UNITED STATES SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, DC 20549

FORM 10-Q

M	ark	Oi	1e)

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

For the quarterly period	ended September 30, 2021
C	OR CONTRACTOR OF THE PROPERTY
☐ TRANSITION REPORT PURSUANT TO SECTION OF 1934	13 OR 15(d) OF THE SECURITIES EXCHANGE ACT
For the transition period from	to
Commission File !	Number: 001-38869
	HARMA INC. as Specified in its Charter)
	au opecineu in no onarter)
Delaware	81-5395687

(State or other jurisdiction of incorporation or organization)

(I.R.S. Employer **Identification No.)**

350 Fifth Avenue, 72nd Floor, Suite 7240 New York, New York (Address of principal executive offices)

10118 (Zip Code)

Registrant's telephone number, including area code: +43 1 890 63 60 Securities registered pursuant to Section 12(b) of the Act:

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	HOOK	The Nasdaq Global Select Market

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. $\ ^{\circ}$ Yes $\ \boxtimes$ No $\ \Box$

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 \boxtimes No \square

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting

company, and emerging gro	will company in Kule 120-2 of the Exchange Act.		
Large accelerated filer		Accelerated filer	
Non-accelerated filer	\boxtimes	Small reporting company	\times
Emerging growth Company	\boxtimes		
0 00	ny, indicate by check mark if the registrant has elected not to use th vised financial accounting standards provided pursuant to Section 1	1	
Indicate by check mark wheth	ner the registrant is a shell company (as defined in Rule 12b-2 of the	Act). Yes □ No ⊠	

As of November 2, 2021, the registrant had 26,139,143 shares of common stock and 3,819,732 shares of Class A common stock outstanding, each \$0.0001 par value per share.

FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q contains forward-looking statements which are made pursuant to the safe harbor provisions of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). These statements may be identified by such forward-looking terminology as "may," "should," "expects," "intends," "plans," "anticipates," "believes," "estimates," "predicts," "potential," "continue" or the negative of these terms or other comparable terminology. Our forward-looking statements are based on a series of expectations, assumptions, estimates and projections about our company, are not guarantees of future results or performance and involve substantial risks and uncertainty. We may not actually achieve the plans, intentions or expectations disclosed in these forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in these forward-looking statements. Our business and our forward-looking statements involve substantial known and unknown risks and uncertainties, including the risks and uncertainties inherent in our statements regarding:

- the success, cost and timing of our product development activities and clinical trials;
- the timing, scope or likelihood of regulatory filings and approvals, including timing of Investigational New Drug
 Application and Biological Licensing Application filings for our current and future product candidates, and final
 U.S. Food and Drug Administration, European Medicines Agency or other foreign regulatory authority approval
 of our current and future product candidates;
- our ability to develop and advance our current product candidates and programs into, and successfully complete, clinical studies;
- our manufacturing, commercialization and marketing capabilities and strategy;
- the potential benefits of and our ability to maintain our collaboration with Gilead Sciences, Inc., and establish or maintain future collaborations or strategic relationships or obtain additional funding;
- the rate and degree of market acceptance and clinical utility of our current and future product candidates;
- our intellectual property position, including the scope of protection we are able to establish and maintain for intellectual property rights covering our non-replicating and replicating technologies and the product candidates based on these technologies, the validity of intellectual property rights held by third parties, and our ability not to infringe, misappropriate or otherwise violate any third-party intellectual property rights;
- future agreements with third parties in connection with the commercialization of our product candidates and any other approved product;
- regulatory developments in the United States and foreign countries;
- the effects of the ongoing coronavirus pandemic on business and operations;
- competitive companies, technologies and our industry and the success of competing therapies that are or may become available;
- our ability to attract and retain key scientific or management personnel;
- our ability to obtain funding for our operations, including funding necessary to complete further development and commercialization of our product candidates;
- the accuracy of our estimates of our annual total addressable market, future revenue, expenses, capital
 requirements and needs for additional financing;
- our expectations about market trends; and

 our expectations regarding the period during which we qualify as an emerging growth company under the Jumpstart Our Business Startups Act of 2012, as amended.

All of our forward-looking statements are as of the date of this Quarterly Report on Form 10-Q only. In each case, actual results may differ materially from such forward-looking information. We can give no assurance that such expectations or forward-looking statements will prove to be correct. An occurrence of or any material adverse change in one or more of the risk factors or risks and uncertainties referred to in this Quarterly Report on Form 10-Q or included in our other public disclosures or our other periodic reports or other documents or filings filed with or furnished to the Securities and Exchange Commission could materially and adversely affect our business, prospects, financial condition and results of operations. Except as required by law, we do not undertake or plan to update or revise any such forward-looking statements to reflect actual results, changes in plans, assumptions, estimates or projections or other circumstances affecting such forward-looking statements occurring after the date of this Quarterly Report on Form 10-Q, even if such results, changes or circumstances make it clear that any forward-looking information will not be realized. Any public statements or disclosures by us following this Quarterly Report on Form 10-Q that modify or impact any of the forward-looking statements contained in this Quarterly Report on Form 10-Q will be deemed to modify or supersede such statements in this Quarterly Report on Form 10-Q.

Investors and others should note that we announce material financial information to our investors using our investor relations website (https://ir.hookipapharma.com/), SEC filings, press releases, public conference calls and webcasts. We use these channels, as well as social media, to communicate with our members and the public about our company, our services and other issues. It is possible that the information we post on social media could be deemed to be material information. Therefore, we encourage investors, the media, and others interested in our company to review the information we post on the U.S. social media channels listed on our investor relations website.

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PART I—FINANCIAL INFORMATION

Item 1. Financial Statements.

HOOKIPA PHARMA INC.

CONDENSED CONSOLIDATED BALANCE SHEETS (UNAUDITED)

(In thousands, except share amounts)

		tember 30, 2021	December 31, 2020		
Assets					
Current assets:					
Cash and cash equivalents	\$	82,269	\$	142,743	
Accounts receivable		2,520		5,542	
Receivable research incentives		17,879		15,115	
Prepaid expenses and other current assets		15,909		8,104	
Total current assets		118,577		171,504	
Non-current assets:					
Restricted cash		428		434	
Property and equipment, net		15,350		6,219	
Operating lease right of use assets		4,665		6,452	
Finance lease right of use assets		920		1,298	
Other non-current assets		2,232		1,910	
Total non-current assets	_	23,595		16,313	
	_				
Total assets	\$	142,172	\$	187,817	
Total assets	Ψ	142,172	Ψ	107,017	
711 May 10, 11 11 17 15					
Liabilities and Stockholders' Equity					
Current liabilities	¢.	2.725	Ф		
Loans payable, current	\$	2,735	\$		
Accounts payable		10,100		8,009	
Deferred revenues		2,372		3,750	
Operating lease liabilities, current		1,924		1,998	
Accrued expenses and other current liabilities		9,507		7,386	
Total current liabilities		26,638		21,143	
Non-current liabilities					
Loans payable, non-current		2,174		4,537	
Operating lease liabilities, non-current		2,264		3,819	
Deferred revenues, non-current		29		784	
Other non-current liabilities		2,981		1,411	
Total non-current liabilities		7,448		10,551	
Total liabilities	_	34,086		31,694	
	_	0 1,000		02,00	
Commitments and contingencies (Note 12)					
Stockholders' equity:					
Preferred stock, \$0.0001 par value; 10,000,000 shares authorized at September 30, 2021 and					
December 31, 2020, respectively; Series A convertible preferred stock, 2,978 shares designated, 2,978 shares					
issued and outstanding at September 30, 2021 and December 31, 2020, respectively		0		0	
Common stock, \$0.0001 par value; 100,000,000 shares authorized at September 30, 2021 and					
December 31, 2020, respectively; 26,084,065 shares and 25,948,712 shares issued and outstanding at					
September 30, 2021 and December 31, 2020, respectively		3		3	
Class A common stock, \$0.0001 par value; 3,900,000 shares authorized at September 30, 2021 and					
December 31, 2020, respectively; 3,819,732 shares issued and outstanding at September 30, 2021 and					
December 31, 2020, respectively		0		0	
Additional paid-in capital		315,394		309,288	
Accumulated other comprehensive loss		(5,779)		(6,067	
Accumulated deficit		(201,532)		(147,101	
Total stockholders' equity	_	108,086	_	156,123	
Total Stochholacis Equity					
Total liabilities and stockholders' equity	\$	142,172	\$	187,817	

 $The \ accompanying \ notes \ are \ an \ integral \ part \ of \ these \ unaudited \ condensed \ consolidated \ financial \ statements.$

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS (UNAUDITED)

(In thousands, except share and per share amounts)

	Thr	Three months ended September 30, 2021 2020				Nine months ended September 30, 2021 2020			
Revenue from collaboration and licensing	\$	3,874	\$	4,040	\$	14,553	\$	14,421	
Operating expenses:									
Research and development		(20,698)		(16,009)		(60,434)		(39,099)	
General and administrative		(4,342)		(4,437)		(13,746)		(13,413)	
Total operating expenses		(25,040)		(20,446)		(74,180)		(52,512)	
Loss from operations		(21,166)		(16,406)		(59,627)		(38,091)	
Other income (expense):						,			
Grant income	\$	2,487	\$	1,997	\$	7,196	\$	5,064	
Interest income		7		20		21		391	
Interest expense		(234)		(194)		(671)		(587)	
Other income and expenses, net		(1,133)		994		(1,348)		1,615	
Total other income, net		1,127		2,817		5,198		6,483	
Net loss before tax		(20,039)		(13,589)		(54,429)		(31,608)	
Income tax expense		(1)	_	(0)		(1)		(0)	
Net loss		(20,040)		(13,589)		(54,430)		(31,608)	
Other comprehensive loss:									
Foreign currency translation gain (loss), net of tax		471		(309)		288		(535)	
Comprehensive loss	\$	(19,569)	\$	(13,898)	\$	(54,142)	\$	(32,143)	
Net loss per share — basic and diluted	\$	(0.61)	\$	(0.53)	\$	(1.66)	\$	(1.23)	

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

CONDENSED CONSOLIDATED STATEMENTS OF CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY (UNAUDITED)

(In thousands, except share amounts)

		ertible ed Stock Amount	Commo		on Stock Class A Co	ommon Stock	Additional Paid-In Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total Stockholders' Equity
Balances as of December 31, 2020	2,978	\$ 0	25,948,712	\$ 3	3,819,732	\$ 0	\$ 309,288	\$ (6,067)	\$ (147,101)	\$ 156,123
Issuance of common stock upon	2,970	J U	23,340,712	J	3,013,732	5 0	\$ 303,200	\$ (0,007)	\$ (147,101)	Φ 130,123
exercise of stock options	_	_	33,806	0	_	_	125	_	_	125
Vesting of restricted stock			12,140	0			(0)			125
Foreign currency translation			12,140	· ·			(0)			
adjustment, net of tax	_	_	_	_	_	_	_	(476)	_	(476)
Stock-based compensation expense	_	_	_	_	_	_	1,521		_	1,521
Net loss	_	_	_	_	_	_	´-	_	(17,238)	(17,238)
Balances as of March 31, 2021	2,978	\$ 0	25,994,658	\$ 3	3,819,732	\$ 0	\$ 310,934	\$ (6,543)	\$ (164,339)	\$ 140,055
Issuance of common stock upon										
exercise of stock options	_	_	45,681	0	_	_	112	_	_	112
Vesting of restricted stock	_	_	11,507	0	_	_	(0)	_	_	_
Foreign currency translation										
adjustment, net of tax	_	_	_	_	_	_	_	293	_	293
Stock-based compensation expense	_	_	_	_	_	_	2,627	_	_	2,627
Net loss									(17,153)	(17,153)
Balances as of June 30, 2021	2,978	\$ 0	26,051,846	\$ 3	3,819,732	\$ 0	\$ 313,673	\$ (6,250)	\$ (181,492)	\$ 125,934
Issuance of common stock upon										
exercise of stock options	_	_	21,912	0	_	_	2	_	_	2
Vesting of restricted stock	_	_	10,307	0	_	_	(0)	_	_	_
Foreign currency translation										
adjustment, net of tax	_		_			_	_	471		471
Stock-based compensation expense	_	_	_	_	_	_	1,719	_	_	1,719
Net loss									(20,040)	(20,040)
Balances as of September 30, 2021	2,978	\$ <u> </u>	26,084,065	\$ 3	3,819,732	\$ 0	\$ 315,394	\$ (5,779)	\$ (201,532)	\$ 108,086

