws may not protect our rights as fully as in the U.S. Even if we are successful in the relevant proceedings, we may incur substantial costs and the time and attention of our management and scientific personnel could be diverted from other activities. We could be found liable for monetary damages, including treble damages and attorneys' fees, if we are found to have willfully infringed a patent. In addition, in an infringement proceeding, a court may decide that one or more of our patents is invalid or unenforceable, in whole or in part, or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question. An adverse result in any litigation proceeding could put one or more of our patents at risk of being invalidated, held unenforceable or interpreted narrowly.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments.

If we are unable to protect the confidentiality of our trade secrets and other proprietary information, the value of our technology could be materially adversely affected and our business could be harmed.

In addition to seeking the protection afforded by patents, we rely on trade secret protection and confidentiality agreements to protect proprietary know-how that is not patentable or that we elect not to patent, processes for which patents are difficult to enforce, and other elements of our technology, discovery and development processes that involve proprietary know-how, information or technology that is not covered by patents. The T-cell immunotherapy product candidates and platform technology we have licensed from our partners are protected primarily as confidential know-how and trade secrets. Any disclosure to or misappropriation by third parties of our confidential proprietary information could

enable competitors to quickly duplicate or surpass our technological achievements, including by enabling them to develop and commercialize products substantially similar to or competitive with our product candidates, thus eroding our competitive position in the market.

Trade secrets can be difficult to protect. We seek to protect our proprietary technology and processes, in part, by entering into confidentiality agreements and invention assignment agreements with our employees, consultants, CMOs, and outside scientific advisors, contractors and collaborators. These agreements are designed to protect our proprietary information. Although we use reasonable efforts to protect our trade secrets, our employees, consultants, contractors, or outside scientific advisors might intentionally or inadvertently disclose our trade secrets or confidential, proprietary information to competitors. In addition, competitors may otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. If any of our confidential proprietary information were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent such competitor from using that technology or information to compete with us, which could harm our competitive position.

Enforcing a claim that a third party illegally obtained and is using any of our trade secrets is expensive and time consuming, and the outcome is unpredictable. In addition, the laws of certain foreign countries do not protect proprietary rights such as trade secrets to the same extent or in the same manner as the laws of the U.S. Misappropriation or unauthorized disclosure of our trade secrets to third parties could impair our competitive advantage in the market and could materially adversely affect our business, results of operations and financial condition.

Risks Related to Commercialization of Our Product Candidates

Our commercial success depends upon attaining significant market acceptance of our product and product candidates, if approved, among physicians, patients, healthcare payors and the medical community, including hospitals and outpatient clinics.

Even if we or our partners obtain regulatory approval for any of our product candidates that we may develop or acquire in the future, the product may not gain market acceptance among physicians, healthcare payors, patients or the medical community that supports our product development efforts, including hospitals and outpatient clinics. Market acceptance of any of our product and product candidates for which we receive approval depends on a number of factors, including:

- the efficacy and safety of the product candidates as demonstrated in clinical studies;
- the clinical indications and patient populations for which the product candidate is approved;
- the inclusion into clinical treatment guidelines;
- acceptance by physicians and patients of the drug as a safe and effective treatment;

- the administrative and logistical burden of treating patients;
- the ability to identify in a timely manner the appropriate patients who will benefit from specific therapy;
- the consideration of novel cellular therapies by physicians, hospitals and third party payors;

- the potential and perceived advantages of product candidates over alternative treatments;
- the safety of product candidates seen in a broader patient group, including its use outside the approved indications;
- any restrictions on use together with other medications;
- the prevalence and severity of any side effects;
- product labeling or product insert requirements of the FDA or other regulatory authorities;
- the timing of market introduction of our products as well as competitive products;
- the development of manufacturing and distribution processes for our product and product candidates;
- the cost of treatment in relation to alternative treatments;
- the availability of coverage and adequate reimbursement from, and our ability to negotiate pricing with, third-party payors and government authorities;
- relative convenience and ease of administration;
- the ability to achieve a pricing and reimbursement recommendation or commercial agreement with national payors; and
- the effectiveness of our sales and marketing efforts and those of our collaborators.

Even if we are able to commercialize our product and product candidates, the products may not receive coverage and adequate reimbursement from third party payors in the U.S. and in other countries in which our partners seek to commercialize our products, which could harm our business.

Our ability to commercialize any product successfully will depend, in part, on the extent to which coverage and adequate reimbursement for these products and related treatments will be available from government health administration authorities, private health insurers and other organizations.

Government authorities and third party payors, such as private health insurers and health maintenance organizations, determine which medications they will cover and establish reimbursement levels. A primary trend in the healthcare industry is cost containment. Government authorities and third party payors continue to support initiatives to control costs by limiting coverage and the amount of reimbursement for particular medications. Increasingly, third party payors are requiring that drug companies provide them with predetermined discounts from list prices and are challenging the prices charged for medical products. Third party payors may also seek additional clinical evidence, beyond the data required to obtain regulatory approval, demonstrating clinical benefits and value in specific patient populations before covering our products for those patients. We cannot be sure that coverage and adequate reimbursement will be available for any product that our partners commercialize and, if reimbursement is available, what the level of reimbursement will be. In some countries such as the U.S., greater cost-shifting from the payor to the patient is also a trend, and higher patient copayments or other administrative burdens could lead to reduced demand from patients or healthcare professionals. This could particularly be the case in a challenging economic climate. Coverage and reimbursement may impact the demand for, or the price of, any product or product candidate for which we obtain regulatory approval, and ultimately our partners' ability to successfully commercialize any product or product candidate for which we obtain regulatory approval.

There may be significant delays in obtaining coverage and reimbursement for newly approved drugs, and coverage may be more limited than the purposes for which the drug is approved by the FDA or comparable foreign regulatory authorities. Moreover, eligibility for coverage and reimbursement does not imply that any drug will be paid for in all cases or at a rate that covers our costs, including research, development, manufacture, sale and distribution. Interim reimbursement levels for new drugs, if applicable, may also not be sufficient to cover our costs and may only be temporary. Reimbursement rates may vary according to the use of the drug and the clinical setting in which it is used, may be based on reimbursement levels already set for lower cost drugs and may be incorporated into existing payments for other services. Net prices for drugs may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of drugs from countries where they may be sold at lower prices than in the U.S. Coverage and reimbursement policies for drug products can differ significantly from payor to payor as there is no uniform policy of coverage and reimbursement for drug products among third party payors in the U.S. Third party payors in the U.S. often rely upon Medicare coverage policy and payment limitations in setting their own reimbursement policies. The process of determining coverage and reimbursement is often time consuming and costly which will require us to provide scientific and clinical support for the use of our products to each payor separately, with no assurance

that coverage or adequate reimbursement will be obtained. It is difficult to predict at this time what government authorities and third party payors will decide with respect to coverage and reimbursement for our drug products. Our partners' inability to promptly obtain coverage and profitable reimbursement rates from both government-funded and private payors for any approved products that we develop could have a material adverse effect on our operating results, our ability to raise capital needed and our overall financial condition.

Current and future legislation, including potentially unfavorable pricing regulations or other healthcare reform initiatives, may increase the difficulty and cost for us to obtain regulatory approval of our product candidates and affect the prices for our product and product candidates.

The regulations that govern, among other things, regulatory approvals, coverage, pricing and reimbursement for new drug products vary widely from country to country. In the U.S. and some foreign jurisdictions, there have been a number of legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay regulatory approval of our product candidates, restrict or regulate post-approval activities and affect our ability to successfully sell any product and product candidates for which we obtain regulatory approval. In particular, in March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, collectively, the Affordable Care Act (ACA), was enacted, which substantially changed the way healthcare is financed by both governmental and private insurers, and continues to significantly impact the U.S. pharmaceutical industry. The Affordable Care Act and its implementing regulations, among other things, addressed a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for certain drugs and biologics, including our product candidates, increased the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program, extended the Medicaid Drug Rebate Program to utilization of prescriptions of individuals enrolled in Medicaid managed care organizations, subjected manufacturers to new annual fees and taxes for certain branded prescription drugs, provided incentives to programs that increase the federal government's comparative effectiveness research.

Other legislative changes have been proposed and adopted in the U.S. since the ACA was enacted. In August 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by the U.S. Congress. This includes aggregate reductions of Medicare payments to providers of 2% per fiscal year, which went into effect in April 2013. As a result of the COVID-19 pandemic, this reduction was temporarily suspended from May 1, 2020 through March 31, 2022, with subsequent reductions to 1% from April 1, 2022 until June 30, 2022. The 2% reduction was then reinstated and has been in effect since June 30, 2022, and will remain in effect (with additional reductions of 2.25% in the first half of 2030 and 3% in the second half of 2030 to offset the COVID-19 suspension) until 2031 unless additional Congressional action is taken. In January 2013, the American Taxpayer Relief Act of 2012 was enacted which, among other things, further reduced Medicare payments to several providers, including hospitals and outpatient clinics, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

There have been judicial and Congressional challenges to numerous elements of the ACA, as well as efforts by both the executive and legislative branches of the federal government to repeal or replace certain aspects of the ACA. While the U.S. Congress has not passed comprehensive repeal legislation, it has enacted laws that modify certain provisions of the ACA, such as removing penalties, starting January 1, 2019, for not complying with the ACA's individual mandate to carry health insurance and eliminating the implementation of certain mandated fees., On June 17, 2021, the U.S. Supreme Court dismissed a legal challenge to the law brought by several states arguing that, without the individual mandate, the entire ACA was unconstitutional. The Supreme Court dismissed the lawsuit without ruling on the merits of the states' constitutionality arguments. On January 28, 2021, President Biden issued an executive order that, among other things, also instructed certain governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements, and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the ACA. Further, the Inflation Reduction Act, signed into law in August 2022, extended the provision of enhanced subsidies for individuals purchasing health coverage through the ACA marketplace. The enhanced subsidies, which were originally passed as part of the American Rescue Plan are now extended until 2025. In the future, there may be additional challenges and/or amendments to the ACA. It is unclear how future litigation and the healthcare reform measures of the Biden administration will impact the ACA and our business.

There have been, and likely will continue to be, legislative and regulatory proposals at the foreign, federal and state levels directed at broadening the availability of healthcare and containing or lowering the cost of healthcare. We cannot predict the initiatives that may be adopted in the future. The continuing efforts of governments, insurance companies, managed care organizations and other payors of healthcare services to contain or reduce costs of healthcare, including by imposing price controls, may adversely affect the demand for our product and product candidates for which we obtain regulatory approval and our ability to set a price that we believe is fair for our products. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors.

For example, in April 2023, the European Commission adopted a wide-ranging proposal for a new Directive and a new Regulation. If made into law, this proposal will revise and replace the existing general pharmaceutical legislation. This change will likely result in significant changes to the pharmaceutical industry. In particular, it is expected that the new Directive and Regulations will, if made into law, affect the duration of the period of regulatory protection afforded to medicinal products including regulatory data protection (also called "data exclusivity"), marketing exclusivity afforded to orphan medicinal products, as well as the conditions of eligibility to the orphan designation.

Legislative and regulatory proposals have been made to expand post-approval requirements and restrict sales and promotional activities for pharmaceutical products. We cannot be sure whether additional legislative changes will be enacted, or whether the U.S. or foreign regulations, guidance or interpretations will be changed, or what the impact of these changes on the regulatory approvals of our product and product candidates, if any, may be. In the U.S., the EU and other potentially significant markets for our product and product candidates, government authorities and third party payors are increasingly attempting to limit or regulate the price of medical products and services, particularly for new and innovative products and therapies, which has resulted in lower average selling prices for certain products in certain markets. In the U.S., there have been several Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drugs. For example, the Consolidated Appropriations Act of 2021 included several drug price reporting and transparency measures, such as a new requirement for certain Medicare plans to develop tools to display Medicare Part D prescription drug benefit information in real time and for group and health insurance issuers to report information on pharmacy benefit and drug costs to the Secretaries of Health and Human Services, Labor, and the Treasury. Additionally, the Inflation Reduction Act of 2022 allows Medicare to: beginning in 2026, establish a "maximum fair price" for certain pharmaceutical and biological products covered under Medicare Parts B and D; beginning in 2023, penalize drug companies that raise prices for products covered under Medicare Parts B and D faster than inflation; and beginning in 2025 impose new discounts obligations on pharmaceutical and biological manufacturers for products covered under Medicare Part D.

There have also been administrative developments in the U.S. related to drug pricing. For example, on February 2, 2022, the Biden Administration signaled its continued commitment to the Cancer Moonshot initiative, which was initially launched in 2016. In its announcement, the administration noted that its new goals under the initiative include addressing inequities in order to ensure broader access to cutting-edge cancer therapeutics and investing in a robust pipeline for new treatments. On September 12, 2022, President Biden issued an Executive Order to promote biotechnology and biomanufacturing innovation. The Order noted several

methods through which the Biden Administration would support the advancement of biotechnology and biomanufacturing in healthcare, and instructed the Department of Health and Human Service to submit, within 180 days of the Order, a report assessing how to use biotechnology and biomanufacturing to achieve medical breakthroughs, reduce the overall burden of disease, and improve health outcomes. On October 14, 2022 President Biden issued an Executive Order on Lowering Prescription Drug Costs for Americans, which instructed the Secretary of the Department of Health and Human Services to consider whether to select for testing by the CMS Innovation Center new health care payment and delivery models that

would lower drug costs and promote access to innovative drug therapies for beneficiaries enrolled in the Medicare and Medicaid programs. The Executive Order further directed the Secretary of the Department of Health and Human Services to submit, within 90 days of the date of the Executive Order, a report regarding any models that may lead to lower cost-sharing for commonly used drugs and support value-based payment that promotes high-quality care. Most recently, on February 14, 2023, the Department of Health and Human Services issued a report in response to the October 14, 2022 Executive Order, which, among other things, selects three potential drug affordability and accessibility models to be tested by the CMS Innovation Center. Specifically, the report addresses: (1) a model that would allow Part D Sponsors to establish a "high-value drug list" setting the maximum co-payment amount for certain common generic drugs at $2; (2) a Medicaid-focused model that would establish a partnership between CMS, manufacturers, and state Medicaid agencies that would result in multi-state outcomes-based agreements for certain cell and gene therapy drugs; and (3) a model that would adjust Medicare Part B payment amounts for Accelerated Approval Program drugs to advance the developments of novel treatments. On August 29, 2023, CMS released an initial list of ten drugs subject to price negotiations. This negotiation process will occur during 2023 and 2024 and result in maximum prices that will be effective beginning in 2026. While it remains to be seen how the drug pricing provisions imposed by the Inflation Reduction Act (IRA) will affect the broader pharmaceutical industry, several pharmaceutical manufacturers and other industry stakeholders have challenged the law, including through lawsuits brought against the U.S. Department of Health and Human Services, the Secretary of the U.S. Department of Health and Human Services, CMS, and the CMS Administrator challenging the constitutionality and administrative implementation of the IRA's drug price negotiation provisions.

Other proposed administrative actions may affect our government pricing responsibilities. For example, CMS has issued proposals to amend the existing Medicaid Drug Rebate Program regulations. In addition, there are pending legal and legislative developments relating to the 340B drug pricing program, including ongoing litigation challenging federal enforcement actions against manufacturers and recently introduced and enacted state legislation. It remains to be seen how these drug pricing initiatives will affect the broader pharmaceutical industry.

At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, to encourage importation from other countries and bulk purchasing. Another emerging trend at the state level is the establishment of prescription drug affordability boards, some of which will prospectively permit certain states to establish upper payment limits for drugs that the state has determined to be "high-cost". Furthermore, the increased emphasis on managed healthcare in the U.S. and on country and regional pricing and reimbursement controls in the EU will put additional pressure on product pricing, reimbursement and usage, which may adversely affect our future product sales. These pressures can arise from rules and practices of managed care groups, other insurers, judicial decisions and governmental laws and regulations related to Medicare, Medicaid and healthcare reform, pharmaceutical reimbursement policies and pricing in general.

In addition, there is significant uncertainty regarding the reimbursement status of newly approved healthcare products. We may need to conduct expensive pharmacoeconomic studies in order to demonstrate the cost-effectiveness of our product and product candidates. If third party payors do not consider our product and product candidates to be cost-effective compared to other therapies, the payors may not cover our product and product candidates after approval as a

benefit under their plans or, if they do, the level of payment may not be sufficient to allow us to sell our products on a profitable basis.

Price controls may be imposed in foreign markets, which may adversely affect our future profitability.

In some countries, particularly Member States of the EU and the UK, the pricing of prescription drugs is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after receipt of

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regulatory approval for a product. In addition, there can be considerable pressure by governments and other stakeholders on prices and reimbursement levels, including as part of cost containment measures. Political, economic and regulatory developments may further complicate pricing negotiations, and pricing negotiations may continue after reimbursement has been obtained. Reference pricing used by various EU Member States and parallel distribution, or arbitrage between low-priced and high-priced Member States, can further reduce prices. In some countries, we, or our collaborators, may be required to conduct a clinical study or other studies that compare the cost-effectiveness of our product and product candidates to other available therapies in order to obtain or maintain reimbursement or pricing approval. Publication of discounts by third party payors or authorities may lead to further pressure on the prices or reimbursement levels within the country of publication and other countries. If reimbursement of our products is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our business could be adversely affected.

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We face substantial competition, which may result in others discovering, developing or commercializing products before or more successfully than we do.

We face competition from numerous pharmaceutical and biotechnology enterprises, as well as from academic institutions, government agencies and private and public research institutions for our current product and product candidates. Our commercial opportunities will be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer side effects or are less expensive than any products that we may develop. Additionally, our commercial opportunities will be reduced or eliminated if novel upstream products or changes in treatment protocols reduce the overall incidence or prevalence of our current or future target diseases. Competition could result in reduced sales and pricing pressure on our product and product candidates, if approved by applicable regulatory authorities. In addition, significant delays in the development of our product candidates could allow our competitors to bring products to market before us and impair any ability to commercialize our product and product candidates.

There are currently no FDA-approved products for the treatment of EBV+ PTLD, and there are no EC-approved products for this indication except for Ebvallo. However, we are aware some marketed products and therapies are used per global physician treatment guidelines in the US and the EU in the treatment of EBV+ PTLD by some healthcare professionals and institutions, such as rituximab and combination chemotherapy regimens. In addition, a number of companies and academic institutions are developing product candidates for EBV+ PTLD and other EBV-driven diseases including: Viracta Therapeutics, Inc., which is conducting a pivotal, Phase 2 clinical study for nanatinostat (formerly named tractinostat, or VRx-3996) in

combination with antiviral drug valganciclovir in relapsed/refractory EBV+ lymphomas; and AlloVir (formerly known as ViraCyte), which has completed a Phase 2 clinical study for posoleucel (ALVR105), an allogeneic, multi-virus T-cell product that targets six viruses in allogeneic HSCT recipients with ≥1 treatment-refractory infection, including EBV, and is conducting two Phase 3 trials for Virus-Associated Hemorrhagic-Cystitis, as well as initiated a Phase 3 trial for the prevention of BKV, CMV, AdV, EBV, HHV06 and JCV in post-allogeneic HSCT patients.

Competition in the MS market is high with at least 20 therapies, including four generics or bioequivalents, approved in the U.S., UK and EU for the treatment of various forms of MS, including clinically isolated syndrome, relapsing-remitting MS (RRMS), secondary progressive MS (SPMS) and primary progressive MS (PPMS). There are many competitors in the MS market, including major multi-national fully-integrated pharmaceutical companies and established biotechnology companies. Most recently, Briumvi (ublituximab), marketed by TG Therapeutics, Ponvory (S1P modulator), marketed by Johnson & Johnson, and Kesimpta® (anti-CD20 monoclonal antibody), marketed by Novartis, were approved in the U.S. and/or EU for the treatment of relapsing forms of MS.

There are numerous development candidates in Phase 3 studies for both relapsing and/or progressive forms of MS and additional novel agents could be approved in either or both indications in the future including Merck KgaA's Bruton's tyrosine kinase (BTK) inhibitor, evobrutinib, Roche's BTK inhibitor, fenebrutinib, Sanofi's BTK inhibitor, tolebrutinib and AB Science's tyrosine kinase inhibitor, masitinib. Medicinova is planning to initiate a Phase 3 study of its PDE inhibitor, ibudilast (MN166) in non-active SPMS.

There are currently six autologous CAR T therapies approved in the U.S. and/or EU: Novartis' Kymriah® (tisagenlecleucel), Gilead/Kite's Yescarta® (axicabtagene ciloleucel) and Tecartus™(brexucabtagene autoleucel) and Bristol-Myers Squibb's Breyanzi®(lisocabtagene maraleucel) and Abecma (idecabtagene vicleucel) with 2seventy bio, Johnson & Johnson and Legend Biotech's Carykti™ Carvykti™ (ciltacabtagene autoleucel). There are many CAR-mediated cell therapies in development, and, although the majority are autologous, they also include allogeneic and off-the-shelf cell therapies. There are multiple allogeneic CAR platforms being developed with differences in approaches to minimize instances of donor cells recognizing the patient's body as foreign or rejection of the donor cells by the patient's body. These approaches include the use of gene-editing to remove or inhibit the TCR and the use of cell types without a TCR. The majority of clinical stage allogeneic CAR programs utilize alpha beta T cells as the cell type and gene editing of the T-cell receptor and HLA as the preferred technology approach, however, other strategies are also in development. development such as Gamma Delta T cells and NK cells. It is possible that some of these other approaches will have more favorable characteristics than the approach we utilize, which would result in them being favored by potential partners or customers over our products. Depending on the diseases that we

target in the future, we may face competition from both autologous and allogeneic CAR therapies and other modalities (e.g., small molecules, antibodies, bispecifics) in the indication of interest.

Many of the approved or commonly used drugs and therapies for our current or future target diseases, including EBV+ PTLD and MS, are well established and are widely accepted by physicians, patients and third party payors. Some of these drugs are branded and subject to patent protection, and other drugs and nutritional supplements are available on a generic

basis. Insurers and other third party payors may encourage the use of generic products or specific branded products. We expect that our product and our product candidates, if approved, will be priced at a significant premium over competitive generic products. Absent differentiated and compelling clinical evidence, pricing premiums may impede the adoption of our products over currently approved or commonly used therapies, which may adversely impact our business. In addition, many companies are developing new therapeutics, and we cannot predict what the standard of care will become as our products continue in clinical development.

Many of our competitors or potential competitors have significantly greater established presence in the market, financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical studies, obtaining regulatory approvals and marketing approved products than we do, and as a result may have a competitive advantage over us. Smaller or early-stage companies may also prove to be significant competitors, including through collaborative arrangements with large and established companies or if they are acquired by larger companies. These third parties compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical study sites and patient registration for clinical studies, establishing agreements with CROs and CMOs, as well as in acquiring technologies and technology licenses complementary to our programs or advantageous to our business.

As a result of these factors, these competitors may obtain regulatory approval of their products before we are able to obtain patent protection or other intellectual property rights, which will limit our ability to develop or commercialize our product candidates. Our competitors may also develop drugs that are safer, more effective, more widely used and cheaper than ours, and may also be more successful than us in manufacturing and marketing their products. These appreciable advantages could render our product candidates obsolete or noncompetitive before we can recover development and other expenses.

We are subject to certain contractual obligations under our royalty financing agreement with HealthCare Royalty Partners and may be subject to claims for damages if we fail to fulfill these obligations.

In December 2022, we entered into a purchase and sale agreement (the HCRx Agreement) with HCR Molag Fund, L.P. (HCRx). Under the terms of the HCRx Agreement, we received $31.0 million in cash in consideration for our right to receive a portion of future royalty payments and certain milestones for Ebvallo in the Initial Territory due to us from Pierre Fabre under the Pierre Fabre Commercialization Agreement. The HCRx Agreement contains certain customary terms and conditions, including representations and warranties, covenants, and indemnification obligations in favor of each party. Among these terms, there are certain covenants regarding our compliance with the Pierre Fabre Commercialization Agreement. In the event of actual or alleged breaches of the Pierre Fabre Commercialization Agreement or the HCRx Agreement, we could be subject to claims for damages from HCRx and could be subject to costly litigation.

We expect the product candidates we develop will be regulated as biological products (biologics) and therefore they may be subject to competition sooner than anticipated.

The Biologics Price Competition and Innovation Act of 2009 (BPCIA) was enacted as part of the Affordable Care Act to establish an abbreviated pathway for the approval of biosimilar and interchangeable biological products. The regulatory

pathway establishes legal authority for the FDA to review and approve biosimilar biologics, including the possible designation of a biosimilar as "interchangeable" based on its similarity to an approved biologic. Under the BPCIA, an application for a biosimilar product cannot be approved by the FDA until 12 years after the reference product was approved under a BLA. During this 12-year period of exclusivity, another company may still market a competing version of the reference product if the FDA approves a full BLA for the competing product containing the sponsor's own preclinical data and data from adequate and well-controlled clinical trials to demonstrate the safety, purity and potency of their product. The law is complex and is still being interpreted and implemented by the FDA. As a result, its ultimate impact, implementation, and meaning are subject to uncertainty. While it is uncertain when processes intended to implement BPCIA may be fully adopted by the FDA, any of these processes could have a material adverse effect on the future commercial prospects for our biological products.

We believe that our product and any of the product candidates we develop that are approved in the U.S. as a biological product under a BLA should qualify for the 12-year period of exclusivity. However, there is a risk that this exclusivity could be shortened due to Congressional action or otherwise, or that the FDA will not consider the subject product candidates to be reference products for competing products, potentially creating the opportunity for generic competition sooner than anticipated. Moreover, the extent to which a biosimilar, once approved, will be substituted for any one of the reference products in a way that is similar to traditional

generic substitution for non-biological products is not yet clear, and will depend on a number of marketplace and regulatory factors that are still developing.

In addition, the approval of a biologic product biosimilar to one of our products could have a material adverse impact on our business as it may be significantly less costly to bring to market and may be priced significantly lower than our products.

If we are unable to enter into agreements with third parties to market and sell our product and product candidates, we may be unable to generate any revenue from the sale of our products.

In order to market any products that may be approved by the FDA and comparable foreign regulatory authorities, we must enter into agreements with third parties to market and sell our product. There is no guarantee that we will be able to enter into such agreements with third parties or to do so on commercially reasonable terms or in a timely manner. Any failure or delay in entering into agreements with third parties to market and sell our products, would adversely impact the commercialization of these products. There

can be no assurance that we would be able to identify a suitable third party to market and sell our product or agree upon terms with third parties that are favorable or acceptable to us, or at all. If we are unable to identify and reach agreement with a third party to market and commercialize our product, we may need to explore other strategic options, including commercializing products ourselves, and there is no guarantee we can successfully commercialize products ourselves. We may be competing with many companies that currently have extensive and well-funded sales and marketing operations. Without a sufficiently scaled, appropriately timed and trained third party to perform sales and marketing functions, we may be unable to compete successfully against these more established companies.

We may encounter difficulties in managing our growth, including with respect to our employee base, and managing our operations successfully.

As of June 30, 2023 September 30, 2023, we had 317 308 employees. We may encounter difficulties in managing the size of our operations to support our continuing development activities and the commercialization of our product and potential commercialization of our product candidates by our partners. As our development and commercialization plans and strategies continue to evolve, or as a result of any future acquisitions, we must continue to improve our managerial, operational, financial and other procedures and processes to manage the size our of operations. Our management, personnel and systems currently in place may not be adequate to support any future growth. Future growth would impose significant added responsibilities on members of management, including:

- managing our preclinical and clinical studies effectively;
- managing CMC operations and our external manufacturing partners effectively;
- identifying, recruiting, maintaining, motivating and integrating additional employees, including the additional person needed to support continued development and of our product candidates;
- managing our internal development efforts effectively while complying with our contractual obligations to licensors, licensees, contractors and other third parties;
- improving our managerial, development, operational, information technology, and finance systems; and
- expanding our facilities.

As our operations expand, we will also need to manage additional relationships with various strategic partners, suppliers and other third parties. Our future financial performance and our ability to compete effectively will depend, in part, on our ability to manage any future growth effectively. To that end, we must be able to manage our development efforts and preclinical and clinical studies effectively and hire, train and integrate additional management, research and development, regulatory, manufacturing and administrative personnel. Our failure to accomplish any of these tasks could prevent us from successfully growing our company.