					on Stock		Additional	Accumulated Other		Total
		ed Stock	Commo			mmon Stock	Paid-In	Comprehensive	Accumulated	Stockholders'
	Shares	Amount	Shares	Amount	Shares	Amount	Capital	Income (Loss)	Deficit	Equity
Balances as of December 31, 2019	_	_	21,746,392	\$ 3	3,819,732	\$ 0	\$ 225,568	\$ (4,653)	\$ (103,019)	\$ 117,899
Issuance of common stock upon										
exercise of stock options	_	_	78,598	0	_	_	8	_	_	8
Foreign currency translation										
adjustment, net of tax	_	_	_	_	_	_	_	(93)	_	(93)
Stock-based compensation expense	_	_	_	_	_	_	2,094	_		2,094
Net loss									(10,926)	(10,926)
Balances as of March 31, 2020		<u>\$</u>	21,824,990	\$ 3	3,819,732	\$ 0	\$ 227,670	\$ (4,746)	\$ (113,945)	\$ 108,982
Issuance of common stock upon										
exercise of stock options	_	_	9,702	0	_	_	7	_	_	7
Foreign currency translation										
adjustment, net of tax	_	_	_	_	_	_	_	(133)	_	(133)
Stock-based compensation expense	_	_	_	_	_	_	2,151	_	_	2,151
Net loss									(7,092)	(7,092)
Balances as of June 30, 2020		\$ —	21,834,692	\$ 3	3,819,732	\$ 0	\$ 229,828	\$ (4,879)	\$ (121,037)	\$ 103,915
Issuance of common stock upon										
exercise of stock options	_	_	7,044	0	_	_	16	_	_	16
Foreign currency translation										
adjustment, net of tax	_	_	_	_	_	_	_	(309)	_	(309)
Stock-based compensation expense	_	_	_	_	_	_	2,147	`—	_	2,147
Net loss									(13,589)	(13,589)
Balances as of September 30, 2020		\$ <u> </u>	21,841,736	\$ 3	3,819,732	\$ 0	\$ 231,991	\$ (5,188)	\$ (134,626)	\$ 92,180

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS (UNAUDITED)

(In thousands)

	Nine months ended Se 2021					
		2021		2020		
Operating activities:	ď	(F.4.420)	ф	(21 (00)		
Net loss	\$	(54,430)	Э	(31,608)		
Adjustments to reconcile net loss to net cash used in operating activities:		F 0C7		C 202		
Stock-based compensation expense		5,867		6,392		
Depreciation and amortization expense Other non-cash items		3,412 34		3,037		
		34		(27)		
Changes in operating assets and liabilities:		2.754		(1.2.42)		
Accounts receivable		2,754		(1,243)		
Prepaid expenses and other current assets		(12,058)		(6,612)		
Other non-current assets		(437)		(89)		
Accounts payable		528		1,961		
Deferred revenues		(1,952)		259		
Operating lease liabilities		(1,392)		(1,387)		
Accrued expenses and other liabilities		5,298		1,385		
Other non-current liabilities		(397)		(106)		
Net cash used in operating activities		(52,773)		(28,038)		
Investing activities						
Investing activities:		(7.440)		(1.000)		
Purchases of property and equipment		(7,440)		(1,866)		
Net cash used in investing activities		(7,440)		(1,866)		
Financing activities:						
Payments related to finance leases		(64)		(89)		
Proceeds from issuance of common stock, net of issuance costs		239		31		
Payments for deferred offering costs		_		(307)		
Repayments of borrowings		_		(1,291)		
Net cash provided by (used in) financing activities		175		(1,656)		
Net decrease in cash, cash equivalents and restricted cash		(60,038)		(31,560)		
Cash, cash equivalents and restricted cash at beginning of period		143,177		113,575		
Effect of exchange rate changes on cash, cash equivalents and restricted cash		(442)		244		
Cash, cash equivalents and restricted cash at end of period	\$	82,697	\$	82,259		
Supplemental disclosure of cash flow information:						
Cash paid for interest	\$	(24)	\$	(49)		
Cash paid for income taxes	\$	(1)	\$	(0)		
Cash paid for income taxes	Φ	(1)	Ψ	(0)		
Supplemental disclosure of non-cash investing activities:						
Property and equipment additions in accounts payable and accrued expenses	\$	(3,950)	\$	(152)		

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)

1. Nature of the business and organization

HOOKIPA Pharma Inc. ("HOOKIPA" or the "Company") is a clinical-stage biopharmaceutical company developing a new class of immunotherapeutics based on its proprietary arenavirus platform that is designed to reprogram the body's immune system.

The Company was incorporated under the name of Hookipa Biotech, Inc. under the laws of the State of Delaware in February 2017 as a fully-owned subsidiary of Hookipa Biotech AG. In June 2018, the Company changed its name from Hookipa Biotech, Inc. to HOOKIPA Pharma Inc. and in order to effectuate the change of the jurisdiction of incorporation, the Company acquired all of the shares of Hookipa Biotech AG, now Hookipa Biotech GmbH. HOOKIPA is headquartered in New York, with European research and preclinical development operations headquartered in Vienna, Austria. In April 2019, the Company closed its initial public offering ("IPO") and its common stock started trading on the Nasdaq Global Select Market under the ticker symbol "HOOK".

The Company is subject to risks and uncertainties common to early-stage companies in the biotechnology industry, including, but not limited to, development by competitors of new technological innovations, dependence on key personnel, protection of proprietary technology, compliance with government regulations, the ability to establish clinical-and commercial-scale manufacturing processes and the ability to secure additional capital to fund operations. Product candidates currently under development will require significant additional research and development efforts, including extensive preclinical and clinical testing and regulatory approval prior to commercialization. These efforts require significant amounts of additional capital, adequate personnel and infrastructure and extensive compliance-reporting capabilities and may not ultimately lead to a marketing approval and commercialization of a product. Even if the Company's drug development efforts are successful, it is uncertain if and when the Company will realize significant revenue from product sales.

2. Summary of significant accounting policies

Basis of presentation

The Company's condensed consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America ("GAAP"). The accompanying condensed consolidated financial statements include the accounts of the Company and its wholly owned subsidiary. All intercompany accounts and transactions have been eliminated in consolidation.

The accompanying condensed consolidated balance sheet as of September 30, 2021, the condensed consolidated statements of operations, and comprehensive loss for the three and nine months ended September 30, 2021 and 2020, the condensed consolidated statement of convertible preferred stock and stockholders' equity for the three and nine months ended September 30, 2021 and 2020 and the condensed consolidated statements of cash flows for the nine months ended September 30, 2021 and 2020 are unaudited.

The unaudited interim condensed consolidated financial statements have been prepared on the same basis as the audited annual consolidated financial statements and, in the opinion of management, reflect all adjustments, which include only normal recurring adjustments, necessary for the fair statement for interim reporting. Certain information and footnote disclosures typically included in annual financial statements prepared in accordance with GAAP have been condensed or omitted. Accordingly, these unaudited interim condensed consolidated financial statements should be read in conjunction with the Company's audited financial statements for the year ended December 31, 2020 included in the Company's Annual Report on Form 10-K, filed with the Securities and Exchange Commission. The results for any interim period are not necessarily indicative of results for any future period. Certain previous year amounts have been reclassified to conform to the current year presentation.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED) (continued)

Going concern

Since inception, the Company's activities have consisted primarily of performing research and development to advance its technologies. The Company is still in the development phase and has not been marketing its technologies to date. Through September 30, 2021, the Company has funded its operations with proceeds from sales of common stock, sales of convertible preferred stock, sales of redeemable convertible preferred stock, collaboration and licensing agreements, grants and borrowings under various agreements with foreign public funding agencies. Since inception, the Company has incurred recurring losses, including net losses of \$54.4 million for the nine months ended September 30, 2021 and \$44.1 million for the year ended December 31, 2020. As of September 30, 2021, the Company had an accumulated deficit of \$201.5 million. The Company expects to continue to generate operating losses in the foreseeable future. As of November 10, 2021, the filing date of this Quarterly Report on Form 10-Q, the Company expects that its cash and cash equivalents will be sufficient to fund its operating expenses, capital expenditure requirements and debt service payments through at least 12 months from the issuance date of the condensed consolidated financial statements.

The Company will seek additional funding in order to reach its development and commercialization objectives. The Company will seek funds through further equity financings, debt financings, collaborations, strategic alliances and marketing, distribution or licensing arrangements. The Company may not be able to obtain financing on acceptable terms, or at all, and the Company may not be able to enter into collaborations or other arrangements. The terms of any financing may adversely affect the holdings or the rights of the Company's stockholders. If the Company is unable to obtain funding, the Company could be forced to delay, reduce or eliminate some or all of its research and development programs, product portfolio expansion or commercialization efforts, which could adversely affect its business prospects.

The accompanying condensed consolidated financial statements have been prepared assuming that the Company will continue as a going concern, which contemplates the realization of assets and the settlement of liabilities and commitments in the normal course of business. The condensed consolidated financial statements do not reflect any adjustments relating to the recoverability and classification of assets or the amounts and classification of liabilities that might be necessary if the Company is unable to continue as a going concern.

Use of estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue, income and expenses during the reporting periods. Significant estimates and assumptions reflected in these condensed consolidated financial statements include, but are not limited to, the recognition of revenue and income, the accrual of research and development expenses, the present value of lease right of use assets and corresponding liabilities, the valuation of common and preferred stock, the valuation of stock-based awards and the valuation of current and non-current loans payable. The Company bases its estimates on historical experience, known trends and other market-specific or other relevant factors that it believes to be reasonable under the circumstances. On an ongoing basis, management evaluates its estimates as there are changes in circumstances, facts and experience.

The full extent to which the COVID-19 pandemic will directly or indirectly impact the Company's business, results of operations and financial condition, will depend on future developments that are highly uncertain, including as a result of new information that may emerge concerning COVID-19 and the actions taken to contain it or treat COVID-19, as well as the economic impact on local, regional, national and international customers and markets. The Company's accounting estimates and assumptions may change over time in response to COVID-19 and the change could be material in future periods. As of the date of issuance of these unaudited condensed consolidated financial statements, the Company is not aware of any specific event or circumstance that would require the Company to update estimates,

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED) (continued)

judgments or revise the carrying value of any assets or liabilities. Actual results may differ from those estimates or assumptions.

Deferred offering costs

The Company capitalizes certain legal, professional accounting and other third-party fees that are directly associated with in-process equity financings as deferred offering costs until such financings are consummated. After consummation of an equity financing, these costs are recorded in stockholders' equity as a reduction of the additional paid-in capital on a pro-rata basis generated as a result of the offering. Should the in-process equity financing be abandoned, the deferred offering costs will be expensed immediately as a charge to operating expenses in the consolidated statements of operations and comprehensive loss.

Concentrations of credit risk and of significant suppliers

Financial instruments that potentially expose the Company to concentrations of credit risk consist primarily of cash, cash equivalents and short-term bank deposits held with banks in excess of publicly insured limits. The net proceeds from the Company's offerings have been deposited in interest-bearing bank accounts with investment grade U.S. financial institutions and have been partially invested in a money market fund as of September 30, 2021. The money market fund, held in U.S. dollar, is primarily invested in U.S. and foreign short-term debt obligations. As of December 31, 2020 and September 30, 2021, the Company's cash and cash equivalents included smaller amounts of cash balances held in accounts with European banks at the Company's Austrian subsidiary, partially in euros. The Company does not believe that it is subject to unusual credit risk beyond the normal credit risk associated with commercial banking relationships.