Risks Related to Ownership of Our Common Stock

Our stock price has been and will likely continue to be volatile and may decline regardless of our operating performance.

Our stock price has fluctuated in the past and can be expected to be volatile in the future. From January 1, 2021 through June 30, 2023 September 30, 2023, the reported sale price of our common stock has fluctuated between $1.45 $1.25 and $21.85 per share. The stock market in general and the market for biotechnology companies in particular have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. In particular, during the COVID-19 pandemic the volatility of the stock market for biopharmaceutical companies was heightened. As a result of the general volatility of the biopharmaceutical market, investors may experience losses on their investment in our common stock. The market price of our common stock may be influenced by many factors, including the following:

- the success of competitive products or technologies;
- regulatory actions with respect to our product candidates or products or our competitors' product candidates or products;

- actual or anticipated changes in our growth rate relative to our competitors;
- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures, collaborations or capital commitments;
- announcements of the results, including safety and efficacy of our product candidates, or progress of our clinical stu
- results of clinical studies, including safety and efficacy, of our product candidates or those of our competitors;
- regulatory or legal developments in the U.S. and other countries;
- developments or disputes concerning patent applications, issued patents or other proprietary rights;

- the recruitment or departure of key personnel;
- the level of expenses related to any of our product candidates or clinical development programs;
- the results of our efforts to in-license or acquire additional product candidates or products;
- actual or anticipated changes in estimates as to financial results, development timelines or recommendations by securities analysts;
- variations in our financial results or those of companies that are perceived to be similar to us;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- inconsistent or unusual trading volume levels of our shares or derivatives thereof;
- announcement or expectation of additional financing efforts;
- sales of our common stock by us, our insiders or our other stockholders;
- changes in the structure of healthcare payment systems;
- market conditions in the pharmaceutical and biotechnology sectors;
- general economic, industry and market conditions; and
- the other risks described in this “Risk Factors” section.

In addition, the stock markets in general, and the markets for biotechnology and pharmaceutical stocks in particular, have experienced significant volatility that has often been unrelated to the operating performance of particular companies, which has resulted in decreased stock prices for many companies. For example, negative publicity regarding drug pricing and price increases by pharmaceutical companies has negatively impacted, and may continue to negatively impact, the markets for biotechnology and pharmaceutical stocks. Likewise, as a result of significant changes in U.S. social, political, regulatory and economic conditions or in laws and policies governing foreign trade and healthcare spending and delivery, including the possible repeal and/or replacement of all or portions of the Affordable Care Act or changes in tariffs and other restrictions on free trade stemming from U.S. and foreign government policies, or for other reasons, the financial markets could experience significant volatility that could also negatively impact the markets for biotechnology and pharmaceutical stocks. These market fluctuations may adversely affect the trading price of our common stock.

In the past, class action litigation has often been instituted against companies whose securities have experienced periods of volatility in market price. Any such litigation brought against us could result in substantial costs and divert

management's attention and resources, which could result in delays of our clinical studies or our partners' commercialization efforts.

Our principal stockholders own a significant percentage of our stock and will be able to exert significant control or significant influence over matters subject to stockholder approval.

Our principal stockholders own a significant portion of our outstanding common stock. These stockholders may be able to determine the outcome of all matters requiring stockholder approval. For example, these stockholders may be able to control elections of directors, amendments of our organizational documents, or approval of any merger, sale of assets, or other major corporate transaction. This may prevent or discourage unsolicited acquisition proposals or offers for our common stock. The interests of our significant stockholders may not always coincide with the interests of other stockholders and they may act in a manner that advances their best interests and not necessarily those of other stockholders, including seeking a premium value for their common stock, and might affect the market price for our common stock.

Sales of a substantial number of shares of our common stock in the public market could cause our stock price to fall.

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Sales of a substantial number of shares of our common stock in the public market could occur at any time. These sales, or the perception in the market that the holders of a large number of shares intend to sell shares, could reduce the market price of our common stock. Moreover, certain holders of shares of our common stock will have rights, subject to certain conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders. We have registered and intend to continue to register all shares of common stock that we may issue under our equity compensation plans. Once we register these shares, they can be freely sold in the public market upon issuance, subject to volume limitations applicable to affiliates.

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We have incurred and will continue to incur increased costs as a result of being a public company and our management expects to devote substantial time to public company compliance programs.

As a public company, we have incurred and will continue to incur significant legal, accounting and other expenses. We are subject to the reporting requirements of the Exchange Act, which require, among other things, that we file with the SEC annual, quarterly and current reports with respect to our business and financial condition. In addition, the Sarbanes-Oxley Act, as well as rules subsequently adopted by the SEC and The Nasdaq Stock Market to implement provisions of the Sarbanes-Oxley Act, impose significant requirements on public companies, including requiring establishment and maintenance of effective disclosure and financial controls and changes in corporate governance practices. Further, pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, the SEC has adopted and will adopt additional rules and regulations, such as mandatory "say on pay" voting requirements, that now apply to us. Stockholder activism, the current political environment and the potential for future regulatory reform may lead to substantial new regulations and disclosure obligations, which may lead to additional compliance costs and impact the manner in which we operate our business in ways we cannot currently anticipate.

The rules and regulations applicable to public companies have substantially increased our legal and financial compliance costs and make some activities more time-consuming and costly. To the extent these requirements divert the attention of our management and personnel from other business concerns, they could have a material adverse effect on our business, financial condition and results of operations. The increased costs will decrease our net income or increase our net loss and may require us to reduce costs in other areas of our business or increase the prices of our products or services.

Because we do not anticipate paying any cash dividends on our capital stock in the foreseeable future, capital appreciation, if any, will be the sole source of potential gain for our stockholders.

We have never declared or paid cash dividends on our capital stock. We currently intend to retain all of our future earnings, if any, to finance the growth and development of our business. In addition, the terms of any future debt agreements may preclude us from paying dividends. As a result, capital appreciation, if any, of our common stock will be the sole source of gain for our stockholders for the foreseeable future.

Future sales and issuances of our common stock or rights to purchase common stock, including pursuant to our equity incentive plans, could result in additional dilution of the percentage ownership of our stockholders and could cause our stock price to fall.

We expect that significant additional capital will be needed in the future to continue our planned operations. To raise capital, we may sell substantial amounts of common stock or securities convertible into or exchangeable for common stock in one or more transactions at prices and in a manner we determine from time to time. These future issuances of common stock or common stock-related securities, together with the exercise of outstanding options or warrants, and any additional shares issued in connection with acquisitions or in-licenses, if any, may result in material dilution to our investors. Such sales may also result in material dilution to our existing stockholders, and new investors could gain rights, preferences and privileges senior to those of holders of our common stock. To the extent equity valuations, including the trading price of our common stock, are depressed as a result of economic disruptions or other factors, the potential magnitude of this dilution will increase. Pursuant to our equity incentive plans, our compensation committee is authorized to grant equity-based incentive awards to our employees, non-employee directors and consultants. Future grants of RSUs, options and other equity awards and issuances of common stock under our equity incentive plans will result in dilution and may have an adverse effect on the market price of our common stock.

Some terms of our charter documents and Delaware law may have anti-takeover effects that could discourage an acquisition of us by others, even if an acquisition would be beneficial to our stockholders and may prevent attempts by our stockholders to replace or remove our current management.

Our amended and restated certificate of incorporation (Certificate of Incorporation) and amended and restated bylaws (Bylaws), as well as Delaware law, could make it more difficult for a third party to acquire us or increase the cost of acquiring us, even if doing so would benefit our stockholders, or remove our current management. These include terms that:

- permit our board of directors to issue up to 20,000,000 shares of preferred stock, with any rights, preferences and privileges as they may designate;

- provide that all vacancies on our board of directors, including as a result of newly created directorships, may, except otherwise required by law, be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum;
- establish that our board of directors is divided into three classes, with each class serving three-year staggered terms, which makes it more difficult to replace a majority of our directors in a short period of time;

- require that any action to be taken by our stockholders must be effected at a duly called annual or special meeting o stockholders and not be taken by written consent;
- provide that stockholders seeking to present proposals before a meeting of stockholders or to nominate candidates election as directors at a meeting of stockholders must provide advance notice in writing, and also specify requireme as to the form and content of a stockholder's notice;
- not provide for cumulative voting rights, thereby allowing the holders of a majority of the shares of common stock entitled to vote in any election of directors to elect all of the directors standing for election; and
- provide that special meetings of our stockholders may be called only by our board of directors, the chairperson of ou board of directors or our chief executive officer.

Any of the factors listed above may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, who are responsible for appointing the members of our management.

In addition, because we are incorporated in Delaware, we are governed by Section 203 of the Delaware General Corporation Law, which may discourage, delay or prevent someone from acquiring us or merging with us whether or not it is desired by or beneficial to our stockholders. Under Delaware law, a corporation may not, in general, engage in a business combination with any holder of 15% or more of its capital stock unless the holder has held the stock for three years or, among other things, the board of directors has approved the transaction. Any term of our Certificate of Incorporation or Bylaws or Delaware law that has the effect of delaying or deterring a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our common stock and could also affect the price that some investors are willing to pay for our common stock.

Our Bylaws designate a state or federal court located within the State of Delaware as the sole and exclusive forum for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our current or former directors, officers, stockholders, or other employees.

Our bylaws provide that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for (i) any derivative action or proceeding brought on behalf of us under Delaware law, (ii) any action asserting a claim of breach of a fiduciary duty owed by any current or former director, officer, or other employee of the Company to us or our stockholders, (iii) any action asserting a claim against us or any of our directors, officers, or other employees arising pursuant to any provision of the DGCL or our Certificate of Incorporation or Bylaws (as either may be amended from time to time), (iv) any action asserting a claim against us governed by the internal affairs doctrine, or (v) any other action asserting an "internal corporate claim," as defined under Section 115 of the DGCL. The forgoing provisions do not apply to any claims arising under the Securities Act and, unless we consent in writing to the

selection of an alternative forum, the federal district courts of the United States will be the sole and exclusive forum for resolving any action asserting a claim arising under the Securities Act.

These choice of forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or any of our current or former directors, officers, or other employees, which may discourage lawsuits with respect to such claims. There is uncertainty as to whether a court would enforce such provisions, and the enforceability of similar choice of forum provisions in other companies' charter documents has been challenged in legal proceedings. It is possible that a court could find these types of provisions to be inapplicable or unenforceable, and if a court were to find the choice of forum provision to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions,

which could harm our business, results of operations, and financial condition.

We recently qualified as a "smaller reporting company," and any decision on our part to comply only with certain reduced reporting and disclosure requirements applicable to such companies could make our common shares less attractive to investors.

As a result of our public float (the market value of our common shares held by non-affiliates) as of June 30, 2023, we qualify as a "smaller reporting company," as defined under the Exchange Act. In addition, beginning with our Annual Report on Form 10-K for the year ending December 31, 2023, we will be a "non-accelerated filer" as defined under the Exchange Act. For as long as we continue to be a smaller reporting company or a non-accelerated filer, we may choose to take advantage of exemptions from various reporting requirements applicable to other public companies that are not smaller reporting companies or non-accelerated filers, as applicable, including, but not limited to, an exemption from the requirement that our independent registered public accounting firm attest to the effectiveness of our internal control over financial reporting under Section 404 of the Sarbanes-Oxley Act. If we choose not to obtain such attestation from our independent registered public accounting firm, it may impact our ability to maintain the adequacy of our internal control over financial reporting, and any failure to maintain adequacy, or inability to produce accurate financial statements or other reports on a timely basis, could increase our operating costs and could materially impair our ability to

operate our business.

If we choose to rely on any of these disclosure exemptions, the information we provide stockholders will be different than the information that is available with respect to many other public companies. Moreover, if some investors find our common stock less attractive as a result of any choices to reduce future disclosure, there may be a less active trading market for our common stock and the market price of our common stock may be more volatile.

If securities or industry analysts do not publish research or publish inaccurate or unfavorable research about our business, our stock price and trading volume could decline.

The trading market for our common stock will depend in part on the research and reports that securities or industry analysts publish about us and our business. In the event securities or industry analysts who cover us downgrade our stock or publish inaccurate or unfavorable research about us or our business, our stock price would likely decline. If one or more of these analysts cease coverage of our company or fail to publish reports on us regularly, demand for our stock could decrease, which might cause our stock price and trading volume to decline.

General Risk Factors

Our future success depends on our ability to retain our executive officers and to attract, retain and motivate qualified personnel.

We are highly dependent upon our executive officers and other key employees and the loss of the services of any of our executive officers or other key employees, including scientific, technical or management personnel, could impede the achievement of our corporate objectives. In August 2022, we announced a reduction of our workforce by approximately 20% across all areas of our company, including members of management. In November 2023, we announced that we plan to implement a further reduction of our workforce by approximately 30%. Losing members of management and other key personnel subjects us to a number of risks, including the failure to coordinate responsibilities and tasks, the necessity to create new management systems and processes, the impact on corporate culture, and the retention of historical knowledge.

Our success depends on our ability to recruit, retain, manage and motivate our employees. Although we enter into employment agreements or offer letters with our employees, these documents provide for "at-will" employment, which means that any of our employees could leave our employment at any time, with or without notice. Competition for skilled personnel in our industry and geographic regions is intense and may limit our ability to hire and retain qualified personnel on acceptable terms or at all. To induce valuable employees to remain at our company, in addition to salary and cash incentives, we have provided equity awards that vest over time. The value to employees of equity awards may be significantly affected by movements in our stock price that are beyond our control and may at any time be insufficient to counteract more lucrative offers from other companies.

Our relationships with customers and third party payors will be subject to applicable anti-kickback, fraud and abuse, privacy and other laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm and diminished profits and future earnings.

Healthcare providers, including physicians, and third party payors will play a primary role in the recommendation and prescription of our product and any product candidates for which we obtain regulatory approval. Our current and future arrangements with third party payors and customers may expose us to broadly applicable federal and state fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we conduct research and would market, sell and distribute our products. As a biopharmaceutical company, even though we do not and will not control referrals of healthcare services or bill directly to Medicare, Medicaid or other third party payors, federal and state healthcare laws and regulations pertaining to fraud and abuse and patients' rights are and will

be applicable to our business. If we obtain FDA approval of any of our product candidates and our partners begin commercializing those products in the United States, our potential exposure under such laws will increase significantly, and our costs associated with compliance with such laws are also likely to increase. These laws may impact, among other things, our current activities with principal investigators and research patients, as well as proposed and future sales, marketing and education programs, distribution agreements, discounting, commission compensation, certain patient support offerings, and other business arrangements generally. In addition, the approval and commercialization of our product and any of our product candidates outside the United States will also likely subject us to foreign equivalents of the healthcare laws mentioned here, among other foreign laws. Restrictions under applicable federal and state healthcare laws and regulations that may affect certain business arrangements and our ability to operate include, but are not limited to, the following:

- the federal healthcare Anti-Kickback Statute, a criminal law that governs, for example, our marketing practices, educational programs, pricing policies, and relationships with healthcare providers or other entities, by prohibiting, among other things, persons from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, overtly or covertly, in cash or in kind, to induce or reward, or in return for, either the referral of a individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made under a federal healthcare program such as Medicare and Medicaid;
- the FDCA and PHSA, which prohibit the misbranding and adulteration of biological products that are regulated as dru and which regulate the marketing of biological products;
- federal civil and criminal false claims laws, including the civil False Claims Act, which can be enforced through civil whistleblower or qui tam actions, and civil monetary penalty laws impose criminal and civil penalties against individu or entities for knowingly presenting, or causing to be presented, to the federal government, including the Medicare a Medicaid programs, claims for payment or approval that are false or fraudulent or making a false statement to avoid decrease or conceal an obligation to pay money to the federal government;
- provisions enacted under the federal Health Insurance Portability and Accountability Act of 1996 (HIPAA) impose criminal and civil liability for knowingly and willfully executing or attempting to execute, a scheme or artifice to defrau any healthcare benefit program and also impose criminal liability for, among other things, knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statements in connection with the delivery of or payment for healthcare benefits, items or services;
- HIPAA, as amended by HITECH also imposes obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information held by covered entities and their business associates and their subcontractors that use, disclose or otherwise process individually identifiable health information;
- the federal Physician Payments Sunshine Act, implemented as the Open Payments Program, which requires certain manufacturers of drugs, devices, biologics and medical supplies to report annually to CMS information related to payments and other transfers of value to U.S.-licensed physicians (defined to include doctors, dentists, optometrists podiatrists and chiropractors), physician assistants, nurse practitioners, clinical nurse specialists, anesthesiologist assistants, certified registered nurse anesthetists and certified nurse midwives and U.S. teaching hospitals, and ownership and investment interests held by physicians and their immediate family members and applicable group purchasing organizations;
- state and foreign laws and regulations that are analogous to, and may be broader in scope than, the federal laws and regulations described in this risk factor, such as state anti-kickback and false claims laws, may apply to sales or marke

or other arrangements and claims involving healthcare items or services reimbursed by non-governmental third par payors, including private insurers; and

- state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary complian guidelines and the relevant compliance guidance promulgated by the federal government; some state laws require d manufacturers to report information regarding pricing and marketing information related to payments and other transfers of value to physicians and other healthcare providers as well as those that require the registration of pharmaceutical sales

representatives; and some other state laws require the protection of the privacy and security of health information, which may differ from each other in significant ways and often are not preempted by HIPAA.

Efforts to ensure that our business arrangements with third parties comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices do not comply with current or future statutes, regulations or case law involving applicable healthcare laws and regulations. If our operations are found to be in violation of any of these laws or any other governmental regulations, we may be subject to significant civil, criminal and administrative penalties, damages, fines, imprisonment, exclusion from government-funded healthcare programs, such as Medicare and Medicaid, disgorgement, additional reporting requirements or oversight if we become subject to a corporate integrity agreement or similar agreement, and the curtailment or restructuring of our operations, reputational harm, contractual damages, and diminished profits and future earnings, any of which could adversely affect our ability to operate our business and our results of operations. If any physicians or other healthcare providers or entities with whom we expect to do business are found to not be in compliance with applicable laws, they may be subject to significant criminal, civil or administrative sanctions, including exclusions from government-funded healthcare programs.

Our employees may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements, which could cause significant liability for us and harm our reputation.

We are exposed to the risk of employee fraud or other misconduct, including intentional failures to comply with FDA regulations or similar regulations of comparable foreign regulatory authorities, provide accurate information to the FDA or comparable foreign regulatory authorities, comply with manufacturing standards we have established, comply with federal and state healthcare fraud and abuse laws and regulations and similar laws and regulations established and enforced by comparable foreign regulatory authorities, report financial information or data accurately or disclose unauthorized activities to us. Employee misconduct could also involve the improper use of information obtained in the course of clinical studies, which could result in regulatory sanctions and serious harm to our reputation. It is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business and results of operations, including the imposition of significant fines or other sanctions.

Product liability lawsuits against us could cause us to incur substantial liabilities and to limit commercialization of any products that we may develop.

We face an inherent risk of product liability exposure related to the testing of our product candidates in human clinical studies and will face an even greater risk if we commercially sell any products that we may develop. Product liability claims may be brought against us by subjects enrolled in our clinical studies, patients, healthcare providers or others using, administering or selling our products. If we cannot successfully defend ourselves against claims that our product candidates or products caused injuries, we could incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any product candidates or products that we may develop;
- clinical holds or termination of clinical study sites or entire study programs;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical study participants;
- significant costs to defend the related litigation;
- substantial monetary awards to study subjects or patients;
- loss of revenue;
- diversion of management and scientific resources from our business operations; and
- the inability to commercialize any products that we may develop.

We currently hold product liability insurance coverage at a level that we believe is customary for similarly situated companies and adequate to provide us with insurance coverage for foreseeable risks, but which may not be adequate to cover all liabilities that we may incur. We may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise. As deemed necessary, we may expand our insurance coverage for products to include the sale of commercial products if we obtain regulatory approval for our product candidates in development, but we may be unable to obtain commercially reasonable product liability insurance for any products that receive regulatory approval. Large judgments have been awarded in class action

lawsuits based on drugs that had unanticipated side effects. A successful product liability claim or series of claims brought against us, particularly if judgments exceed our insurance coverage, could decrease our cash and adversely affect our business.

If we and our third party manufacturers fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could have a material adverse effect on the success of our business.

We and our third party manufacturers are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. Our operations involve the use of hazardous and flammable materials, including chemicals and

biological materials. Our operations also produce hazardous waste products. We generally contract with third parties for the disposal of these materials and wastes. We cannot eliminate the risk of contamination or injury from these materials. In the event of contamination or injury resulting from our or our third party manufacturers' use of hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties.

Although we maintain workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous materials with a policy limit that we believe is customary for similarly situated companies and adequate to provide us with insurance coverage for foreseeable risks, this insurance may not provide adequate coverage against potential liabilities. We do not maintain insurance for environmental liability or toxic tort claims that may be asserted against us in connection with our storage or disposal of biological or hazardous materials.

In addition, we may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations. These current or future laws and regulations may impair our research, development or production efforts. Failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions, which could adversely affect our business, financial condition, results of operations and prospects.

The actual or perceived failure by us, our customers, or vendors to comply with increasingly stringent laws, regulations and contractual obligations relating to privacy, data protection, and data security could harm our reputation, and subject us to significant fines and liability.

We are or may become subject to numerous domestic and foreign laws and regulations regarding privacy, data protection, and data security, the scope of which is changing, subject to differing applications and interpretations and may be inconsistent among countries, or conflict with other rules. We are also subject to the terms of our contractual obligations to customers and third parties related to privacy, data protection, and data security. The actual or perceived failure by us, our customers, our vendors, or other relevant third parties to address or comply with these laws, regulations, and obligations could increase our compliance and operational costs, expose us to regulatory scrutiny, actions, fines and penalties, cause regulators to reject, limit or disrupt our clinical trial activities, result in reputational harm, lead to a loss of customers, reduce the use of our products, result in litigation and liability, and could otherwise cause a material adverse effect on our business, financial condition, and results of operations.

For example, the EU adopted the General Data Protection Regulation (EU) 2016/679 (EU GDPR), in May 2018 which introduced strict requirements for the processing of personal information of individuals (or data subjects). The EU GDPR governs the collection, use, disclosure, transfer and other processing of personal information and has direct effect in all EU Member States and extraterritorial effect where organizations outside of the European Economic Area (EEA)process personal information of individuals in the EEA in relation to the offering of goods or services to those individuals (the "targeting test") or monitoring of their behavior (the "monitoring test"). As such, the EU GDPR applies to us to the extent we are established in an EU Member State, we are processing personal information in the context of an establishment in an EU Member State or we meet the requirements of either the targeting test or the monitoring test.

The EU GDPR imposes onerous and comprehensive privacy, data protection, and data security obligations onto controllers and processors, including, as applicable: (i) contractual privacy, data protection, and data security commitments, including the requirement to implement appropriate technical and organizational measures to safeguard personal information processed; (ii) establishing means for individuals to exercise their data protection rights (e.g., the right to erasure of personal information); (iii) limitations on retention and the amount of personal information processed; (iv) additional requirements pertaining to sensitive information (such as health data); (v) data breach notification requirements to supervisory authorities without undue delay (and no later than 72 hours where feasible) and/or concerned individuals; (vi) enhanced requirements for obtaining valid consent from data subjects; (vii) obligations to consider data protection as any new products or services are developed; and (viii) the provisions of more detailed privacy notices for clinical trial subjects and investigators. The EU GDPR also provides that EU Member States may introduce further laws and regulations limiting the processing of genetic, biometric, or health data, which could limit our ability to collect, use and share EU personal information, cause our compliance costs to increase, require us to change our practices, adversely impact our business, and harm our financial condition.

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The EU GDPR also restricts the transfer of personal information from the EEA to the United States and other countries that the European Commission does not recognize as having "adequate" data protection laws unless the parties to the transfer have implemented specific safeguards to protect the transferred personal information. Data protection laws in the UK (as discussed below) and Switzerland impose similar restrictions. One of the primary safeguards allowing U.S. companies to import personal information from the EU and Switzerland had historically been certification to the EU-U.S. Privacy Shield framework, which is administered by the U.S. Department of Commerce, and Swiss-U.S. Privacy Shield framework respectively. However, the EU-U.S. Privacy Shield framework was invalidated as a mechanism to legitimize international transfers in July 2020 in the "Schrems II" decision handed down by the Court of Justice of the EU (CJEU) and imposed further restrictions on the use of standard contractual clauses (SCCs). The Schrems II decision also led to a requirement for companies to carry out a transfer privacy impact assessment which, among other things, assess laws governing access to personal information in the recipient country and considers whether supplementary measures that provide privacy protections additional to those under the SCCs will need to be implemented to ensure an "essentially equivalent" level of data protection to that afforded in the EU. Similarly, the Swiss-U.S. Privacy Shield framework was declared as inadequate by the Swiss Federal Data Protection and Information Commissioner in light of the Schrems II decision. Moreover, new versions of the European Commission's Standard Contractual Clauses (new EU SCCs), now the primary safeguard available for the lawful transfer of

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personal information from the EU to the U.S., were adopted in June 2021 to account for the decision in Schrems II and which impose onerous obligations on the contracting parties. At present, there are few, if any, viable alternatives to the SCCs.

However, on October 7, 2022, the U.S. President introduced an Executive Order to facilitate a new Trans-Atlantic Data Privacy Framework (DPF), which will act as a successor to the invalidated Privacy Shield. ON December 13, 2022, the European Commission also published its draft adequacy decision which stated that the new Executive Order and Trans-Atlantic Data Privacy Framework is able to meet the concerns raised in Schrems II. If II, and on July 10, 2023, the draft EC adopted its Final

Implementing Decision granting the US adequacy decision is approved by the European Commission and implemented, the agreement will facilitate the transatlantic flow of personal information and provide additional safeguards (Adequacy Decision) with respect to data transfer mechanisms (including EU SCCs and Binding Corporate Rules) for companies transferring personal information from the EU that subscribe to the U.S. However, before parties Trans-Atlantic Data Privacy Framework. Entities relying on SCCs for transfer to the US are able to rely on the new Trans-Atlantic Data Privacy Framework there are still legislative and regulatory steps that must be undertaken analysis in both the EU and the U.S. As such, Adequacy Decision as support for their transfer impact assessments required by Schrems II. However, any transfers by us or our vendors of personal information from the EU may not comply with European data protection law, may increase our exposure to the EU GDPR's heighted sanctions for violations of its cross-border data transfer restrictions, and may reduce demand from companies subject to European data protection laws.

Complying with the EU GDPR involves rigorous and time-intensive processes that may cause us to incur certain operational costs and/or require us to change our business practices. There may also be a risk that the measures will not be implemented correctly or that individuals within the business will not be fully compliant with the required procedures. Assisting our customers, partners, and vendors in complying with the EU GDPR, or complying with the EU GDPR ourselves, may cause us to incur substantial operational costs or require us to change our business practices. There may also be a risk that the measures will not be implemented correctly or that individuals within the business will not be fully compliant with the required procedures.

Companies that must comply with the EU GDPR face increased compliance obligations and risk, including more robust regulatory enforcement of data protection requirements, potential significant fines for non-compliance of up to the greater of €20 million or 4% of consolidated annual global turnover and restrictions or prohibitions on data processing. The EU GDPR also confers a private right of action on data subjects and consumer associations to lodge complaints with supervisory authorities, seek judicial remedies and obtain compensation for damages resulting from violations of the EU GDPR.