The Company relies, and expects to continue to rely, on a small number of vendors to manufacture supplies and raw materials for its development programs. These programs could be adversely affected by a significant interruption in these manufacturing services or the availability of raw materials.

As of September 30, 2021 and December 31, 2020, respectively, Gilead Sciences, Inc. accounted for the majority of the accounts receivable balance. For the nine months ended September 30, 2021 and September 30, 2020 Gilead Sciences, Inc accounted for the majority of the Company's revenues. No other customers accounted for more than 10.0% of accounts receivable or net sales. The Company monitors the financial performance of its customers so that it can appropriately respond to changes in their credit worthiness. To date, the Company has not experienced any significant losses with respect to collection of its accounts receivable.

Cash equivalents

The Company considers all highly liquid investments with maturities of three months or less at the date of purchase to be cash equivalents. As of September 30, 2021 and December 31, 2020, cash equivalents consisted of money market funds.

Fair value measurements

Certain assets and liabilities are carried at fair value under GAAP. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. Financial assets and liabilities carried at fair value are to be classified and disclosed in one of the following three levels of the fair value hierarchy, of which the first two are considered observable and the last is considered unobservable:

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED) (continued)

- Level 1 Quoted prices in active markets for identical assets or liabilities.
- Level 2 Observable inputs (other than Level 1 quoted prices), such as quoted prices in active markets for similar assets or liabilities, quoted prices in markets that are not active for identical or similar assets or liabilities, or other inputs that are observable or can be corroborated by observable market data.
- Level 3 Unobservable inputs that are supported by little or no market activity and that are significant to
 determining the fair value of the assets or liabilities, including pricing models, discounted cash flow
 methodologies and similar techniques.

The Company's cash equivalents are carried at fair value, determined according to the fair value hierarchy described above (see Note 4).

Property and equipment

Property and equipment are stated at cost less accumulated depreciation and amortization. Depreciation and amortization expense is recognized using the straight-line method over the estimated useful life of each asset as follows:

	Estimated useful life
Leasehold improvements	2 - 5 years
Laboratory equipment	2 - 10 years
Furniture and fixtures	2 - 10 years
Computer equipment and software	2 - 4 years

Costs for capital assets not yet placed into service are capitalized as construction-in-progress and depreciated once placed into service. Expenditures for repairs and maintenance are charged to expense as incurred.

Leases

The determination whether an arrangement qualifies as a lease is made at contract inception. Operating lease assets represent the Company's right to use an underlying asset for the lease term and operating lease liabilities represent its obligation to make lease payments arising from the lease. Operating lease assets and liabilities are recognized at the commencement date of the lease based upon the present value of lease payments over the lease term. When determining the lease term, the Company includes options to extend or terminate the lease when it is reasonably certain that the option will be exercised. The Company uses the implicit rate when readily determinable and uses its incremental borrowing rate when the implicit rate is not readily determinable based upon the information available at the commencement date in determining the present value of the lease payments. The incremental borrowing rate is determined using a secured borrowing rate for the same currency and term as the associated lease. The lease payments used to determine operating lease assets may include lease incentives, stated rent increases and escalation clauses linked to rates of inflation when determinable and are recognized as operating lease assets on the consolidated balance sheets. In addition, certain of the Company's arrangements contain lease and non-lease components. The Company generally separates lease payments from non-lease payments. Operating leases are reflected in operating lease assets, in accrued expenses and other current liabilities and in non-current operating lease liabilities in the consolidated balance sheets. Lease expense for minimum lease payments is recognized on a straight-line basis over the lease term. The right-of-use asset is tested for impairment in accordance with Accounting Standards Codification ("ASC") 360.

Capitalized Software Development Cost

The Company capitalizes certain implementation costs for internal-use software incurred in a cloud computing agreement that is a service contract. Eligible costs associated with cloud computing arrangements, such as software business applications used in the normal course of business, are capitalized in accordance with ASC 350. These costs are

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED) (continued)

recognized on a straight-line basis in the same line item in the statement of operations and comprehensive loss as the expense for fees for the associated cloud computing arrangement, over the term of the arrangement, plus reasonably certain renewals.

Revenue recognition from contracts with customers

The Company entered into a collaboration and license agreement (the "Gilead Agreement") with Gilead Sciences, Inc. ("Gilead") whereby the parties agreed to collaborate with respect to two preclinical research programs to evaluate potential vaccine products for the treatment, cure, diagnosis or prevention of the hepatitis B virus ("HBV") and the human immunodeficiency virus ("HIV"). The Company's performance obligations under the terms of this agreement include one combined performance obligation for each research program (HBV and HIV) comprised of the transfer of intellectual property rights (licenses) and providing research and development services. The licenses do not represent distinct performance obligations, because they cannot be used without the research and development services. Payments to the Company under this agreement include a non-refundable up-front payment, payments for research and development activities, payments based upon the achievement of defined milestones, and if certain future conditions are met, payments for manufacturing services, commercial milestones and royalties on product sales.

The Company evaluates its collaboration and licensing arrangements pursuant to ASC 606 Revenue from Contracts with Customers. To determine the recognition of revenue from arrangements that fall within the scope of ASC 606, the Company performs the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the Company satisfies a performance obligation.

Under ASC 606, the Company applies significant judgement to evaluate whether the obligations under the collaboration and licensing arrangement, represent separate or one or more combined performance obligations, the allocation of the transaction price to identified performance obligations, and the determination of when milestone payments are probable of being received.

Upfront payment

The non-refundable upfront-payment received by the Company under the Gilead Agreement is recorded as deferred revenue and allocated between the two research program performance obligations. Such amounts are recognized as revenue over the performance period of the respective services on a percent of completion basis using total estimated research and development labor hours (input method) for each of the obligations. The percent of completion basis using labor hours was considered the best measure of progress in which control of the combined performance obligations transfers to the customer, due to the short time intervals in which research results are shared with the collaboration partner and the nature of the work being performed.

Reimbursement for services

Under the Gilead Agreement, the Company incurs employee expenses as well as external costs for research and manufacturing activities presented as operating expenses or prepaid expenses. Based on the nature of the Company's responsibilities under the collaboration arrangement, reimbursement of those costs are presented as revenue and not deducted from expenses, as the Company controls the research activities. Amounts of consideration allocated to the performance of research or manufacturing services are recognized over the period in which services are performed. Reimbursements for external costs are recognized as revenues in the period in which the goods or services are received and external costs are recognized. Unpaid reimbursement amounts are presented as Accounts receivable.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED) (continued)

Research and development milestones

The Gilead Agreement includes contingent milestone payments related to specified preclinical and clinical development milestones. These milestone payments represent variable consideration that are not initially recognized within the transaction price as they are fully constrained under the guidance in ASC 606, due to the scientific uncertainties and the required commitment from Gilead. The Company will continue to assess the probability of significant reversals for any amounts that become likely to be realized prior to recognizing the variable consideration associated with these payments within the transaction price.

Sales-based milestones and royalty payments

The Gilead Agreement also includes certain sales-based milestone and royalty payments upon successful commercialization of a licensed product. In accordance with ASC 606-10-55-65 Sales-Based or Usage-Based Royalties, the Company recognizes revenues from sales-based milestone and royalty payments at the later of (i) the occurrence of the subsequent sale; or (ii) the performance obligation to which some or all of the sales-based milestone or royalty payments has been allocated has been satisfied. The Company anticipates recognizing these milestones and royalty payments if and when subsequent sales are generated from a licensed product by the collaboration partner.

Cost to fulfill contracts

The Company incurs costs for personnel, supplies and other costs related to its laboratory operations as well as fees from third parties and license expenses in connection with its research and development obligations under the collaboration and licensing agreement. These costs are recognized as research and development expenses over the period in which services are performed. Sublicense fees triggered by the receipt of payments are capitalized as an asset when the obligation to pay the fee arises. The capitalized asset is amortized over the period in which the revenue from the triggering payment is recognized.

Recent accounting pronouncements

From time to time, new accounting pronouncements are issued by the Financial Accounting Standards Board ("FASB") or other standard setting bodies that the Company adopts as of the specified effective date.

Recently Issued Accounting Pronouncements

In July 2021, the FASB issued ASU 2021-05, which requires a lessor to classify a lease with variable lease payments (that do not depend on an index or rate) as an operating lease if the lease would have been classified as a salestype or direct financing lease, and the lessor would have recognized a selling loss at lease commencement. These changes are intended to avoid recognizing a day-one loss for a lease with variable payments even though the lessor expects the arrangement will be profitable overall. The amendments are effective for all entities for fiscal years beginning after December 15, 2021. The Company is currently assessing the impact that this guidance will have on its consolidated financial statements, however since the Company does not act as a lessor the Company believes that the adoption of this guidance will not have a material impact on its consolidated financial statements.

In May 2021, the FASB issued ASU 2021-04, which provides a principles-based framework for issuers to account for a modification or exchange of freestanding equity-classified written call options. The new guidance clarifies that to the extent applicable, issuers should first reference other GAAP to account for the effect of a modification. If other GAAP is not applicable, the guidance clarifies whether to account for the modification or exchange as an adjustment to equity, with the related EPS implications, or an expense, and if so, the manner and pattern of recognition. The accounting depends on the substance of the transaction, such as whether the modification or exchange is the result of raising equity, a financing transaction, or some other event. The new guidance is effective for annual periods

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED) (continued)

beginning after December 15, 2021, including interim periods within those fiscal years with early adoption permitted. The Company is currently assessing the impact that this guidance will have on its consolidated financial statements.

In January 2021, the FASB issued ASU 2021-01, which amends the scope of the recent reference rate reform guidance (ASC 848). New optional expedients allow derivative instruments impacted by changes in the interest rate used for margining, discounting, or contract price alignment (i.e., discount transition) to qualify for certain optional relief. The new optional expedients for contract modifications and hedge accounting are expected to benefit companies, including those with certain centrally cleared derivatives affected by a discount rate transition in 2020. The guidance is effective immediately and can be applied retrospectively to any interim period beginning January 1, 2020 or prospectively to any new modifications in any period including or subsequent to the issuance date. The adoption of this guidance did not have a material impact on the Company's consolidated financial statements.

In August 2020, the FASB issued ASU 2020-06, Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging – Contracts in Entity's Own Equity (Subtopic 815-40). The ASU provides guidance that simplified the accounting for certain financial instruments with characteristics of liabilities and equity. The new guidance reduced the number of accounting models for convertible debt and convertible preferred stock instruments and made certain disclosure amendments intended to improve the information provided to users. The guidance also amended the derivative guidance for the "own stock" scope exception, which exempts qualifying instruments from being accounted for as derivatives if certain criteria are met. Finally, the standard changed the way certain convertible instruments are treated when calculating earnings per share. This guidance is effective for fiscal years beginning after December 15, 2023, including interim periods within those fiscal years, with early adoption permitted. The Company is currently assessing the impact that this guidance will have on its consolidated financial statements.

In March 2020, the FASB issued ASU 2020-04, Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting, which provides optional expedients and exceptions to address the impact of reference rate reform where contracts, hedging relationships and other transactions that reference the London Interbank Offered Rate ("LIBOR") or another reference rate need to be discontinued. This guidance is effective as of March 12, 2020 through December 31, 2022. The Company is currently assessing the impact that this guidance will have on its consolidated financial statements. However, since the Company currently does not have contracts, hedging relationships, or other transactions that reference LIBOR or another reference rate expected to be discontinued because of the reference rate reform, the Company believes that this guidance will not have a material impact on its consolidated financial statements.

3. Collaboration and Licensing Agreements

Gilead Collaboration and License Agreement

In June 2018, the Company entered into the Gilead Agreement whereby the Company and Gilead agreed to collaborate with respect to two preclinical research programs to evaluate potential vaccine products for the treatment, cure, diagnosis or prevention of HBV and HIV.