Further, following the UK's exit from the EU, known as Brexit, the EU GDPR's obligations continue to apply to the UK in substantially unvaried form under the so called "UK GDPR" by virtue of section 3 of the European Union (Withdrawal) Act 2018. The UK GDPR exists alongside the UK Data Protection Act 2018 which implements certain derogations in the UK GDPR into English law. Under the UK GDPR, companies established in the United Kingdom and companies not established in the UK but who process personal information in relation to the offering of goods or services to individuals in the UK, or to the monitoring of their behavior will be subject to the UK GDPR – the requirements of which are (at this time) largely aligned with those under the EU GDPR and as such, may lead to similar compliance and operational costs with potential fines of up to the greater of £17.5 million or 4% of consolidated annual global turnover. As a result, we are potentially exposed to two parallel data protection regimes, each of which authorizes fines and the potential for divergent enforcement actions. It should also be noted that the UK Information Commissioner's Office (ICO) has published its own form of EU SCCs known as the UK International Data Transfer Agreement together with an International Data Transfer Addendum to the new EU SCCs. The ICO has also published its version of the transfer impact assessment and revised guidance on international transfers, although entities may choose to adopt either the EU or UK style transfer impact assessment. In terms of international data transfers between the UK and the U.S. on September 21, 2023, it is understood that regulations were laid in the UK and Parliament to give effect to the UK Extension to the DPF – otherwise known as the "UK-U.S. Data Bridge." The regulations took effect on

October 12, 2023. The UK-U.S. Data Bridge – which is the UK's equivalent to the Adequacy Decision – will enable companies in the UK to lawfully transfer personal information to participating organizations in the U.S. are negotiating an adequacy agreement.without the need to implement additional safeguards.

Other countries outside of Europe and the UK continue to enact or are considering enacting similar cross-border data transfer restrictions and laws requiring local data residency, which could increase the cost and complexity of delivering our services and operating our business. For example, Brazil recently enacted the General Data Protection Law (Lei Geral de Proteção de Dados

Pessoais or LGPD) (Law No. 13,709/2018), which broadly regulates the processing of personal information and imposes compliance obligations and penalties comparable to those of the EU GDPR and the UK GDPR.

Regulation of privacy, data protection and data security has also become more stringent in the United States. For example, the California Consumer Privacy Act (CCPA), which took effect on January 1, 2020, give California residents expanded rights to access and delete their personal information, opt out of certain personal information sharing, and receive detailed information about how their personal information is used. The CCPA provides for civil penalties for violations, as well as a private right of action for data breaches that is expected to increase data breach litigation. The CCPA may increase our compliance costs and potential liability. The CCPA was substantially expanded on January 1, 2023, when the California Privacy Rights Act (CPRA) amendments to the CCPA became fully operative. The CPRA amendments, among other things, give California residents the ability to limit use of certain sensitive personal information, further restrict the use of cross-contextual advertising, establish restrictions on the retention of personal information, expand the types of data breaches subject to the CCPA's private right of action, provide for increased penalties for CCPA violations concerning California residents under the age of 16, and establish a new California Privacy Protection Agency to implement

and enforce the new law. Other states, such as Colorado, Connecticut, Utah, and Virginia, have already passed similar comprehensive privacy laws that have or will also go into effect in 2023. Regulation of privacy, data protection and data security has also become more stringent in the United States, with several new laws being enacted at the state level. While these Colorado, Connecticut and Virginia passed comprehensive state privacy laws, generally include exemptions for HIPAA-covered which became effective ono July 1, 2023, July 1, 2023 and clinical trial data, they impact the overall January 1, 2023, respectively. Likewise, Utah passed a comprehensive privacy landscape. Iowa also passed similar laws that law, which will go into effect on December 31, 2023. Several states have also passed similar privacy laws that will become effective in 2025 2024 or later, including Delaware, Indiana, Iowa, Montana, Oregon, Tennessee and several more Texas. Multiple other states and the federal government are considering their own versions of privacy enacting similar legislation, demonstrating a strong trend towards more stringent state privacy, data protection and data security legislation in the U.S., which could increase our potential liability and adversely affect our business. Other states have passed or amended existing state privacy laws to impose enhanced privacy and cybersecurity obligations for consumer health data, such as, the Washington My Health My Data Act and Nevada's Consumer Health Data Privacy Law. While these laws generally include exemptions for HIPAA-covered and clinical trial data, they impact the overall privacy landscape.

Lawmakers and regulatory bodies at the federal level have been considering more detailed regulation regarding these subjects and the privacy and security of personal information. For example, the FTC recently published an advance notice of proposed rulemaking on "commercial surveillance" and data security, and is seeking comment on whether it should implement new trade regulation rules or other regulatory alternatives concerning the ways in which companies (1) collect, aggregate, protect, use, analyze, and retain consumer data, as well as (2) transfer, share, sell, or otherwise monetize that data in ways that are unfair or deceptive. The FTC's rulemaking may create change throughout the economy and broader data ecosystem. Additionally, the OCR has issued a Notice of Proposed Rulemaking, which propose a number of changes to the HIPAA Privacy Rule, which is expected to be released in 2023. For example, the proposed changes clarify the definition of electronic health records, enhance visibility for access fees and specify additional individual's access rights.

The Federal Trade Commission (FTC) has authority under Section 5 of the FTC Act to regulate unfair or deceptive practices, and has used this authority to initiate enforcement actions against companies that implement inadequate controls around privacy and information security in violation of their externally facing policies. The FTC has recently brought several cases alleging violations of Section 5 of the FTC Act with respect to health information, and has proposed rulemaking on privacy and data security.

Compliance with applicable U.S. and foreign privacy, data protection, and data security laws and regulations may result in government investigations or cause us to incur substantial costs or require us to change our business practices and compliance procedures in a manner adverse to our business. Moreover, complying with these various laws could require us to take on more onerous obligations in our contracts, restrict our ability to collect, use and disclose data, or in some cases, impact our ability to operate in certain jurisdictions. Failure to comply with U.S. and foreign privacy, data protection, and data security laws and regulations could result in government investigations or enforcement actions (which could include civil or criminal penalties), private litigation, claims, or public statements against us and/or adverse publicity and could negatively affect our operating results and business. Claims that we have violated individuals' privacy rights, failed to comply with privacy, data protection, and data security laws, or breached our contractual obligations, even if we are not found liable, could be expensive and time consuming to defend, could result in adverse publicity and could have a material adverse effect on our business, reputation, financial performance and business, and operations. Furthermore, the costs of compliance with, and other burdens imposed by, the laws, regulations and policies that are applicable to the business of our customers may limit the adoption and use of, and reduce the overall demand for, our products and services.

If our security measures are compromised, or our information technology systems or those of our vendors, and other relevant third parties fail or suffer security breaches, loss or leakage of data, and other disruptions, this could result in a material disruption of our services, compromise sensitive information related to our business, harm our reputation, trigger our breach notification obligations, prevent us from accessing critical information, and expose us to liability or other adverse effects to our business.

In the ordinary course of our business, we may collect, process, and store proprietary, confidential, and sensitive information, including personal information (including health information), intellectual property, trade secrets, and proprietary business information owned or controlled by ourselves or other parties. It is critical that we do so in a secure manner to maintain the confidentiality, integrity, and availability of such information. We face several risks relative to protecting this critical information, including loss of access risk, inappropriate use or disclosure, inappropriate modification,

and the risk of our being unable to adequately monitor, audit and modify our controls over our critical information. This risk extends to the third party service providers who handle elements of our operations.

We, our partners, our CROs, our CMOs, and other business vendors on which we rely depend on information technology and telecommunication systems for significant elements of our operations, including, for example, systems handling human resources, financial reporting and controls, regulatory compliance and other infrastructure operations. Notwithstanding the implementation of

security measures, given the size and complexity of our information technology systems and those of our third party vendors and other contractors and consultants, and the increasing amounts of proprietary, confidential and sensitive information that they maintain, such information technology systems have been subject to and remain vulnerable to breakdown, service interruptions, system malfunction, natural disasters, terrorism, war and telecommunication and electrical failures, as well as security breaches from inadvertent or intentional actions by our personnel, third party vendors, contractors, consultants, business partners, and/or other third parties, or from

cyber-attacks by malicious third parties (including the deployment of harmful malware, ransomware, denial-of-service attacks, social engineering, and other means to affect service reliability and threaten the confidentiality, integrity, and availability of information), which may compromise our system infrastructure, or that of our third party vendors and other contractors and consultants, or lead to data leakage. The risk of a security breach or disruption, particularly through accidental actions or omissions by trusted insiders, cyber attacks or cyber intrusions, including by computer hackers, viruses, foreign governments, and cyber terrorists, has generally increased as the number, intensity, and sophistication of attempted attacks and intrusions from around the world have increased. Additionally, the increased usage of computers operated on home networks due to the shelter-in-place or similar restrictions related to the COVID-19 pandemic may make our systems more susceptible to security breaches. For example, in March 2021, MSK provided notice that MSK was one of many customers impacted by a data breach at Accellion, Inc., which provides a document-sharing system. MSK subsequently notified us that certain documents related to one of our discontinued programs were subject to the breach, which compromise we deemed immaterial. Although we take measures to protect sensitive data from unauthorized access, use or disclosure, we and our third party service providers frequently defend against and respond to cyber attacks, and our information technology and infrastructure may be vulnerable to attacks by hackers or viruses or breached due to personnel error, malfeasance, or other malicious or inadvertent disruptions. Any such breach or interruption could compromise our networks and the information stored there could be accessed by unauthorized parties, manipulated, publicly disclosed, lost, or stolen.

Failures or significant downtime of our information technology or telecommunication systems or those used by our third party service providers could cause significant interruptions to our operations, including preventing us from conducting tests or research and development activities and preventing us from managing the administrative aspects of our business. For example, the loss of clinical study data from completed, ongoing or planned clinical studies could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. In addition, sophisticated operating system software and applications that we procure from third parties may contain defects in design or manufacture,

including vulnerabilities, “bugs” and other problems that could unexpectedly interfere with the operation of our networks, system, or our processing of personal information or other data. To the extent that any disruption or security breach results in a loss of or damage to our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability, the further development of our product candidates could be delayed and our business could be otherwise adversely affected.

We may not be able to anticipate all types of security threats, and we may not be able to implement preventative measures effective against all such security threats. We also may not be effective in responding to, containing or mitigating the risks of an attack. The techniques used by cyber criminals change frequently, may not be recognized until launched, and can originate from a wide variety of sources, including outside groups such as external service providers, organized crime affiliates, terrorist organizations, hostile foreign governments or agencies, or cybersecurity researchers. To the extent that any disruption or security breach were to result in a loss of, or damage to, our data or applications, or those of our third party vendors and other contractors and consultants, or inappropriate disclosure of confidential or proprietary information, we could incur liability and reputational damage and the further development and commercialization of our products and services could be delayed.

The costs related to significant security breaches or disruptions could be material and could exceed the limits of the cybersecurity insurance we maintain, if any, against such risks. If the information technology systems of our third party vendors and other contractors and consultants become subject to disruptions or security breaches, we may have insufficient recourse against such third parties and may have to expend significant resources to mitigate the impact of such an event, and to develop and implement protections to prevent future events of this nature from occurring.

We cannot assure you that our data protection efforts and our investment in information technology will prevent significant breakdowns, data leakages, breaches in our systems, or those of our third party vendors and other contractors and consultants, or other cyber incidents that could have a material adverse effect upon our reputation, business, operations, or financial condition. For example, if such an event were to occur and cause interruptions in our operations, or those of our third party vendors and other contractors and consultants, it could result in a material disruption of our programs and the development of our services and technologies could be delayed. Furthermore, significant disruptions of our internal information technology systems or those of our third party vendors and other contractors and consultants, or security breaches could result in the loss, misappropriation, and/or unauthorized access, use, or disclosure of, or the prevention of access to, confidential information (including trade secrets or other intellectual property, proprietary business information, and personal information), which could result in financial, legal, business, and reputational harm to us. For example, any such event that leads to unauthorized access, use, or disclosure of personal information, including personal information regarding our customers or employees, could harm our reputation directly, compel us to comply with federal and/or state breach notification laws and foreign law equivalents, subject us to mandatory corrective action, and otherwise

subject us to liability under laws and regulations that protect the privacy and security of personal information, which could result in significant legal and financial exposure and reputational damages that could potentially have an adverse effect on our business.

Although we take measures to protect sensitive data from unauthorized access, use or disclosure, our information technology and infrastructure may be vulnerable to attacks by hackers or viruses or breached due to personnel error, malfeasance, or other malicious or inadvertent disruptions. Any such breach or interruption could compromise our networks and the information stored there could be accessed by unauthorized parties, manipulated, publicly disclosed, lost, or stolen.

Any such access, breach, or other loss of information could result in legal claims or proceedings, liability under domestic or foreign privacy, data protection and data security laws such as HIPAA and HITECH, and penalties. Notice of certain security breaches must be made to affected individuals, the Secretary of HHS, and for extensive breaches, notice may need to be made to the media or state attorneys general. Such notice could harm our reputation and our ability to compete. Although we have implemented security measures, such data is currently accessible through multiple channels, and there is no guarantee we can protect our data from breach. Unauthorized access, loss or dissemination could also damage our reputation or disrupt our operations, including our ability to conduct our analyses, conduct research and development activities, collect, process and prepare company financial information, and manage the administrative aspects of our business.

Notably, on July 26, 2023, the SEC adopted a final rule on cybersecurity risk management, strategy, governance and incident disclosure (SEC Cyber Rule). The SEC Cyber Rule requires public companies to make current disclosures about material cybersecurity incidents as well as annual disclosures of material information about their cybersecurity risk management, strategy and governance. The SEC Cyber Rule became effective on September 5, 2023.

Penalties for violations of these laws vary. For instance, penalties for failure to comply with a requirement of HIPAA and HITECH vary significantly, and include significant civil monetary penalties and, in certain circumstances, criminal penalties with fines up to $250,000 per violation and/or imprisonment. A person who knowingly obtains or discloses individually identifiable health information in violation of HIPAA may face a criminal penalty of up to $50,000 and up to one-year imprisonment. The criminal penalties increase if the wrongful conduct involves false pretenses or the intent to sell, transfer or use identifiable health information for commercial advantage, personal gain or malicious harm.

Further, various states, such as California and Massachusetts, have implemented similar privacy laws and regulations, such as the California Confidentiality of Medical Information Act, that impose restrictive requirements regulating the use and disclosure of health information and other personally identifiable information. These laws and regulations are not necessarily preempted by HIPAA, particularly if a state afford greater protection to individuals than HIPAA. Where state laws are more protective, we have to comply with the stricter provisions. In addition to fines and penalties imposed upon violators, some of these state laws also afford private rights of action to individuals who believe their personal information has been misused. California's patient privacy laws, for example, provide for penalties of up to $250,000 and permit injured parties to sue for damages. Similarly, the CCPA allows consumers a private right of action when certain personal information is subject to unauthorized access and exfiltration, theft or disclosure due to a business' failure to implement and maintain reasonable security procedures. The interplay of federal and state laws may be subject to varying interpretations by courts and government agencies, creating complex compliance issues for us and data we receive, use and share, potentially exposing us to additional expense, adverse publicity and liability. Further, as regulatory focus on privacy issues continues to increase and

laws and regulations concerning the protection of personal information expand and become more complex, these potential risks to our business could intensify. Changes in laws or regulations associated with the enhanced protection of certain types of sensitive data, for the treatment of genetic data, along with increased customer demands for enhanced data security infrastructure, could greatly increase our cost of providing our products, decrease demand for our products, reduce our revenues and/or subject us to additional liabilities.

Changes in tax laws or regulations that are applied adversely to us or our customers may have an adverse effect on our business, cash flows, financial condition or results of operations.

We are subject to income and non-income based taxes in the U.S. and various jurisdictions outside the U.S. Our business and financial condition could be adversely affected by changes in federal, state, local or international tax laws, changes in taxing jurisdictions' administrative interpretations, decisions, policies and positions, changes in accounting principles, applicability of withholding taxes, and changes to our business operations. For example, U.S. legislations legislation such as the Tax Act, the Coronavirus Aid, Relief, and Economic Security Act (CARES Act), and the American Rescue Act, made significant changes to the corporate tax rate, the potential realization of net deferred tax assets relating to our operations, taxation of foreign earnings, and deductibility of expenses, and could have a material impact on our financial position or results of operations.

Our ability to use net operating loss carryforwards and certain tax assets to offset future taxable income or taxes may be subject to certain limitations.

Our ability to use our federal and state net operating losses (NOLs) and certain other tax attributes to offset potential future taxable income and related income taxes that would otherwise be due is dependent upon our generation of future taxable income, and we cannot predict with certainty when, or whether, we will generate sufficient taxable income to use all of our NOLs or other tax attributes.

As of December 31, 2022, we had significant U.S. federal and state NOLs due to prior period losses. Under the Tax Cuts and Jobs Act (the Tax Act), federal NOLs generated in tax years beginning on or after January 1, 2018 may be carried forward indefinitely, but the utilization of such federal NOLs is limited to 80% of current year taxable income. The CARES Act temporarily suspends this 80% taxable income limitation, allowing an NOL carryforward to fully offset taxable income in tax years beginning before January 1, 2021. It is uncertain if, and to what extent, various states will conform to the Tax Act or the CARES Act. Neither the Tax Act nor the CARES Act had a material impact to our financial statements.

In addition, under Section 382 of the Internal Revenue Code of 1986, as amended (the Code), our ability to utilize these NOLs and other tax attributes, such as federal tax credits, in any taxable year may be limited if we have experienced an "ownership change". Generally, a Section 382 ownership change occurs if one or more stockholders or groups of stockholders who owns at least 5% of a corporation's stock increases its ownership by more than 50 percentage points over its lowest ownership percentage within a three-year testing period. Similar rules may apply under state tax laws. We performed a

Section 382 analysis of transactions in our stock through December 31, 2022 and concluded that we have experienced ownership changes since inception that we believe under Section 382 of the Code will result in limitations on our ability to use certain pre-change NOLs and credits. In addition, we may experience subsequent ownership changes as a result of future equity offerings or other changes in the ownership of our stock, some of which are beyond our control. As a result, the amount of the NOLs and tax credit carryforwards presented in our financial statements could be limited and, in the case of NOLs generated before January 1, 2018 may expire unused. Any such material limitation or expiration of our NOLs may harm our future operating results by effectively increasing our future tax obligations. Similar provisions of state tax law may also apply to limit the use of accumulated state tax attributes. Regulatory changes, such as suspensions on the use of NOLs, or other unforeseen reasons, may cause our existing tax attributes to expire, decrease in value or otherwise be unavailable to offset future income tax liabilities.

Business disruptions could seriously harm our future revenues and financial condition and increase our costs and expenses.

Our operations could be subject to earthquakes, power shortages, telecommunications failures, water shortages, floods, hurricanes, typhoons, fires, extreme weather conditions, medical epidemics and other natural or man-made disasters or business interruptions, for which we are predominantly self-insured. Two of our corporate locations are located in California, an area prone to earthquakes and fires. The occurrence of any of these business disruptions could seriously harm our operations and financial condition and increase our costs and expenses. We rely on third-party manufacturers to produce our product candidates. Our ability to obtain clinical supplies of product candidates could be disrupted, if the operations of these suppliers are affected by a man-made or natural disaster or other business interruption, including, for example, the COVID-19 pandemic.

Item 6. Exhibits

Exhibit No.	Description of Exhibit	Incorporated by Reference				Filed Herewith	Description of Exhibit	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date			Form	File No.	Exhibit	Filing Date	

3.1	Amended and Restated Certificate of Incorporation of Atara Biotherapeutics, Inc.	S-1	333-196936	3.2	6/20/2014		Amended and Restated Certificate of Incorporation of Atara Biotherapeutics, Inc.	S-1	333-196936	3.2	6/20/2014	
3.2	Second Amended and Restated Bylaws of Atara Biotherapeutics, Inc.	8-K	001-36548	3.1	9/27/2022		Second Amended and Restated Bylaws of Atara Biotherapeutics, Inc.	8-K	001-36548	3.1	9/27/2022	

10.1 +	Amendment No. 5 to Commercial Manufacturing Services Agreement between Atara Biotherapeutics, Inc. and Charles River Laboratories, Inc. dated September 27, 2023			X

10.2 *			Form of Restricted Stock Unit Agreement and Restricted Stock Unit Grant Notice		X
31.1	Certification by Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002	X	Certification by Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002		X

31.2	Certification by Principal Financial and Accounting Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002	X	Certification by Principal Financial and Accounting Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002	X	

32.1(1)	Certifications of Chief Executive Officer and Principal Financial and Accounting Officer pursuant to 18 U.S.C Section 1350 as adopted pursuant to Section 906 of The Sarbanes-Oxley Act of 2002		X	Certifications of Chief Executive Officer and Principal Financial and Accounting Officer pursuant to 18 U.S.C Section 1350 as adopted pursuant to Section 906 of The Sarbanes-Oxley Act of 2002		X

101.INS	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document	X	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document		X

101.SCH	Inline XBRL Taxonomy Extension Schema Document	X	Inline XBRL Taxonomy Extension Schema Document	X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document	X	Inline XBRL Taxonomy Extension Calculation Linkbase Document	X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document	X	Inline XBRL Taxonomy Extension Definition Linkbase Document	X

101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document	X		Inline XBRL Taxonomy Extension Label Linkbase Document	X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document.	X		Inline XBRL Taxonomy Extension Presentation Linkbase Document.	X

104	The cover page from the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2023, formatted in Inline XBRL.	X	The cover page from the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2023, formatted in Inline XBRL.	X	

+ Portions of this exhibit have been omitted as being both (i) not material and (ii) the type of information that the registrant treats as private or confidential.

*Indicates management contract or compensatory plan or arrangement.

(1) The certifications attached as Exhibit 32.1 accompany this Quarterly Report on Form 10-Q pursuant to 18 U.S.C. Section 13 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, and shall not be deemed "filed" by the Registrant fo purposes of Section 18 of the Securities Exchange Act of 1934, as amended.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, Atara Biotherapeutics, Inc. has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

ATARA BIOTHERAPEUTICS, INC.

Date: August 8, 2023 November 1, 2023

By: /s/ Pascal Touchon

Pascal Touchon

President and Chief Executive Officer

(Duly Authorized Officer and Principal Executive Officer)

By: /s/ Eric Hyllengren

Eric Hyllengren

Chief Financial Officer

(Duly Authorized Officer and Principal Financial and Accounting Officer)

Exhibit 10.1

AMENDMENT NO. 5 TO COMMERCIAL MANUFACTURING SERVICES AGREEMENT

This Amendment No. 5 to the Commercial Manufacturing Services Agreement ("**Fifth Amendment**") is made, entered into and effective as of September 27, 2023 (the "**Fifth Amendment Effective Date**") by and between **ATARA BIOTHERAPEUTICS, INC.**, a Delaware corporation with offices at 2380 Conejo Spectrum Street, Suite 200, Thousand Oaks, CA 91320 ("**Atara**"); and **CHARLES RIVER LABORATORIES, INC.** (successor in interest to **COGNATE BIOSERVICES INC.)**,a Delaware corporation with offices at 4600 East Shelby Drive, Suite 108, Memphis, TN 38118 ("**Manufacturer**"). Each of Atara and Manufacturer are referred to in this Fifth Amendment as a "**Party**" and together, the "**Parties**." All capitalized terms used, but not otherwise defined herein, shall have the same meaning ascribed to them in the Commercial Services Agreement (as defined below).

BACKGROUND

WHEREAS, the Parties have entered into that certain Commercial Manufacturing Services Agreement, effective as of January 1, 2020 (as previously amended by that certain First Amendment, dated as of September 1, 2021; by that certain Second Amendment, dated as of May 25, 2022; by that certain Third Amendment, dated as of August 1, 2022, and by that Fourth Amendment effective as of January 30, 2023, the "**Commercial**

Services Agreement"), pursuant to which Atara engaged Manufacturer to perform certain commercial manufacturing services in relation to Atara's products, as further described in individual work orders entered into thereunder;

WHEREAS, the Parties desire to amend the Commercial Services Agreement and certain Work Orders thereto as set forth in this Fifth Amendment; and

WHEREAS, Section 15.7 of the Commercial Services Agreement provides that the Commercial Services Agreement may only be modified by a writing signed by authorized representatives of each Party.

NOW, THEREFORE, the Parties desire, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, to amend the Commercial Services Agreement as set forth in this Fifth Amendment as of the Fifth Amendment Effective Date.

1. Section 14.1 of the Commercial Services Agreement is hereby deleted in its entirety and replaced as follows:

   "14.1 **Term.** This Agreement will take effect as of the Effective Date and, unless earlier terminated pursuant to this Article 14, will expire on the earlier of: (i) December 31, 2023; or (ii) Delivery of the final Remaining Batch and final PBMC Batch ordered during the Remaining Period in accordance with the Quality Agreement (the earlier of such dates, the "Final Date" and such period between February 1, 2023 and the Final Date, the "Remaining Period"). Notwithstanding the termination or expiration of this Agreement, the terms and conditions of this Agreement shall continue to apply to any active or in progress Work Orders (including Delivery of the final Remaining Batches and any PBMC Batches ordered during the Remaining Period) until each such Work Order has been completed, expired or otherwise terminated in accordance with the terms herein or therein."

2. The Commercial Services Agreement is hereby amended by deleting Section 8.9(a) in its entirety and replacing it as follows:

   "**8.9Amended Pricing and Work Orders.** Notwithstanding anything in this Agreement or in any Work Order to the contrary:

   (a)

   (i) as of September 27, 2023 (the "Fifth Amendment Effective Date"), (y) Exhibit A to that certain Third Amendment, dated as of July 1, 2022, (the "Third Amendment") is hereby replaced by Exhibit A (Suite Fees) to that certain Fifth

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Amendment, dated as of the Fifth Amendment Effective Date, (the "Fifth Amendment") to this Agreement and (z) Appendix C to this

Agreement, which had previously been replaced by Exhibit A to the Third Amendment, is hereby replaced by Exhibit A (Suite Fees) to the Fifth Amendment; and

(ii) as of July 1, 2022, Schedule 1 to Work Order 1 under this Agreement is hereby deleted in its entirety and replaced by Exhibit B to the Third Amendment."

2. Exhibit A to that certain Fourth Amendment to Commercial Manufacturing Services Agreement dated as of January 30, 2023 (the "Fourth Amendment") is hereby deleted in its entirety and replaced by Exhibit B to that certain Fifth Amendment."

3. The Commercial Services Agreement is hereby amended by deleting the last sentence of Section 8.9(b)(iii) in its entirety and replacing it as follows:

"The parties agree to negotiate in good faith a new commercial manufacturing agreement by [[***]], and if the parties are unable to finalize such new agreement prior to [[***]], the parties shall mutually agree upon an extension of the Remaining Period, which will include payment of applicable Suite Fees and new Batch commitments to ensure continuity of supply of Product until such new agreement is executed."

3. The Commercial Services Agreement is hereby amended by inserting as a new Section 3.6 as follows:

"3.6. **Stability Study Planning and Coordination**. Manufacturer Representative and Atara Representative, or their respective designees, shall discuss the performance of stability study Services at the weekly operational meeting, including updates on appropriate training, planning, materials, issues and open action items, which may be escalated to the appropriate governance forums as needed."

4. Exhibit A to the Fourth Amendment to Commercial Manufacturing Services Agreement entitled Updated Production Forecast Starts is hereby deleted in its entirety and replaced with Exhibit B attached to this Fifth Amendment.

5. This Fifth Amendment is governed by and interpreted in accordance with the laws of the State of New York, U.S.A., without reference to the principles of conflicts of laws. The United Nations Convention on Contracts for the International Sale of Goods shall not apply to the transactions contemplated by this Fifth Amendment. Except as specifically amended by this Fifth Amendment, the terms and conditions of the Commercial Services Agreement shall remain in full force and effect. This Fifth Amendment may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Except to the extent expressly provided herein, the Commercial Services Agreement, as amended by this Fifth Amendment, including all appendices, exhibits and schedules to each of the foregoing, together with all Work Orders executed by the Parties, constitute the entire agreement between the Parties relating to the subject

matter of the Commercial Services Agreement and supersede all previous oral and written communications, including all previous agreements, between the Parties.

[SIGNATURE PAGE TO FOLLOW]

IN WITNESS WHEREOF, the undersigned have executed this Fifth Amendment as of the Fifth Amendment Effective Date.