Under the Gilead Agreement, the Company granted Gilead an exclusive, royalty-bearing license to the Company's technology platforms. Upon entering into the agreement, the Company received a non-refundable \$10.0 million upfront payment from Gilead. Gilead is also obligated to make additional payments to the Company upon the achievement of preclinical, development and commercial milestones. The development milestones amount to a total of \$280 million. The commercial milestones amount to a total of \$100 million. Additionally, Gilead is obligated to pay royalties on net sales for each program. Payments from Gilead generally have a 60 days payment term.

The \$10.0 million upfront payment received in 2018 and a \$4.0 million milestone payment received in 2020 were initially recorded as deferred revenue in the consolidated balance sheet and are recognized as revenue when

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED) (continued)

revenue recognition criteria are met. As of September 30, 2021, \$0.6 million of upfront and milestone payments were included as a liability in deferred revenues, current and non-current. Approximately 52% of deferred revenue is expected to be recognized as revenue in the remainder of 2021 and the remaining 48% in 2022.

As of September 30, 2021, \$1.8 million of cost reimbursements for research and development services were included as a liability in deferred revenues. Reimbursements for external costs are recognized as revenues in the period in which the services are provided and external costs are recognized.

In the three months ended September 30, 2021, the Company recognized \$0.1 million of the upfront payment received in 2018 and less than \$0.1 million of the \$4.0 million milestone payment received in 2020 as revenue. Furthermore, the Company recognized \$3.7 million revenue from cost reimbursements for research and development services, of which \$1.0 million were initially recorded as deferred revenue in the consolidated balance sheet. For the three months ended September 30, 2020, revenue from reimbursement of research and development expenses was \$2.8 million, and the Company recognized \$0.6 million of the upfront payment received in 2018 and \$0.6 million of the \$4.0 million milestone payment received in 2020 as revenue.

In the nine months ended September 30, 2021, the Company recognized \$0.6 million of the upfront payment received in 2018 and \$1.3 million of the \$4.0 million milestone payment received in 2020 as revenue. Furthermore, the Company recognized \$12.7 million revenue from cost reimbursements for research and development services, of which \$1.6 million were initially recorded as deferred revenue in the consolidated balance sheet. For the nine months ended September 30, 2020, revenue from reimbursement of research and development expenses was \$9.6 million, and the Company recognized \$2.0 million of the upfront payment received in 2018 and \$1.8 million of the \$4.0 million milestone payment received in 2020 as revenue. In addition, the Company fully recognized revenue for a \$1.0 million milestone payment for a milestone achieved in the nine months ended September 30, 2020.

Sublicense fees payable to certain licensors of technologies upon the receipt of the deferred upfront and milestone payments, were capitalized as a contract asset and will be amortized over the period in which the revenue from the triggering payment is recognized. As of September 30, 2021 and December 31, 2020, the contract asset and the liability relating to the sublicense payment was less than \$0.1 million and \$0.1 million, respectively.

4. Fair Value of Financial Assets

The following tables present information about the Company's financial assets measured at fair value on a recurring basis and indicating the level of the fair value hierarchy utilized to determine such fair values (in thousands):

		Fair Value Measurement at September 30, 2021 Using Level 1 Level 2 Level 3 Total						
Cash equivalents:		Level 1		evel 2		evel 5		10ld1
Money market funds	\$	35,400	\$	_	\$	_	\$	35,400
Total	\$	35,400	\$		\$		\$	35,400
		Fair Value Measurement at December 31, 2020 Using						
		Fair Valu	ıe Mea	surement a	t Dece	mber 31, 2	2020 τ	Jsing
		Fair Valı Level 1		surement a evel 2		mber 31, 2 evel 3	2020 U	Jsing Total
Cash equivalents:	_						2020 U	
Cash equivalents: Money market funds	\$						2020 U	
	\$ \$	Level 1	L				\$ \$ \$	Total

During the nine months ended September 30, 2021, there were no transfers between Level 1, Level 2 and Level 3.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED) (continued)

5. Property and equipment, net

Property and equipment, net consisted of the following (in thousands):

	September 30, 2021		December 31, 2020	
Leasehold improvements	\$	3,409	\$	3,322
Construction in progress		8,306		28
Laboratory equipment		7,270		5,982
Furniture and fixtures		623		430
Computer equipment and software		1,983		1,554
Property and equipment, gross		21,591		11,316
Less: Accumulated depreciation		(6,241)		(5,097)
Property and equipment, net	\$	15,350	\$	6,219

Construction-in-progress as of September 30, 2021 related to investments in connection with the Companies GMP manufacturing facility project.

6. Receivable research incentive

The Company participates in a research incentive program provided by the Austrian government under which it is entitled to reimbursement of a percentage of qualifying research and development expenses and capital expenditures incurred in Austria. Submissions for reimbursement under the program are submitted annually. Incentive amounts are generally paid out during the calendar year that follows the year of the expenses but remain subject to subsequent examinations by the responsible authority. Reimbursements received in excess of the recognized receivable research incentive for a certain period are recorded within other long term liabilities for potential repayment until such time that an audit has taken place, upon expiration of the potential reclaim period, or when it is no longer probable that a reclaim will happen.

As of September 30, 2021, the Company recognized receivables of \$17.9 million from the research incentive program, which are reported in research incentive receivables in the Company's condensed consolidated balance sheet. As of December 31, 2020, the receivables from the research incentive program were \$15.1 million. During the three months ended September 30, 2021 and 2020, the Company recorded \$2.3 million and \$1.8 million, respectively, of income related to the incentive program within the Company's condensed consolidated statements of operations as part of the grant income.

During the nine months ended September 30, 2021 and 2020, the Company recorded \$6.6 million and \$4.5 million, respectively, of income related to the incentive program within the Company's condensed consolidated statements of operations as part of the grant income.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED) (continued)

7. Accrued expenses and other current liabilities

Accrued expenses and other current liabilities consisted of the following (in thousands):

	September 30,	December 31,
	2021	2020
Salaries and bonuses	4,780	4,381
Social security contributions	250	211
Unearned grant income (current)	811	878
Accrued external research and development expenses	2,417	895
Accrued external general and administration expenses	818	634
Accrued for property and equipment acquisitions	271	
Finance lease liabilities	132	155
Other accruals and liabilities	28	232
	\$ 9,507	\$ 7,386

8. Loans payable

As of September 30, 2021 and December 31, 2020, loans payable consisted of the following (in thousands):

	Sept	ember 30,	De	cember 31,	
		2021	2020		
Loans from FFG	\$	6,213	\$	6,564	
Unamortized debt discount		(1,304)		(2,027)	
Total Loans payable, net	\$	4,909	\$	4,537	

In connection with the funding agreements with the Austrian Research Promotion Agency, (*Österreichische Forschungsförderungsgesellschaft*, or "FFG"), the Company has received various loans ("FFG Loans"). The FFG Loans were made on a project-by-project basis. Amounts due under the FFG Loans bear interest at rates ranging from 0.75% to 1.0% per annum and mature at various dates between June 2022 and March 2024. Interest on amounts due under the loans is payable semi-annually in arrears, with all principal and remaining accrued interest due upon maturity.

The FFG Loans bear interest at rates that are below market rates of interest. The Company accounts for the imputed benefit arising from the difference between an estimated market rate of interest and the rate of interest charged by FFG as grant income from FFG. On the date that FFG loan proceeds are received, the Company recognizes the portion of the loan proceeds allocated to grant funding as a discount to the carrying value of the loan and as unearned income, which is recognized as grant income over the term of the funding agreement.

In November 2019, the Company agreed to an earlier repayment schedule for \$3.3 million of the outstanding loans with FFG. As a result of the change, the Company reduced the deferred income attributable to the imputed benefit from below market interest by \$0.3 million and increased the carrying value of the loans by the same amount.

No principal repayment was made in the three and nine months ended September 30, 2021. No principal repayment was made in the three months ended September 30, 2021. A principal repayment of \$1.3 million was made in the nine months ended September 30, 2020.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED) (continued)

As of September 30, 2021, the aggregate minimum future principal payments due in connection with the FFG Loans are summarized as follows (in thousands):

Payments Due by Calendar Year	A	mount
2021 (remaining 3 months)		_
2022		3,124
2023		1,862
2024		1,227
Thereafter		_
Total	\$	6,213

9. Common stock, Class A common stock and convertible preferred stock

In June 2018, the Company became the reporting entity in a transaction between entities under common control. In the accompanying condensed consolidated financial statements and notes, the common stock is retrospectively presented as if the Company had been the reporting entity for all periods during which the previous reporting entity was under common control.

The Company's capital structure consists of common stock, Class A common stock and preferred stock. As of September 30, 2021, the Company was authorized to issue 100,000,000 shares of common stock, 3,900,000 shares of Class A common stock and 10,000,000 shares of preferred stock. The Company has designated 2,978 of the 10,000,000 authorized shares of preferred stock as non-voting Series A convertible preferred stock. As of September 30, 2021, the Company had 26,084,065 shares of common stock, 3,819,732 shares of Class A common stock and 2,978 shares of preferred stock outstanding and issued.

On April 23, 2019, the Company closed its IPO of 6,000,000 shares of common stock, at an offering price to the public of \$14.00 per share. The Company received net proceeds of \$74.6 million, after deducting \$9.4 million in underwriting discounts and commissions and offering expenses. Upon the closing of the Company's IPO, all then outstanding shares of Preferred Stock converted into 14,582,161 shares of common stock and 3,819,732 shares of Class A common stock.

On December 11, 2020, the Company closed a public offering of 3,910,000 shares of its common stock, which included the full exercise of the underwriters' option to purchase additional shares and of 2,978 shares of Series A convertible preferred stock at a public offering price of \$11.75 and \$11,750.00 per share, respectively, for net proceeds of \$75.0 million after deducting underwriting discounts and commissions and offering expenses.

Holders of common stock are entitled to one vote for each share held on all matters submitted to a vote of the stockholders. The holders of Class A common stock and Series A convertible preferred stock are not entitled to vote, except as required by law. The holders of common stock and Class A common stock do not have any cumulative voting rights.

Each holder of Class A common stock has the right to convert each share of Class A common stock into one share of common stock at such holder's election. Each holder of Series A convertible preferred stock has the right to convert each share of Series A convertible preferred stock into 1,000 shares of common stock at any time at the holder's option, provided that the holder will be prohibited, subject to certain exceptions, from converting Series A preferred stock into shares of our common stock if, as a result of such conversion, the holder, together with its affiliates, would own more than 9.99% of the total number of shares of our common stock then issued and outstanding.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED) (continued)

Holders of common stock and Class A common stock are entitled to receive ratably any dividends declared by the board of directors out of funds legally available for that purpose, subject to any preferential dividend rights of any outstanding preferred stock. Holders of Series A preferred stock will be entitled to receive dividends at a rate equal to (on an as-if-converted-to-common stock basis), and in the same form and manner as, dividends actually paid on shares of our common stock. Holders of common stock and Class A common stock have no preemptive rights, conversion rights, or other subscription rights or redemption or sinking fund provisions.

In the event of a liquidation, dissolution, or winding up of the Company, holders of our Series A preferred stock will receive a payment equal to \$0.001 per share of Series A preferred stock before any proceeds are distributed to the holders of common stock. Then, holders of common stock and Class A common stock will be entitled to share ratably in all assets remaining after payment of all debts and other liabilities.

10. Stock-based compensation

2018 Stock Option and Grant Plan

In connection with a transaction between entities under common control by which the Company became the reporting entity in June 2018, the Board of Directors approved the 2018 Stock Option and Grant Plan, by which options granted by the previous reporting entity under the 2016 Stock Option Plan and outstanding at the time of the effectiveness of the transaction were replaced at similar commercial terms. In the accompanying condensed consolidated financial statements and notes, options issued under previous stock option plans and respective compensation expenses are retrospectively presented as if such options had been issued and outstanding under the 2018 Stock Option and Grant Plan for all periods during which the previous reporting entity was under common control.

The exercise price for options granted as a replacement of the 2016 Stock Option Plan is the U.S. dollar equivalent of €0.09, except for 23,286 options granted to an US employee, for which the exercise price is \$2.93 following a repricing of these options in December 2018. For any new options, the exercise price shall not be less than 100% of the fair market value of the common stock on the grant date.