ATARA BIOTHERAPEUTICS, INC.	**CHARLES RIVER LABORATORIES, INC.**
By: /s/ Pascal Touchon	By: /s/ Kerstin Dolph
Print Name: Pascal Touchon	Print Name: Kerstin Dolph
Title: President & CEO	Title: CSVP Global Biologics Testing Solutions
Date: 9/29/2023	Date: 29-Sep-2023

EXHIBIT A

SUITE FEES

[[***]]

EXHIBIT B

UPDATED PRODUCTION FORECAST STARTS

[[***]]

EXHIBIT C

[[***]]

Exhibit 10.2

ATARA BIOTHERAPEUTICS, INC. RESTRICTED STOCK UNIT GRANT NOTICE (2014 EQUITY

INCENTIVE PLAN)

Atara Biotherapeutics, Inc. (the "***Company***"), pursuant to its 2014 Equity Incentive Plan (the "***Plan***"), hereby awards to Participant a Restricted Stock Unit Award for the number of shares of the Company's Common Stock set forth below (the "***Award***"). The Award is subject to all of the terms and conditions as set forth herein and in the Plan and the Restricted Stock Unit Award Agreement, both of which are attached hereto and incorporated herein in their entirety. Capitalized terms not otherwise defined herein will have the meanings set forth in the Plan or the Restricted Stock Unit Award Agreement. In the event of any conflict between the terms in the Award and the Plan, the terms of the Plan will control.

Participant:

Date of Grant:

Vesting Commencement Date:

Number of Units/Shares Subject to Award:

Vesting Schedule:	[ ]
Issuance Schedule:	Notwithstanding Section 6(a) of the attached Restricted Stock Unit Award Agreement, to the extent the Award vests as provided for above, the Company will deliver one share of Common Stock for each vested Restricted Stock Unit not previously settled at the Settlement Time. "***Settlement Time***" means promptly following the applicable vesting date, and, in any event, not later than March 15 of the calendar year following the calendar year in which such vesting occurs.
Tax Withholding:	***IMPORTANT INFORMATION REGARDING SELL-TO-COVER ELECTION***

To the greatest extent permitted under the Plan and applicable law, any withholding obligations for applicable Tax-Related Items (as defined in Section 10 of the Restricted Stock Unit Award Agreement) will be satisfied through the sale of a number of the shares of Common Stock subject to the Award as determined in accordance with Section 10 of the Restricted Stock Unit Award Agreement and the remittance of the cash proceeds of such sale to the Company (a "***Sell-to-Cover***"). Under the Restricted Stock Unit Award Agreement, the Company is authorized and directed by Participant to make payment from the cash proceeds of this sale directly to the appropriate taxing authorities in an amount equal to the withholding obligation for Tax-Related Items. Notwithstanding the foregoing, in the event Participant is eligible for accelerated vesting upon a termination of Participant's Continuous Service under the terms of any employment or severance agreement or plan in effect as of the Date of Grant or as otherwise determined by the Compensation Committee of the Board, then upon such termination of Continuous Service that occurs prior to the first Quarterly Vesting Date, the Tax-Related Items shall be satisfied by the Company withholding a sufficient amount of shares of Common Stock subject to the Award, as determined in accordance with Section 10 of the Restricted Stock unit Award Agreement and the

Company shall remit a payment to the appropriate taxing authorities in an amount equal to the withholding obligation for Tax-Related Items.

Participant represents and warrants that (i) Participant has carefully reviewed this Restricted Stock Unit Grant Notice and Section 10 of the Restricted Stock Unit Award Agreement and (ii) Participant is not subject to any legal, regulatory or contractual restriction that would prevent Agent from conducting sales, does not have, and will not attempt to exercise, authority, influence or control over any sales of Common Stock effected by the Agent pursuant to the Restricted Stock Unit Award Agreement.

Additional Terms/Acknowledgements: Participant acknowledges receipt of, and understands and agrees to, this Restricted Stock Unit Grant Notice, the Restricted Stock Unit Award Agreement and the Plan. Participant further

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acknowledges that as of the Date of Grant, this Restricted Stock Unit Grant Notice, the Restricted Stock Unit Award Agreement and the Plan set forth the entire understanding between Participant and the Company regarding this Award and supersede all prior oral and written agreements, promises and/or representations on that subject with the exception of (i) equity awards previously granted and delivered to Participant, (ii) any compensation recovery policy that is adopted by the Company or is otherwise required by applicable law and (iii) any written employment or severance arrangement that would provide for vesting acceleration of this award upon the terms and conditions set forth therein.

Participant may accept this Award electronically by means of reviewing and accepting the Grant Documents (as defined below) through the electronical brokerage account established for Company equity plans. By accepting the Award, Participant acknowledges having received and read the Restricted Stock Unit Grant Notice, the Restricted Stock Unit Award Agreement and the Plan (the "***Grant Documents***") and agrees to all of the terms and conditions set forth in these documents. Furthermore, by accepting the Award, Participant consents to receive such documents by electronic delivery and to participate in the Plan through an on-line or electronic system established and maintained by the Company or another third party designated by the Company.

ATARA BIOTHERAPEUTICS, INC. **PARTICIPANT:**

By:

By:

ATTACHMENTS: Restricted Stock Unit Award Agreement, 2014 Equity Incentive Plan

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ATTACHMENT I

ATARA BIOTHERAPEUTICS, INC. RESTRICTED STOCK UNIT AWARD AGREEMENT

(2014 EQUITY INCENTIVE PLAN)

Pursuant to the Restricted Stock Unit Grant Notice (the "***Grant Notice***") and this Restricted Stock Unit Award Agreement (the "***Agreement***") and in consideration of your services, Atara Biotherapeutics, Inc. (the "***Company***") has awarded you a Restricted Stock Unit Award (the "***Award***") under its 2014 Equity Incentive Plan (the "***Plan***"). The Award is granted to you effective as of the Date of Grant set forth in the Grant Notice for this Award. Defined terms not explicitly defined in this Agreement will have the same meanings given to them in the Plan. In the event of any conflict between the terms in this Agreement and the Plan, the terms of the Plan will control. The details of the Award, in addition to those set forth in the Grant Notice and the Plan, are as follows.

1.GRANT OF THE AWARD. The Award represents the right to be issued on a future date the number of shares of the Company's Common Stock as indicated in the Grant Notice upon the satisfaction of the terms set forth in this Agreement. Except as otherwise provided herein, you will not be required to make any payment to the Company with respect to your receipt of the Award, the vesting of the shares or the delivery of the underlying Common Stock.

2.VESTING. Subject to the limitations contained herein, the Award will vest, if at all, in accordance with the vesting schedule provided in the Grant Notice, provided that vesting will cease upon the termination of your Continuous Service. Upon such termination of your Continuous Service, the shares credited to the Account that were not vested on the date of such termination will be forfeited at no cost to the Company and you will have no further right, title or interest in or to such underlying shares of Common Stock.

3.NUMBER OF SHARES.

(a) The number of units/shares subject to the Award may be adjusted from time to time for Capitalization Adjustments, as provided in the Plan.

(b) Any shares, cash or other property that becomes subject to the Award pursuant to this Section 3 and Section 7, if any, will be subject, in a manner determined by the Board, to the same forfeiture restrictions, restrictions on transferability, and time and manner of delivery as applicable to the other shares covered by the Award.

(c) Notwithstanding the provisions of this Section 3, no fractional shares or rights for fractional shares of Common Stock will be created pursuant to this Section 3. The Board will, in its discretion, determine an equivalent benefit for any fractional shares or fractional shares that might be created by the adjustments referred to in this Section 3.

4.SECURITIES LAW AND OTHER COMPLIANCE. You may not be issued any shares under the Award unless either (a) the shares are registered under the Securities Act; or (b) the Company has determined that such issuance would be exempt from the registration requirements of the Securities Act. The Award also must comply with other applicable laws and regulations governing the Award, and you

will not receive such shares if the Company determines that such receipt would not be in material compliance with such laws and regulations.

5.TRANSFER RESTRICTIONS.

(a)General. Prior to the time that shares of Common Stock have been delivered to you, you may not transfer, pledge, sell or otherwise dispose of this Award or the shares issuable in respect of the Award, except as expressly provided in this Section 5. For example, you may not use shares that may be issued in respect of the Award as security for a loan. The restrictions on transfer set forth herein will lapse upon delivery to you of shares in respect of the vested portion of the Award.

(b)Death. The Award is transferable by will and by the laws of descent and distribution. In addition, upon receiving written permission from the Board or its duly authorized designee, you may, by delivering written notice to the Company, in a form provided by or otherwise satisfactory to the Company and any broker designated by the Company to effect transactions under the Plan, designate a third party who, in the event of your death, will thereafter be entitled to receive any distribution of Common Stock or other consideration to which you were entitled at the time of your death pursuant to this Agreement. In the absence of such a designation, your executor or administrator of your estate will be entitled to receive, on behalf of your estate, such Common Stock or other consideration.

(c)Certain Trusts. Upon receiving written permission from the Board or its duly authorized designee, you may transfer the Award to a trust if you are considered to be the sole beneficial owner (determined under Section 671 of the Code and applicable state law) while the Award is held in the trust, provided that you and the trustee enter into transfer and other agreements required by the Company.

(d)Domestic Relations Orders. Upon receiving written permission from the Board or its duly authorized designee, and provided that you and the designated transferee enter into transfer and other agreements required by the Company, you may transfer the Award or your right to receive the distribution of Common Stock or other consideration thereunder, pursuant to a domestic relations order that contains the information required by the Company to effectuate the transfer. You are encouraged to discuss the proposed terms of any division of this Award with the Company prior to finalizing the domestic relations order to help ensure the required information is contained within the domestic relations order.

6.DATE OF ISSUANCE.

(a) The Company will deliver to you a number of shares of the Company's Common Stock equal to the number of vested shares subject to the Award, including any additional shares received pursuant to Section 3 above that relate to those vested shares on the applicable vesting date(s). However, if a scheduled delivery date falls on a date that is not a business day, such delivery date will instead fall on the next following business day.

(b) Notwithstanding the foregoing, in the event that (i) you are subject to the Company's policy permitting certain individuals to sell shares only during certain "window" periods, in effect from time to time or you are otherwise prohibited from selling shares of the Company's Common Stock in the public market and any shares covered by the Award are scheduled to be delivered on a day (the "***Original Distribution Date***") that does not occur during an open "window period" applicable to you, as determined by the Company in accordance with such policy, or does not occur on a date when you are otherwise permitted to sell shares of the Company's Common Stock on the open market, and (ii) the

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Company elects not to satisfy its obligations for Tax-Related Items (as defined in Section 10) by withholding shares from your distribution, then such shares will not be delivered on such Original Distribution Date and will instead be delivered on the first business day of the next occurring open "window period" applicable to you pursuant to such policy (regardless of whether you are still providing Continuous Service at such time) or the next business day when you are not prohibited from selling shares of the Company's Common Stock in the open market, but in no event later than the fifteenth (15th) day of the third calendar month of the calendar year following the calendar year in which the shares of Common Stock originally became vested. The form of such delivery (*e.g.*, a stock certificate or electronic entry evidencing such shares) will be determined by the Company. In all cases, the delivery of shares under this Award is intended to comply with Treasury Regulation Section 1.409A-1(b)(4) and will be construed and administered in such a manner.

7. DIVIDENDS. You will receive no benefit or adjustment to your Restricted Stock Units with respect to any cash dividend, stock dividend or other distribution except as provided in the Plan with respect to a Capitalization Adjustment.

8. RESTRICTIVE LEGENDS. The shares issued under the Award will be endorsed with appropriate legends as determined by the Company.

9. AWARD NOT AN EMPLOYMENT OR SERVICE CONTRACT.

(a) Your Continuous Service with the Company or an Affiliate is not for any specified term and may be terminated by you or by the Company or an Affiliate at any time, for any reason, with or without cause and with or without notice. Nothing in this

Agreement (including, but not limited to, the vesting of the Award pursuant to Section 2 or the issuance of the shares subject to the Award), the Plan or any covenant of good faith and fair dealing that may be found implicit in this Agreement or the Plan will: (i) confer upon you any right to continue in the employ of, or affiliation with, the Company or an Affiliate; (ii) constitute any promise or commitment by the Company or an Affiliate regarding the fact or nature of future positions, future work assignments, future compensation or any other term or condition of employment or affiliation; (iii) confer any right or benefit under this Agreement or the Plan unless such right or benefit has specifically accrued under the terms of this Agreement or Plan; or (iv) deprive the Company or an Affiliate of the right to terminate you at will and without regard to any future vesting opportunity that you may have.

(b) By accepting this Award, you acknowledge and agree that the right to continue vesting in the Award pursuant to Section 2 and the schedule set forth in the Grant Notice is earned only by continuing as an employee, director or consultant at the will of the Company or an Affiliate (not through the act of being hired, being granted this Award or any other award or benefit) and that the Company has the right to reorganize, sell, spin-out or otherwise restructure one or more of its businesses or Affiliates at any time or from time to time, as it deems appropriate (a "***reorganization***"). You further acknowledge and agree that such a reorganization could result in the termination of your Continuous Service, or the termination of Affiliate status of your employer and the loss of benefits available to you under this Agreement, including but not limited to, the termination of the right to continue vesting in the Award. You further acknowledge and agree that this Agreement, the Plan, the transactions contemplated hereunder and the vesting schedule set forth in the Grant Notice or any covenant of good faith and fair dealing that may be found implicit in any of them do not constitute an express or implied promise of continued engagement as an employee or consultant with the Company or an Affiliate for the term of this Agreement, for any period, or at all, and will not interfere in any way with your right or the right of the

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Company or an Affiliate to terminate your Continuous Service at any time, with or without cause and with or without notice.

10. RESPONSIBILITY FOR TAXES.

(a) You acknowledge that, regardless of any action taken by the Company, the ultimate liability for all income tax, social insurance, payroll tax, fringe benefits tax, payment on account or other tax-related items related to your participation in the Plan and legally applicable to you or deemed by the Company in its discretion to be an

appropriate charge to you even if legally applicable to the Company ("***Tax-Related Items***") is and remains your responsibility and may exceed the amount actually withheld by the Company.

(b) Except as otherwise required pursuant to the Grant Notice, the Company (or its agent) shall satisfy its withholding obligations with regard to all Tax-Related Items, if any, pursuant to a "same day sale" commitment with a broker-dealer that is a member of the Financial Industry Regulatory Authority (a "***FINRA Dealer***") whereby you have agreed to sell a portion of the shares of Common Stock to be delivered in connection with your Award to satisfy any withholding obligations for Tax-Related Items and whereby the FINRA Dealer has committed to forward the proceeds necessary to satisfy any withholding obligations for Tax-Related Items directly to the Company. If, for any reason, such "same day sale" commitment pursuant to Section 10 does not result in sufficient proceeds to satisfy any withholding obligations for Tax-Related Items, you authorize the Company, or its agent, at their discretion, to satisfy their withholding obligations with regard to all Tax-Related Items by one or a combination of the following: (i) withholding from your wages or other cash compensation paid to you by the Company; (ii) withholding a number of shares of Common Stock having a fair market value determined by the Company as of the date of the relevant taxable or tax withholding event, as applicable, that are otherwise deliverable to you upon settlement; provided, however, that to the extent necessary to qualify for an exemption from application of Section 16(b) of the Exchange Act, if applicable, such share withholding procedure be subject to the express prior approval of the Compensation Committee; or (iii) causing you to tender a cash payment (which may be in the form of a check, electronic wire transfer or other method permitted by the Company).

(c) The Company shall withhold or account for Tax-Related Items by considering applicable minimum statutory withholding amounts.

(d) You hereby acknowledge and agree to the following:

(i) I hereby appoint **[insert name of third party stock plan administrator]** (or any successor agent determined by the Company) as my agent (the "***Agent***"), and authorize the Agent to:

(1) Sell on the open market at the then-prevailing market price(s), on my behalf, as soon as practicable on or after each date on which shares of Common Stock underlying my Restricted Stock Units vest and are issued, the number (rounded down to the nearest whole number) of the shares of Common Stock to be delivered to me in connection with the

vesting of those shares sufficient to generate proceeds to cover the satisfaction of the Tax-Related Items arising from the vesting of the Award and the related issuance of shares of Common Stock to me (and, for the avoidance of doubt, I acknowledge that I am responsible for all applicable fees and commissions due to, or required to be collected by, the Agent with respect thereto and such fees and commissions will not be deducted from the proceeds);

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(2) Remit directly to the Company the proceeds necessary to satisfy the Tax-Related Items; and

(3) Remit any remaining funds to me.

(ii) I hereby authorize the Company and the Agent to cooperate and communicate with one another to determine the number of shares of Common Stock underlying my Restricted Stock Units that must be sold pursuant to this Section 10(d).

(iii) I acknowledge that the Agent is under no obligation to arrange for the sale of Common Stock at any particular price under this Section 10(d) and that the Agent may effect sales as provided in this Section 10(d) in one or more sales and that the average price for executions resulting from bunched orders may be assigned to my account. I further acknowledge that I will be responsible for all brokerage fees and other costs of sale associated with this Section 10(d) and such amounts shall not be deducted from the sales proceeds, and I agree to indemnify and hold the Company harmless from any losses, costs, damages, or expenses relating to any such sales. In addition, I acknowledge that it may not be possible to sell shares of Common Stock as provided by in this Section 10(d) due to (1) a legal or contractual restriction applicable to me or the Agent, (2) a market disruption, (3) rules governing order execution priority on the national exchange where the Common Stock may be traded or (4) applicable law restricting such sale. In the event of the Agent's inability to sell shares of Common Stock, I will continue to be responsible for the

timely payment to the Company of all Tax-Related Items that are required by applicable laws and regulations to be withheld.

(iv) I acknowledge that regardless of any other term or condition of this Section 10(d), the Agent will not be liable to me for (1) special, indirect, punitive, exemplary, or consequential damages, or incidental losses or damages of any kind, or (2) any failure to perform or for any delay in performance that results from a cause or circumstance that is beyond its reasonable control.

(v) I hereby agree to execute and deliver to the Agent any other agreements or documents as the Agent reasonably deems necessary or appropriate to carry out the purposes and intent of this Section 10(d). The Agent is a third-party beneficiary of this Section 10(d).

(vi) This Section 10(d) shall terminate not later than the date on which all Tax-Related Items arising in connection with the Award have been satisfied.

(vii) I hereby authorize the Company to appoint a successor Agent should the above-named entity in (i) above (or its successor) resign as Agent or be replaced by the Company.

(e) You agree to pay to the Company any amount of Tax-Related Items that the Company may be required to withhold or account for as a result of your participation in the Plan that cannot be satisfied by the means previously described. You acknowledge and agree that the Company may refuse to issue or deliver the shares of Common Stock, or the proceeds of the sale of shares of Common Stock, if you

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fail to comply with your obligations in connection with the Tax-Related Items.

(f) If required pursuant to the Grant Notice in connection with a termination of your Continuous Service, the Company (or its agent) shall satisfy its withholding obligations with regard to all Tax-Related Items, if any, by withholding shares of Common Stock from the shares of Common Stock issued or otherwise issuable to you in connection with the Award with a Fair Market Value (measured as of the date shares of Common Stock are issued pursuant to Section 6) equal to the amount of such Tax-Related Items. The Company (or its agent) shall withhold or account for Tax-Related Items by considering applicable minimum statutory withholding rates. For tax purposes, you are

deemed to have been issued the full number of shares of Common Stock subject to the vested portion of the Award, notwithstanding that a number of the shares of Common Stock are held back solely for the purpose of paying the Tax-Related Items.

(g) Finally, you agree to pay to the Company any amount of Tax-Related Items that the Company may be required to withhold or account for as a result of your participation in the Plan that cannot be satisfied by the means previously described. The Company may refuse to issue or deliver the shares if you fail to comply with your obligations in connection with the Tax-Related Items.

11.No Obligation to Minimize Taxes. You acknowledge that the Company is not making representations or undertakings regarding the treatment of any Tax-Related Items in connection with any aspect of the Award, including, but not limited to, the grant, vesting or settlement of the Award, the subsequent sale of shares of Common Stock acquired pursuant to such settlement and the receipt of any dividends and/or any dividend equivalent payments. Further, you acknowledge that the Company does not have any duty or obligation to minimize your liability for Tax-Related Items arising from the Award and will not be liable to you for any Tax-Related Items arising in connection with the Award.

12.No Advice Regarding Grant. The Company is not providing any tax, legal or financial advice, nor is the Company making any recommendations regarding your participation in the Plan, or your acquisition or sale of the underlying shares of Common Stock. You are hereby advised to consult with your own personal tax, financial and/or legal advisors regarding the Tax-Related Items arising in connection with the Award and by accepting the Award, you have agreed that you have done so or knowingly and voluntarily declined to do so.

13.Unsecured Obligation. The Award is unfunded, and as a holder of a vested Award, you will be considered an unsecured creditor of the Company with respect to the Company's obligation, if any, to issue shares pursuant to this Agreement. You will not have voting or any other rights as a stockholder of the Company with respect to the shares to be issued pursuant to this Agreement until such shares are issued to you pursuant to Section 6 of this Agreement. Upon such issuance, you will obtain

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full voting and other rights as a stockholder of the Company. Nothing contained in this Agreement, and no action taken pursuant to its provisions, will create or be construed to create a trust of any kind or a fiduciary relationship between you and the Company or any other person.

14.Other Documents. You hereby acknowledge receipt or the right to receive a document providing the information required by Rule 428(b)(1) promulgated under the Securities Act, which includes the Plan prospectus. In addition, you acknowledge receipt of

the Company's policy permitting certain individuals to sell shares only during certain "window" periods and the Company's insider trading policy, in effect from time to time.

15.NOTICES. Any notices provided for in the Grant Notice, this Agreement or the Plan will be given in writing and will be deemed effectively given upon receipt or, in the case of notices delivered by the Company to you, five (5) days after deposit in the United States mail, postage prepaid, addressed to you at the last address you provided to the Company. Notwithstanding the foregoing, the Company may, in its sole discretion, decide to deliver any documents related to participation in the Plan and this Award by electronic means or to request your consent to participate in the Plan by electronic means. You hereby consent to receive such documents by electronic delivery and, if requested, to agree to participate in the Plan through an on-line or electronic system established and maintained by the Company or another third party designated by the Company.

16.MISCELLANEOUS.

(a) The rights and obligations of the Company under the Award will be transferable to any one or more persons or entities, and all covenants and agreements hereunder will inure to the benefit of, and be enforceable by the Company's successors and assigns. Your rights and obligations under the Award may only be assigned with the prior written consent of the Company.

(b) You agree upon request to execute any further documents or instruments necessary or desirable in the sole determination of the Company to carry out the purposes or intent of the Award.

(c) You acknowledge and agree that you have reviewed the documents provided to you in relation to the Award in their entirety, have had an opportunity to obtain the advice of counsel prior to executing and accepting the Award, and fully understand all provisions of such documents.

(d) This Agreement will be subject to all applicable laws, rules, and regulations, and to such approvals by any governmental agencies or national securities exchanges as may be required.

(e) All obligations of the Company under the Plan and this Agreement will be binding on any successor to the Company, whether the existence of such successor is the result of a direct or indirect purchase, merger, consolidation, or otherwise, of all or substantially all of the business and/or assets of the Company.

17.GOVERNING PLAN DOCUMENT. The Award is subject to all the provisions of the Plan, the provisions of which are hereby made a part of the Award, and is further subject to all interpretations, amendments, rules and regulations which may from time to time be promulgated and adopted pursuant to the Plan. Except as expressly provided herein, in the event of any conflict between the provisions of the Award and those of the Plan, the provisions of the Plan will control.

18. SEVERABILITY. If all or any part of this Agreement or the Plan is declared by any court or governmental authority to be unlawful or invalid, such unlawfulness or invalidity will not invalidate any portion of this Agreement or the Plan not declared to be unlawful or invalid. Any Section of this Agreement (or part of such a Section) so declared to be unlawful or invalid will, if possible, be construed in a manner which will give effect to the terms of such Section or part of a Section to the fullest extent possible while remaining lawful and valid.

19. EFFECT ON OTHER EMPLOYEE BENEFIT PLANS. The value of the Award subject to this Agreement will not be included as compensation, earnings, salaries, or other similar terms used when calculating the Employee's benefits under any employee benefit plan sponsored by the Company or any Affiliate, except as such plan otherwise expressly provides. The Company expressly reserves its rights to amend, modify, or terminate any of the Company's or any Affiliate's employee benefit plans.

20. AMENDMENT. This Agreement may not be modified, amended or terminated except by an instrument in writing, signed by you and by a duly authorized representative of the Company. Notwithstanding the foregoing, this Agreement may be amended solely by the Board by a writing which specifically states that it is amending this Agreement, so long as a copy of such amendment is delivered to you, and provided that, except as otherwise expressly provided in the Plan, no such amendment adversely affecting your rights hereunder may be made without your written consent. Without limiting the foregoing, the Board reserves the right to change, by written notice to you, the provisions of this Agreement in any way it may deem necessary or advisable to carry out the purpose of the grant as a result of any change in applicable laws or regulations or any future law, regulation, ruling, or judicial decision, provided that any such change will be applicable only to rights relating to that portion of the Award which is then subject to restrictions as provided herein.

21. COMPLIANCE WITH SECTION 409A OF THE CODE. This Award is intended to comply with the "short-term deferral" rule set forth in Treasury Regulation Section 1.409A-1(b)(4). Notwithstanding the foregoing, if it is determined that the Award fails to satisfy the requirements of the short-term deferral rule and is otherwise deferred compensation subject to Section 409A, and if you are a "Specified Employee" (within the meaning set forth Section 409A(a)(2)(B)(i) of the Code) as of the date of your separation from service (within the meaning of Treasury Regulation Section 1.409A-1(h)), then the issuance of any shares that would otherwise be made upon the date of the separation from service or within the first six months thereafter will not be made on the originally scheduled date(s) and will instead be issued in a lump sum on the date that is six months and one day after the date of the separation from service, with the balance of the shares issued thereafter in accordance with the original vesting and issuance schedule set forth above, but if and only if such delay in the issuance of the shares is necessary to avoid the imposition of taxation on you in respect of the shares under Section 409A of the Code. Each installment of shares that vests is intended to constitute a "separate payment" for purposes of Treasury Regulation Section 1.409A-2(b)(2).

* * *

This Agreement will be deemed to be accepted and agreed to by you upon the acceptance by you of the Restricted Stock Unit Grant Notice to which it is attached.

Exhibit 31.1

CERTIFICATION OF THE CHIEF EXECUTIVE OFFICER

PURSUANT TO

SECURITIES EXCHANGE ACT RULES 13A-14(A) AND 15D-14(A)

I, Pascal Touchon, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Atara Biotherapeutics, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a materia fact necessary to make the statements made, in light of the circumstances under which such statements were made, no misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accountir principles;
   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control ove financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 8, 2023 November 1, 2023

/s/ Pascal Touchon

Pascal Touchon

Chief Executive Officer

(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION OF THE PRINCIPAL FINANCIAL AND ACCOUNTING OFFICER

PURSUANT TO

SECURITIES EXCHANGE ACT RULES 13A-14(A) AND 15D-14(A)

I, Eric Hyllengren, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Atara Biotherapeutics, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a materia fact necessary to make the statements made, in light of the circumstances under which such statements were made, no misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accountir principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during

the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 8, 2023 November 1, 2023

/s/ Eric Hyllengren

Eric Hyllengren

Chief Financial Officer

(Principal Financial and Accounting Officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and in connection with the Quarterly Report of Atara Biotherapeutics, Inc. (the "Company") on Form 10-Q for the quarter ended June 30, 2023 September 30, 2023, as filed with the Securities and Exchange Commission (the "Report"), Pascal Touchon, Chief Executive Officer of the Company, and Eric Hyllengren, Chief Financial Officer of the Company, respectively, do each hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 8, 2023 November 1, 2023

/s/ Pascal Touchon

Pascal Touchon

Chief Executive Officer
(Principal Executive Officer)

/s/ Eric Hyllengren

Eric Hyllengren
Chief Financial Officer
(Principal Financial and Accounting Officer)

A signed original of this written statement required by Section 906, or other document authenticating, acknowledging, or otherwise adopting the signature that appears in typed form within the electronic version of this written statement required by Section 906, has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

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