Options granted under the 2018 Stock Option and Grant Plan generally vest over four years, with 25% of the options vesting upon the first anniversary of the grant date and the remaining 75% of the options vesting in 12 equal quarterly installments following the first anniversary of the grant date, provided the option holder continues to have an employment or service relationship with the Company on each vesting date. The options expire on the 10th anniversary of the grant date. As of September 30, 2021, 995,961 options granted under the 2018 Stock Option and Grant Plan remained outstanding. Any authorization to issue new options under the 2018 Stock Option and Grant Plan was cancelled upon the effectiveness of the 2019 Stock Option and Incentive Plan and no further awards will be granted under the 2018 Plan.

2019 Stock Option and Incentive Plan

On April 1, 2019, the Company's stockholders approved the 2019 Stock Option and Incentive Plan, which became effective as of the effective date of the registration statement in connection with the Company's IPO. The plan provides for the grant of shares of restricted stock, long term incentive awards, stock options or other equity-based awards. The maximum number of shares of the Company's common stock that may be issued under the Company's 2019 Stock Option and Incentive Plan is 3,630,686 shares which shall be cumulatively increased each year by up to 4% of the then outstanding number of shares. Options granted under the 2019 Stock Option and Incentive Plan generally vest over four years, with 25% of the options vesting upon the first anniversary of the grant date and the remaining 75% of the options vesting in 12 equal quarterly installments following the first anniversary of the grant date, provided the option holder continues to have an employment or service relationship with the Company on each vesting date. Initial options granted to non-executive directors upon their election generally vest over a three-year term with 33% of the

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED) (continued)

options vesting upon the first anniversary of the grant date and the remaining 67% of the options vesting in eight equal quarterly installments following the first anniversary of the grant date. Option re-grants to non-executive directors generally vest on the first anniversary of the grant date. The options expire on the 10th anniversary of the grant date. For each option, the beneficiary is entitled to receive one share of common stock upon the exercise of the option.

Stock option valuation

The Company estimates the option's fair value on the date of grant using the Black-Scholes option-pricing model. Black-Scholes utilizes assumptions related to expected term, volatility, the risk-free interest rate, the dividend and employee exercise behavior. Forfeitures are accounted for when they occur. Expected volatilities utilized in the Black-Scholes model are based on historical volatilities of a group of comparable companies. The group of representative companies have characteristics similar to the Company, including the stage of product development and focus of the life science industry. Management believes that this represents the most accurate basis for estimating expected future volatilities under the current conditions. The risk-free interest rate is derived from the yields for U.S. Treasuries with a remaining term approximating the expected life of the options. The expected term represents the period of time that the options granted are expected to be outstanding.

The following table summarizes the assumptions used in the Black-Scholes option-pricing model for estimating the fair value of stock options granted during:

	Three months ended S	eptember 30,	Nine months ended S	September 30,
	2021	2020	2021	2020
Risk-free interest rate	0.94 %	0.38 %	1.06 %	0.44 %
Expected term (in years)	6.1	6.1	6.1	6.1
Expected volatility	85.3 %	85.8 %	85.4 %	79.7 %
Expected dividends	— %	— %	— %	— %

For the 2021 and 2020 grants, the Company used the simplified method in developing an estimate of the expected term due to a lack of historical exercise data.

Stock option activity

The following table summarizes the Company's stock option activity since January 1, 2021 (in thousands, except share and per share amounts):

	Number of Shares	Weighted Average Exercise Price		Weighted Average Remaining Contractual Term (in years)	ggregate Intrinsic Value
Outstanding as of December 31, 2020	3,555,945	\$	8.45	7.9	\$ 12,839
Granted	946,932		11.86		
Exercised	(101,399)		2.35		
Forfeited	(174,621)		11.54		
Outstanding as of September 30, 2021	4,226,857	\$	9.23	7.7	\$ 4,465
Options exercisable as of September 30, 2021	2,071,001	\$	7.32	6.8	\$ 4,328
Options unvested as of September 30, 2021	2,155,856	\$	11.06	8.6	\$ 137

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED) (continued)

The aggregate intrinsic value of stock options was calculated as the difference between the exercise price of the stock options and the estimated fair value of the Company's common stock for those stock options that had exercise prices lower than the fair value of the Company's common stock. The estimated fair value per common stock used for calculating the intrinsic values as of September 30, 2021 and December 31, 2020, was \$5.89 and \$11.09, respectively.

Cash received from option exercise under share-based payment arrangements for the nine months ended September 30, 2021 was \$239 thousand. Cash received from option exercise under share-based payment arrangements for the nine months ended September 30, 2020 was \$31 thousand.

Restricted Stock Units

In 2020, the Company granted restricted stock units with time-based vesting conditions to officers, employees and a consultant to compensate them for a temporary salary or fee reduction in response to the coronavirus pandemic. The restricted stock units are subject to time-based vesting conditions and generally vest in four equal installments between March 2021 and November 2021. The Company measures the fair value of restricted stock units on the date of grant using the grant date market price of the underlying shares. Expenses are recorded using the graded-vesting method. The table below summarizes the Company's restricted stock unit activity since December 31, 2020:

			Weighted erage Grant		
	Number of	Date Fair			
	Shares	Shares			
Outstanding as of December 31, 2020	43,700	\$	11.87		
Granted	_		_		
Vested	(33,954)		11.88		
Forfeited	_		_		
Outstanding as of September 30, 2021	9,746	\$	11.84		

Stock-based compensation

Stock-based compensation expense was classified in the condensed consolidated statements of operations and comprehensive loss as follows (in thousands):

	Three months ended September 30,					, Nine months ended September			
	2021 2		2020 2021		2021		2020		
Research and development expenses	\$	643	\$	856	\$	2,412	\$	2,304	
General and administrative expenses		1,076		1,291		3,455		4,088	
	\$	1,719	\$	2,147	\$	5,867	\$	6,392	

11. Income taxes

Income tax expense during the three months ended September 30, 2021 and 2020 resulted from minimum tax obligations. During the three months ended September 30, 2021 and 2020, the Company recorded no income tax benefits for the net operating losses incurred, due to its uncertainty of realizing a benefit from those items. The Company's losses before income taxes were generated in the United States and Austria. The Company has evaluated the positive and negative evidence bearing upon its ability to realize the deferred tax assets resulting from its net operating loss carryforwards. Management has considered the Company's history of cumulative net losses incurred since inception and its lack of commercialization of any products or generation of any revenue from product sales since inception and has concluded that it is more likely than not that the Company will not realize the benefits of its deferred tax assets.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED) (continued)

Accordingly, a full valuation allowance has been established against the deferred tax assets as of September 30, 2021 and December 31, 2020. Management reevaluates the positive and negative evidence at each reporting period.

12. Commitments and contingencies

Operating and Finance Leases

The Company leases real estate, including office and laboratory space and has entered into various other agreements with respect to assets used in conducting its business. The Company is required to maintain a cash balance of \$0.4 million to secure letters of credit associated with real estate leases. This amount was classified as non-current restricted cash in the Company's condensed consolidated balance sheet as of September 30, 2021.

As of September 30, 2021 and December 31, 2020, the Company's operating lease right-of-use assets were \$4.7 million and \$6.5 million, respectively, which are reported in operating lease right-of-use assets in the Company's condensed consolidated balance sheets. As of September 30, 2021 and December 31, 2020, the Company's finance lease right-of-use assets were \$0.9 million and \$1.3 million, respectively, which are reported in finance lease right-of-use assets in the Company's condensed consolidated balance sheets. As of September 30, 2021, the Company had outstanding operating lease obligations of \$4.2 million, of which \$1.9 million is reported in operating lease liabilities, current portion and \$2.3 million is reported in operating lease liabilities, non-current portion in the Company's condensed consolidated balance sheets. As of September 30, 2021, the Company had outstanding finance lease obligations of \$0.3 million, of which \$0.1 million is reported in accrued expenses and other current liabilities and \$0.2 million is reported in other noncurrent liabilities in the Company's condensed consolidated balance sheets. As of December 31, 2020, the Company had outstanding operating lease obligations of \$5.8 million, of which \$2.0 million is reported in operating lease liabilities, current portion and \$3.8 million is reported in operating lease liabilities, non-current portion in the Company's condensed consolidated balance sheets. As of December 31, 2020, the Company had outstanding finance lease obligations of \$0.5 million, of which \$0.2 million is reported in accrued expenses and other current liabilities and \$0.3 million is reported in other non-current liabilities in the Company's condensed consolidated balance sheets. The Company's weighted average discount rate and weighted average lease term remaining on operating lease liabilities is approximately 2.3% and 2.3 years, respectively. The Company's weighted average discount rate and weighted average lease term remaining on finance lease liabilities is approximately 1.7% and 2.3 years, respectively.

Contract manufacturing arrangements

The Company has entered into arrangements with contract manufacturing organizations ("CMOs") for manufacturing of materials for research and development purposes, including manufacturing of clinical trial materials. These contracts generally provide for non-cancellable obligations or cancellation penalties depending on the time of cancellation. As of September 30, 2021, the Company's total non-cancellable obligations under contracts with CMOs, excluding embedded lease liabilities, were \$10.5 million, of which \$7.2 million relate to 2021 (remaining three months) deliverables, \$3.2 million relate to 2022, less than \$0.1 million relate to 2023, and less than \$0.1 million relate to 2024 deliverables.

Intellectual property licenses

The Company has entered into certain license agreements under which it is obligated to make milestone payments upon the achievement of certain development and regulatory milestones, to pay royalties on net sales of licensed products, and to pay a percentage of the sublicense fees which the Company receives from its sublicensees.

In the three and nine months ended September 30, 2021, the Company recorded \$0.2 million and \$0.7 million, respectively, in licensing fees from intellectual property licenses as research and development expenses. These amounts mainly related to the upfront payment and milestone payments received by the Company under the Gilead Agreement.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED) (continued)

The amounts recognized as expenses have been agreed to by the licensors but calculation of sublicensing fees on future payments may be subject to interpretation and may change until agreed to by the receiving party.

Indemnification agreements

In the ordinary course of business, the Company may provide indemnification of varying scope and terms to vendors, lessors, business partners and other parties with respect to certain matters including, but not limited to, losses arising out of breach of such agreements or from intellectual property infringement claims made by third parties. In addition, the Company has entered into indemnification agreements with members of its Board of Directors and senior management that will require the Company, among other things, to indemnify them against certain liabilities that may arise by reason of their status or service as directors or officers. The maximum potential amount of future payments the Company could be required to make under these indemnification agreements is, in many cases, unlimited. To date, the Company has not incurred any material costs as a result of such indemnifications. The Company is not aware of any claims under indemnification arrangements, and it has not accrued any liabilities related to such obligations in its condensed consolidated financial statements as of September 30, 2021 and December 31, 2020.

Legal proceedings

At each reporting date, the Company evaluates whether or not a potential loss amount or a potential range of loss is probable and reasonably estimable under the provisions of the authoritative guidance that addresses accounting for contingencies. While it is not feasible to predict the outcome of these matters with certainty, and some lawsuits, claims or proceedings may be disposed or decided unfavorably, the Company does not expect that any asserted or un-asserted legal claims or proceedings, individually or in the aggregate, will have a material adverse effect on the Company. The Company expenses the costs related to such legal proceedings as incurred.

13. Net loss per share

The following table sets forth the computation of the basic and diluted net loss per share attributable to common stockholders (in thousands, except for per share amounts):

	Three months ended September 30, 2021 2020			Nine months ende			September 30, 2020	
Numerator:				2020	2021			2020
Net loss	\$	(20,040)	\$	(13,589)	\$	(54,430)	\$	(31,608)
Denominator:								
Weighted-average common shares outstanding,								
basic and diluted	2	9,896,426		25,659,504		29,837,389		25,645,827
Weighted-average Series A convertible preferred shares outstanding, basic and diluted, presented as								
if converted into common stock ⁽¹⁾		2,978,000		_		2,978,000		_
Total number of shares used to calculate net loss per								
share, basic and diluted	3	2,874,426		25,659,504		32,815,389		25,645,827
Net loss per share, basic and diluted	\$	(0.61)	\$	(0.53)	\$	(1.66)	\$	(1.23)

⁽¹⁾ Series A convertible preferred stock are participating securities that have substantially the same terms and features as the Company's common stock. Series A convertible preferred stock is therefore included in the weighted-average number of shares outstanding to calculate net loss per share, basic and diluted as if converted in common stock. Each

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED) (continued)

share of Series A convertible preferred stock is convertible into 1,000 shares of common stock. 2,978,000 shares of the Company's common stock are issuable upon conversion of Series A convertible preferred stock (see Note 9).

Since the Company was in a loss position for all periods presented, basic net loss per share is the same as diluted net loss per share for all periods as the inclusion of all potential common shares (Common Stock and Class A Common Stock) outstanding would have been anti-dilutive. Potentially dilutive securities that were not included in the diluted per share calculations because they would be anti-dilutive were as follows:

	Three and nine months en	ıded September 30,
	2021	2020
Options issued and outstanding	4,226,857	3,645,967
Unvested restricted stock units	9,746	44,308
Total	4,236,603	3,690,275

14. Related parties

Following the expiry of the consultancy agreement between the Company and its Chief Scientific Officer, Daniel Pinschewer, on March 19, 2020 the Company entered into a new consultancy agreement with Daniel Pinschewer, pursuant to which he serves as Scientific Advisor to the Chief Executive Officer.

The Company is party to research and service arrangements with the University of Basel. Daniel Pinschewer, formerly Chief Scientific Officer, and his spouse are employees of the University of Basel and both involved in providing the services under these arrangements. The University of Basel is also entitled to receive de minimis royalties on the net sales of any product that is based on a patent created by Daniel Pinschewer during the course of his consulting services to the Company. Payments to the University of Basel during Daniel Pinschewer's term as Chief Scientific Officer were reported as related party transactions but payments following the expiry of that role in March 2020 were no longer considered related party transactions.

In the three and nine months ended September 30, 2021, the Company recorded no related party transactions. In the nine months ended September 30, 2020, the Company recorded \$0.3 million in research and development expenses for service fees paid to the University of Basel, which represented related party transactions. None of these expenses were recorded in the three months ended September 30, 2020.

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our unaudited condensed consolidated financial statements and related notes appearing elsewhere in this Quarterly Report on Form 10-Q and our audited consolidated financial statements and related notes for the year ended December 31, 2020 included in our Annual Report on Form 10-K filed with the Securities and Exchange Commission, or the SEC. As a result of many factors, including those factors set forth in the "Risk Factors" section of this Quarterly Report on Form 10-Q and the "Risk Factors" section of our Annual Report on Form 10-K for the year end December 31, 2020, 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

We are a clinical-stage biopharmaceutical company focused on developing novel immunotherapies based on our proprietary arenavirus platform that is designed to mobilize and amplify targeted T cells and the body's natural infection killers, to fight or prevent serious disease. Our replicating and non-replicating technologies are engineered to induce robust and durable antigen-specific CD8+ T cell responses and pathogen-neutralizing antibodies. We believe that our technologies can meaningfully leverage the human immune system for prophylactic and therapeutic purposes by inducing CD8+ T cell response levels previously not achieved by other immunotherapy approaches.

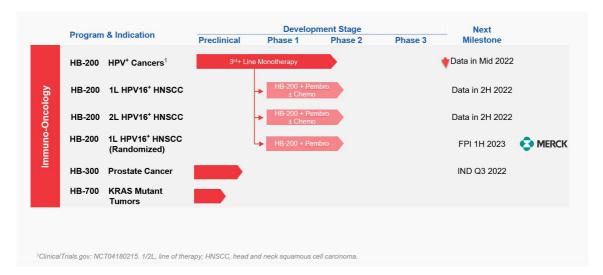
Our oncology portfolio includes three disclosed programs, HB-200, HB-300, and HB-700, which all use our replicating technology. HB-200 is in clinical development for the treatment of Human Papillomavirus 16-positive cancers in an ongoing Phase 1/2 clinical trial. HB-300 is in development for the treatment of prostate cancer and expected to move into the clinic after the third quarter 2022 investigational new drug application filing. HB-700 is our newest asset in preclinical development for treatment of KRAS mutated cancers, including, lung, colorectal and pancreatic cancers.

Our HB-200 program is comprised of HB-201 and HB-202. HB-201 is being evaluated as monotherapy and in an alternating combination with HB-202 in an ongoing Phase 1/2 study. In November 2021, we announced updated interim data on our ongoing Phase 1 portion of the study, with additional data strengthening HB-200's tolerability, anti-tumor activity and pharmacodynamic T cell datasets, released earlier in the year at the American Society of Clinical Oncology (ASCO) Annual Meeting in June 2021. The updates included data on an additional 24 patients who received HB-201 or HB-202/HB-201, 13 of whom were evaluable (had one or more scans).

The interim data showed that HB-200 continues to demonstrate a favorable tolerability profile in heavily pretreated patients with HPV16+ cancers, highlighting its potential in possible combination with checkpoint inhibitors and other agents. Treatment-related adverse events were reported in 66% of patients, with only 8% experiencing treatment-related adverse events rated grade 3 or higher. HB-200 demonstrated promising, early anti-tumor activity in patients with advanced head and neck cancers (a median of three prior lines of therapy), including a 75% disease control rate, tumor shrinkage in 53% of patients and an ongoing median progression-free survival of 3.45 months. The T cell data show that HB-200 rapidly induces high levels of activated, tumor-specific CD8+ T cells, with more than 90% of patients achieving an increase in tumor-specific CD8+ T cells within two weeks of the initial HB-200 dose and 50% of patients showing elevated tumor infiltrating lymphocytes in their tumors.

Additionally, we have initiated the Phase 2 portion of the study, combining HB-200 and pembrolizumab as treatment for advanced/metastatic head and neck cancer patients. In September 2021, we entered into a clinical collaboration with Merck & Co., Inc. to evaluate the combination of HB-200 and Merck & Co., Inc's anti-PD-1 therapy, KEYTRUDA® (pembrolizumab) in a separate randomized Phase 2 study.

HB-300, our therapeutic candidate for prostate cancer, is planned to move into the clinic after we file an investigational new drug application for this program, expected in the third quarter of 2022. In November 2021 we announced our preclinical asset for KRAS mutated cancers, HB-700 with an initial tumor type focus areas of colorectal, pancreatic and lung cancers.



Our oncology product candidate pipeline consists of the following programs:

Our non-replicating prophylactic Cytomegalovirus, or CMV, vaccine candidate, HB-101, is a potential first inclass compound in a Phase 2 clinical trial for patients awaiting kidney transplantation. In June 2021, we completed enrollment in the Phase 2 clinical study. In November 2021, we reported additional safety, immunogenicity and efficacy data to be largely consistent with the update in November 2020, whereby the three-dose schedule of HB-101 pretransplantation showed a trend of reducing incidence of CMV viremia and antiviral use. The trial will continue to follow patients currently on-study with final top-line data readout in the first half of 2023. We have decided to pursue HB-101 further only if we are able to partner the program with a collaborator, thereby enabling greater strategic focus on the immuno-oncology programs.

To expand our infectious disease portfolio, we entered into a collaboration and licensing agreement with Gilead Sciences, Inc. to research arenavirus functional cures for HIV and chronic Hepatitis B infections. The HBV program has successfully passed Gilead's Request for Development milestone, and we expect Gilead to file the necessary regulatory documents to initiate clinical trials in 2022. For the HIV program, following successful completion of all pre-clinical activities in accordance with the Collaboration Agreement, we are in ongoing discussions with Gilead to find alternative structures in order to continue the advancement of the HIV program.

We have funded our operations to date primarily from private placements of our redeemable convertible preferred stock, with aggregate gross proceeds of approximately \$142.5 million, grant funding and loans from an Austrian government agency, and \$22.2 million in upfront and milestone payments from Gilead in connection with a research collaboration and license agreement. On April 23, 2019, we completed an initial public offering of our common stock, the IPO, in which we issued 6.0 million shares of our common stock, at \$14.00 per share, for gross proceeds of \$84.0 million, or net proceeds of \$74.6 million. On December 11, 2020, we completed a follow-on public offering in which we issued 3.9 million shares of our common stock, at \$11.75 per share, and 2,978 shares of our Series A convertible preferred stock, at \$11,750.00 per share, for net proceeds of \$75.0 million after deducting underwriting discounts and commissions and offering expenses.

We do not expect to generate revenue from any product candidates that we develop until we obtain regulatory approval for one or more of such product candidates, if at all, and commercialize our products or enter into additional collaboration agreements with third parties. Substantially all of our net losses have resulted from costs incurred in connection with our research and development programs and from general and administrative costs associated with our operations.

All of our product candidates, including our most advanced product candidate, HB-101, will require substantial additional development time and resources before we would be able to apply for and receive regulatory approvals and begin generating revenue from product sales. Before launching our first products, if approved, we plan to establish our own manufacturing facility to reduce or eliminate our reliance on contract manufacturing organizations (CMOs) which will require substantial capital expenditures and cause additional operating expenses. We currently have no marketing and sales organization and have no experience in marketing products; accordingly, we will incur significant expenses to develop a marketing organization and sales force in advance of generating any commercial product sales. As a result, we will need substantial additional capital to support our operating activities. In addition, we expect to continue to incur legal, accounting and other expenses in operating our business, including the costs associated with operating as a public company.

We currently anticipate that we will seek to fund our operations through equity or debt financings or other sources, such as government grants and additional collaboration agreements with third parties. Adequate funding may not be available to us on acceptable terms, or at all. If sufficient funds on acceptable terms are not available when needed, we will be required to significantly reduce our operating expenses and delay, reduce the scope of, or eliminate one or more of our development programs.

We have incurred net losses each year since our inception in 2011, including net losses of \$20.0 million and \$54.4 million for the three and nine months ended September 30, 2021. As of September 30, 2021, we had an accumulated deficit of \$201.5 million and we do not expect positive cash flows from operations in the foreseeable future, if ever. We expect to continue to incur net operating losses for at least the next several years as we advance our product candidates through clinical development, seek regulatory approval, prepare for and, if approved, proceed to commercialization, continue our research and development efforts and invest to establish a commercial manufacturing facility.

Special Note About Coronavirus (COVID-19)

In March 2020, we announced initial potential business impacts related to the outbreak of a novel strain of virus named SARS-CoV-2 (severe acute respiratory syndrome 2), or coronavirus, which causes coronavirus disease, or COVID-19. As a result of the COVID-19 pandemic, we have experienced, and may further experience, disruptions that have and could further adversely impact our business operations as well as our preclinical studies and clinical trials. Specifically, nearly all of the Phase 2 trial sites we utilize for our HB-101 Phase 2 trial had temporarily suspended enrollment of patients, resumed patient enrollment, but suspended enrolment again during periods of increased confirmed infections in the United States and Europe. As a result, the total number of patients in the trial at the conclusion of enrollment trial in June 2021 was below the originally planned number of patients.

In addition, certain aspects of our supply chain were temporarily impacted as certain of our third-party suppliers and manufacturers had paused their operations in response to the COVID-19 pandemic or had otherwise encountered delays in providing their services. The uncertainties resulting from the COVID-19 pandemic have led us to temporarily focus on our core programs, HB-101, HB-200 as well as research and development activities under our collaboration with Gilead in 2020 and 2021. Certain earlier stage programs, including HB-300, have been temporarily de-prioritized and were only allocated the resources that could be made available without impacting our core programs. While we have resumed activities for these earlier stage programs in 2021, we continue to evaluate the extent to which potential constraints of our third-party suppliers and manufacturers will impact our ability to manufacture our product candidates for our clinical trials and conduct other research and development operations and maintain applicable timelines. The ultimate impact of the coronavirus pandemic on our business operations as well as our preclinical studies and clinical trials remains uncertain and subject to change and will depend on future developments, which cannot be accurately predicted. We will continue to monitor the situation closely.

Furthermore, in order to preserve resources and liquidity, all of our officers had waived at least 25% of their cash salaries for the three months ended June 30, 2020, and the vast majority of our employees agreed to a temporary salary reduction of 20% for the three months ended June 30, 2020. We compensated our officers and employees for the forgone cash salaries by issuing restricted stock units in July 2020. Our directors have also accepted to receive equity instead of cash for their accrued board fees. We encourage our staff to work from home, and since October 2020, we

offer twice per week sentinel COVID-19 PCR-testing to all our Vienna employees in order to enhance health and safety, in particular for laboratory work that has to be performed on site. Since October 2021 we have required our employees to be either fully vaccinated, cured from a COVID-19 infection or to have obtained a negative PCR-test to enter our offices.

Components of Our Results of Operations

Revenue from collaboration and licensing

To date, we have not generated any revenue from product sales and do not expect to do so in the near future, if at all. All of our revenue to date has been derived from a research collaboration and license agreement with Gilead.

On June 4, 2018, we entered into a Research Collaboration and License Agreement, or the Collaboration Agreement, with Gilead to evaluate potential vaccine products using or incorporating our replicating technology and non-replicating technology for the treatment, cure, diagnosis or prevention of HBV and HIV.

Under the Collaboration Agreement, we granted Gilead an exclusive, royalty-bearing license to our technology platform for researching, developing, manufacturing and commercializing products for HIV or HBV. We received a non-refundable \$10.0 million upfront payment upon entering the Collaboration Agreement. Gilead is obligated to reimburse us for our costs, including all benefits, travel, overhead, and any other expenses, relating to performing research and development activities under the Collaboration Agreement. We are also eligible to receive up to \$140.0 million in developmental milestone payments for each of the HBV and HIV programs and up to \$50.0 million in commercialization milestone payments for each of the HBV and HIV programs. Additionally, Gilead is obligated to pay royalties of a high single-digit to low-teens percentage on the worldwide net sales of each HBV product, and royalties of a mid-single-digit to low-teens percentage of worldwide net sales of each HIV product.

We determined that our performance obligations under the terms of the Collaboration Agreement included one combined performance obligation for each of the HBV and HIV research programs, comprised of the transfer of intellectual property rights and providing research and development services. Accordingly, we recognize these amounts as revenue over the performance period of the respective services on a percent of completion basis using total estimated research and development labor hours for each of the performance obligations.

Since entering into the Collaboration Agreement, we have received from Gilead the non-refundable upfront payment of \$10.0 million and \$12.2 million in milestone payments for the achievement of pre-clinical research milestones. In addition, we have recognized \$31.7 million of cost reimbursements for research and development services performed under the Collaboration Agreement.

Operating Expenses

Our operating expenses since inception have only consisted of research and development costs and general administrative costs.

Research and Development Expenses

Since our inception, we have focused significant resources on our research and development activities, including establishing our arenavirus platform, conducting preclinical studies, developing a manufacturing process, conducting a Phase 1 clinical trial and the ongoing Phase 2 clinical trial for HB-101 as well as initiating a Phase 1/2 trial for HB-201 and preparing an investigational new drug, or IND, application for HB-202. Research and development activities account for a significant portion of our operating expenses. Research and development costs are expensed as incurred. These costs include:

 salaries, benefits and other related costs, including stock-based compensation, for personnel engaged in research and development functions;

- expenses incurred in connection with the preclinical development of our programs and clinical trials of our
 product candidates, including under agreements with third parties, such as consultants, contractors, academic
 institutions and contract research organizations, or CROs;
- the cost of manufacturing drug products for use in clinical trials, including under agreements with third parties, such as CMOs, consultants and contractors;
- laboratory costs;
- leased facility costs, equipment depreciation and other expenses, which include direct and allocated expenses; and
- intellectual property costs incurred in connection with filing and prosecuting patent applications as well as third-party license fees.

The majority of our research and development costs are external costs, which we track on a program-by-program basis. We do not track our internal research and development expenses on a program-by-program basis as they primarily relate to shared costs deployed across multiple projects under development.

We expect our research and development expenses to increase substantially in the future as we advance our existing and future product candidates into and through clinical trials and pursue regulatory approval. The process of conducting the necessary clinical studies to obtain regulatory approval is costly and time-consuming. Clinical trials generally become larger and more costly to conduct as they advance into later stages and, in the future, we will be required to make estimates for expense accruals related to clinical trial expenses.

At this time, we cannot reasonably estimate or know the nature, timing and estimated costs of the efforts that will be necessary to complete the development of any product candidates that we develop from our programs. We are also unable to predict when, if ever, material net cash inflows will commence from sales of product candidates we develop, if at all. This is due to the numerous risks and uncertainties associated with developing product candidates, including the uncertainty of:

- successful completion of preclinical studies and clinical trials;
- sufficiency of our financial and other resources to complete the necessary preclinical studies and clinical trials;
- acceptance of INDs for our planned clinical trials or future clinical trials;
- successful enrollment and completion of clinical trials;
- successful data from our clinical program that support an acceptable risk-benefit profile of our product candidates in the intended populations;
- receipt and maintenance of regulatory and marketing approvals from applicable regulatory authorities;
- scale-up of our manufacturing processes and formulation of our product candidates for later stages of development and commercialization;
- establishing our own manufacturing capabilities or agreements with third-party manufacturers for clinical supply for our clinical trials and commercial manufacturing, if our product candidate is approved;
- entry into collaborations to further the development of our product candidates;

- obtaining and maintaining patent and trade secret protection or regulatory exclusivity for our product candidates;
- successfully launching commercial sales of our product candidates, if and when approved;
- acceptance of the product candidates benefits and uses, if and when approved, by patients, the medical community and third-party payors;
- the prevalence and severity of adverse events experienced with our product candidates;
- maintaining a continued acceptable safety profile of the product candidates following approval;
- effectively competing with other therapies;
- obtaining and maintaining healthcare coverage and adequate reimbursement from third-party payors; and
- qualifying for, maintaining, enforcing and defending intellectual property rights and claims.

A change in the outcome of any of these variables with respect to the development of a product candidate could mean a significant change in the costs and timing associated with the development of that product candidate. For example, if the U.S. Food and Drug Administration or another regulatory authority were to require us to conduct clinical trials beyond those that we anticipate will be required for the completion of clinical development of a product candidate, or if we experience significant delays in our clinical trials due to patient enrollment or other reasons, we would be required to expend significant additional financial resources and time on the completion of clinical development.

General and Administrative Expenses

Our general and administrative expenses consist primarily of personnel costs in our executive, finance and investor relations, business development and administrative functions. Other general and administrative expenses include consulting fees and professional service fees for auditing, tax and legal services, lease expenses related to our offices, premiums for directors and officers liability insurance, depreciation and other costs. We expect our general and administrative expenses to continue to increase in the future as we expand our operating activities and prepare for potential commercialization of our current and future product candidates, increase our headcount and investor relations activities and maintain compliance with requirements of the Nasdaq Global Select Market and the Securities and Exchange Commission.

Grant Income

Since inception, we have received grants from the Austrian Research Promotions Agency, either under funding agreements or under research incentive programs. In addition, we have received loans under funding agreements that bear interest at below market interest rate. We account for the grants received as other income and for the imputed benefits arising from the difference between a market rate of interest and the rate of interest as additional grant income, and record interest expense for the loans at a market rate of interest.

We participate in a research incentive program provided by the Austrian government under which we are entitled to reimbursement of a percentage of qualifying research and development expenses and capital expenditures incurred in Austria. Submissions for reimbursement under the program are submitted annually. Incentive amounts are generally paid out during the calendar year that follows the year of the expenses but remain subject to subsequent examinations by the responsible authority.

Interest Expense

Interest expense results primarily from loans under funding agreements with the Austrian Research Promotion Agency, recorded at a market rate of interest. The difference between interest payments payable pursuant to the loans, which rates are at below market interest rates, and the market interest rate, is accounted for as grant income.

Income Taxes

Income tax expense results from foreign minimum income tax and profit on a legal entity basis. The losses that we have incurred since inception result primary from the losses of our Austrian subsidiary. We have considered that, at this point in time, it is uncertain whether we will ever be able to realize the benefits of the deferred tax asset, and accordingly, have established a full valuation allowance as of September 30, 2021.

Results of Operations

Comparison of Three and Nine Months Ended September 30, 2021 and 2020

The following table summarizes our results of operations for the three and nine months ended September 30, 2021 and 2020 (in thousands):

	Three months ended September 30,				Nin	e months end	ed Sep	ed September 30,	
		2021		2020	020 2021			2020	
Revenue from collaboration and licensing	\$	3,874	\$	4,040	\$	14,553	\$	14,421	
Operating expenses:									
Research and development		(20,698)		(16,009)		(60,434)		(39,099)	
General and administrative		(4,342)		(4,437)		(13,746)		(13,413)	
Total operating expenses		(25,040)		(20,446)		(74,180)		(52,512)	
Loss from operations		(21,166)		(16,406)		(59,627)		(38,091)	
Other income (expense):									
Grant income		2,487		1,997		7,196		5,064	
Interest income		7		20		21		391	
Interest expense		(234)		(194)		(671)		(587)	
Other income and expenses, net		(1,133)		994		(1,348)		1,615	
Total other income (expense), net		1,127		2,817		5,198		6,483	
Net loss before tax		(20,039)		(13,589)		(54,429)		(31,608)	
Income tax expense		(1)		(0)		(1)		(0)	
Net loss	\$	(20,040)	\$	(13,589)	\$	(54,430)	\$	(31,608)	

Revenue from Collaboration and Licensing

Revenue was \$3.9 million and \$14.6 million for the three and nine months ended September 30, 2021, respectively and \$4.0 million and \$14.4 million for the three and nine months ended September 30, 2020, respectively.

Revenues for the three months ended September 30, 2021 did not materially change compared to the three months ended September 30, 2020 though they included lower deferred revenues from upfront and milestone payments which were partially offset by higher cost reimbursements.

For the three months ended September 30, 2021, revenue included \$3.7 million from reimbursement of research and development expenses, \$0.1 million from partial recognition of deferred revenue related to the upfront payment of \$10.0 million that we received in June 2018 and less than \$0.1 million from partial recognition of the \$4.0 million milestone payment that we received in 2020. In the three months ended September 30, 2021 we completed the recognition of the deferred revenue related to the upfront payment of \$10.0 million that we received in June 2018. For the three months ended September 30, 2020, revenue included \$2.8 million from reimbursement of research and development expenses, \$0.6 million from partial recognition of deferred revenue related to the upfront payment of

\$10.0 million that we received in June 2018 and \$0.6 million from partial recognition of the \$4.0 million milestone payment that we received in 2020.

The increase in revenue of \$0.2 million for the nine months ended September 30, 2021 compared to the nine months ended September 30, 2020 was primarily due to higher cost reimbursements of \$3.1 million received under the Collaboration Agreement with Gilead, partially offset by the prior-year-effect of a \$1.0 million milestone payment recognized in the nine months ended September 30, 2020 and \$1.9 million lower deferred revenues recognized related to the upfront and milestone payments compared to the nine months ended September 30, 2020.

For the nine months ended September 30, 2021, revenue included \$12.7 million from reimbursement of research and development expenses, \$0.6 million from partial recognition of deferred revenue related to the upfront payment of \$10.0 million that we received in June 2018 and \$1.3 million from partial recognition of the \$4.0 million milestone payment that we received in 2020. In the nine months ended September 30, 2021 we completed the recognition of the deferred revenue related to the upfront payment of \$10.0 million that we received in June 2018. For the nine months ended September 30, 2020, revenue included \$9.6 million from reimbursement of research and development expenses, \$2.0 million from partial recognition of deferred revenue related to the upfront payment of \$10.0 million that we received in June 2018 and \$1.8 million from partial recognition of the \$4.0 million milestone payment that we received in 2020, as well as \$1.0 million of revenue that was recognized upon the achievement of a research milestone in June 2020.

Research and Development Expenses

For the three and nine months ended September 30, 2021, our research and development expenses were \$20.7 million and \$60.4 million, respectively, compared to \$16.0 million and \$39.1 million for the three and nine months ended September 30, 2020.

The increase of \$4.7 million for the three months ended September 30, 2021 compared to the three months ended September 30, 2020 was due to an increase in direct research and development expenses of \$3.1 million, and an increase in internal R&D expenses of \$1.6 million.

The primary drivers of the increase in direct research and development expenses for the three months ended September 30, 2021 compared to the three months ended September 30, 2020 were an increase in manufacturing and quality control expenses of \$2.1 million, along with a general increase in other direct research and development expenses and laboratory expenses of \$1.6 million, partially offset by a decrease in expenses for clinical studies of \$0.6 million. The increase in manufacturing and quality control expenses as well as other direct research and development expenses was mainly due to the progress in our HB-201 and HB-202 clinical trial, in particular for monitoring and testing activities, and manufacturing and quality control work in preparation of a further extension of the trial. Clinical study expenses decreased primarily due to the completion of patient enrollment of the Phase 2 study for our CMV vaccine candidate HB-101.

The increase in internal research and development expenses for the three months ended September 30, 2021 compared to the three months ended September 30, 2020 was primarily due to an increase in personnel expenses and stock-based compensation by \$0.7 million and an increase in other expenses by \$0.9 million which were mainly related to our increased research and development headcount.

The increase in research and development expenses of \$21.3 million for the nine months ended September 30, 2021 compared to the nine months ended September 30, 2020 was due to an increase in direct research and development expenses of \$14.5 million, and an increase in internal research and development expenses of \$6.8 million.

The primary drivers of the increase in direct research and development expenses for the nine months ended September 30, 2021 compared to the nine months ended September 30, 2020 were an increase in manufacturing and quality control expenses of \$8.4 million, an increase in clinical study expenses of \$2.2 million, along with an increase in other direct expenses and laboratory expenses of \$3.9 million. The increase was mainly due to the progress in our HB-

201 and HB-202 clinical trial, particularly, the increased patient recruitment and related clinical trial monitoring and testing activities, as well as manufacturing and quality control work in preparation of a further extension of the trial. Manufacturing and quality control expenses were also driven by the progress towards clinical development in our Gilead partnered programs and other preclinical programs.

The increase in internal research and development expenses for the nine months ended September 30, 2021 compared to the nine months ended September 30, 2020 was primarily due to an increase in personnel expenses by \$4.0 million, and an increase in facility related and other internal research and development expenses by \$2.8 million. The increase in personnel-related research and development expenses resulted primarily from our increased research and development headcount and an increase in stock compensation expenses. Other internal research and development costs and facility related costs also increased as a result of our expansion of research and development activities and headcount.

The following table summarizes our research and development expenses by product candidate or program (in thousands):

	Three months ended September 30,			Nin	e months end	led September 30,		
		2021		2020		2021		2020
Direct research and development expenses by program:								
HB-101	\$	1,126	\$	2,494	\$	3,182	\$	4,744
HB-201/202		5,624		2,917		17,915		7,005
Gilead partnered programs ⁽¹⁾		2,832		2,674		9,031		6,171
Other and earlier-stage programs		4,050		2,287		9,335		6,340
Sub-total direct expenses		13,632		10,372		39,463		24,260
Internal research and development expenses:								
Personnel related (including stock-based								
compensation)		4,561		3,896		14,504		10,474
Facility related		665		573		2,078		1,619
Other internal costs		1,840		1,168		4,389		2,746
Sub-total internal expenses		7,066		5,637		20,971		14,839
Total research and development expenses	\$	20,698	\$	16,009	\$	60,434	\$	39,099

⁽¹⁾ Expenses incurred by us in connection with Gilead partnered programs are reimbursed to us by Gilead and accounted for as revenue in the same period.

General and Administrative Expenses

General and administrative expenses for the three months ended September 30, 2021 were \$4.3 million, compared to \$4.4 million for the three months ended September 30, 2020. The decrease of \$0.1 million was primarily due to a decrease in personnel-related expenses of less than \$0.1 million, and a decrease in professional and consulting fees of \$0.1 million. The decrease in personnel-related expenses resulted from decreased stock compensation expenses, partially offset by a growth in headcount along with increased salaries in our general and administrative functions.

General and administrative expenses for the nine months ended September 30, 2021 were \$13.7 million, compared to \$13.4 million for the nine months ended September 30, 2020. The increase of \$0.3 million was primarily due to an increase in personnel-related expenses of \$0.4 million, partially offset by a decrease in professional and consulting fees of \$0.1 million. The increase in personnel-related expenses resulted from a growth in headcount in our general and administrative functions and increased salaries, partially offset by a decrease in stock compensation expenses.

Grant Income

In the three months ended September 30, 2021 we recorded grant income of \$2.5 million, compared to \$2.0 million in the three months ended September 30, 2020. Income from grants mainly included research incentives and

imputed benefits from below market interest rates on loans from governmental agencies. The increase of \$0.5 million was primarily due to higher income from Austrian research and development incentives.

In the nine months ended September 30, 2021, we recorded grant income of \$7.2 million, compared to \$5.1 million in the nine months ended September 30, 2020. The increase of \$2.1 million was primarily due to higher income from Austrian research and development incentives.

Interest Income and Expense

Interest income was less than \$0.1 million for the three and nine months ended September 30, 2021, compared to interest income of less than \$0.1 million and \$0.4 million for the three and nine months ended September 30, 2020, respectively. The decrease in the three and nine month ended September 30, 2021, despite higher cash balances, was due to the drop in interest rates in the United States and Europe. Interest income represents interest from cash and cash equivalents held in US dollars resulting from the proceeds from the issuance of common and preferred stock as well as payments received under our Collaboration Agreement with Gilead. During the three and nine months ended September 30, 2021 our cash, cash equivalents and restricted cash were mainly held in dollars at U.S. investment grade financial institutions or in money market funds. In addition, smaller amounts were held in euros at our Austrian subsidiary that produced no material interest income due the low or zero interest rate policy in the European Monetary Union.

Interest expenses for loans from government agencies were \$0.2 million for the three months ended September 30, 2021, compared to interest expenses of \$0.2 million for the three months ended September 30, 2020. Interest expenses for loans from government agencies were \$0.7 million for the nine months ended September 30, 2021, compared to \$0.6 million for the nine months ended September 30, 2020. Interest expense was recorded at the market rate of interest, which exceeded the contractual interest.

Other Income and Expenses

Other expenses were \$1.1 million for the three months ended September 30, 2021, compared to other income of \$1.0 million for the three months ended September 30, 2020. The decrease in the three months ended September 30, 2021 resulted primarily from exchange rate differences and foreign currency remeasurements.

Other expenses were \$1.3 million for the nine months ended September 30, 2021, compared to other income of \$1.6 million for the nine months ended September 30, 2020. The decrease in the nine months ended September 30, 2021 resulted primarily from exchange rate differences and foreign currency remeasurements. In addition, in April 2020, we applied for support under the Corona Short-term Work Program in Austria to mitigate the financial impact of the COVID-19 pandemic. In the nine months ended September 30, 2020, we recognized \$0.2 million in other operating income from non-refundable subsidies under this support program which contributed to the decrease of other income and expenses in the nine months ended September 30, 2021.

Liquidity and Capital Resources

Since our inception in 2011, we have funded our operations primarily through private placements of our convertible preferred stock and proceeds from our IPO and follow-on public offering, from grants, research incentives and borrowings under various agreements with public funding agencies, and from an upfront payment, milestone payments and reimbursement of research and development expenses pursuant to the Collaboration Agreement with Gilead.

We have raised gross proceeds of approximately \$142.5 million from the issuance of our convertible preferred stock and \$22.2 million from non-refundable upfront and milestone payments pursuant to the Collaboration Agreement with Gilead. In April 2019, we completed our IPO in which we issued and sold 6,000,000 shares of our common stock, at \$14.00 per share, for gross proceeds of \$84.0 million, or net proceeds of \$74.6 million. On December 11, 2020, we completed a follow-on public offering in which we issued 3,910,000 shares of our common stock, at \$11.75 per share, and 2,978 shares of our Series A convertible preferred stock, at \$11,750.00 per share, for net proceeds of \$75.0 million

after deducting underwriting discounts and commissions and offering expenses. As of September 30, 2021, the principal amount outstanding under loans from government agencies was \$6.2 million and we had cash, cash equivalents and restricted cash of \$82.7 million.

We entered into various funding agreements with the Austrian Research Promotion Agency, (Österreichische Forschungsförderungsgesellschaft, or FFG). The loans by FFG, or the FFG Loans, were made on a project-by-project basis and bear interest at rates ranging from 0.75% to 1.0% per annum. In the event that the underlying program research results in a scientific or technical failure, the principal then outstanding under any loan may be forgiven by FFG and converted to non-repayable grant funding on a project-by-project basis. The FFG Loans contain no financial covenants and are not secured by any of our assets.

Because the FFG Loans bear interest at below market rates we account for the imputed benefit arising from the difference between an estimated market rate of interest and the contractual interest rate as grant funding from FFG, which is included in grant income. On the date that FFG Loan proceeds are received, we recognize the portion of the loan proceeds allocated to grant funding as a discount to the carrying value of the loan and as unearned income. As of September 30, 2021, the unamortized debt discount related to FFG Loans was \$1.3 million.

We do not expect positive cash flows from operations in the foreseeable future, if at all. Historically, we have incurred operating losses as a result of ongoing efforts to develop our arenavirus technology platform and our product candidates, including conducting ongoing research and development, preclinical studies, clinical trials, providing general and administrative support for these operations and developing our intellectual property portfolio. We expect to continue to incur net operating losses for at least the next several years as we progress clinical development, seek regulatory approval, prepare for and, if approved, proceed to commercialization of our most advanced product candidates HB-101, HB-201 and HB-202, continue our research and development efforts relating to our other and future product candidates, and invest in our manufacturing capabilities and our own manufacturing facility.

Future Funding Requirements

We have no products approved for commercial sale. To date, we have devoted substantially all of our resources to organizing and staffing our company, business planning, raising capital, undertaking preclinical studies and clinical trials of our product candidates. As a result, we are not profitable and have incurred losses in each period since our inception in 2011. As of September 30, 2021, we had an accumulated deficit of \$201.5 million. We expect to continue to incur significant losses for the foreseeable future. We anticipate that our expenses will increase substantially as we:

- pursue the clinical and preclinical development of our current and future product candidates;
- leverage our technologies to advance product candidates into preclinical and clinical development;
- seek regulatory approvals for product candidates that successfully complete clinical trials, if any;
- attract, hire and retain additional clinical, quality control and scientific personnel;
- establish our manufacturing capabilities through third parties or by ourselves and scale-up manufacturing to provide adequate supply for clinical trials and commercialization;
- expand our operational, financial and management systems and increase personnel, including personnel to support our clinical development, manufacturing and commercialization efforts and our operations as a public company;
- expand and protect our intellectual property portfolio;
- establish a sales, marketing, medical affairs and distribution infrastructure to commercialize any products for which we may obtain marketing approval and intend to commercialize on our own or jointly;

- acquire or in-license other product candidates and technologies; and
- incur additional legal, accounting and other expenses in operating our business, including ongoing costs associated with operating as a public company.

Even if we succeed in commercializing one or more of our product candidates, we will continue to incur substantial research and development and other expenditures to develop and market additional product candidates. 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 future growth of our expenses and our ability to generate revenue. Our prior losses and expected future losses have had and will continue to have an adverse effect on our stockholders' equity and working capital.

We will require substantial additional financing and a failure to obtain this necessary capital could force us to delay, limit, reduce or terminate our product development programs, commercialization efforts or other operations.

Since our inception, we have invested a significant portion of our efforts and financial resources in research and development activities for our non-replicating and replicating technologies and our product candidates derived from these technologies. Preclinical studies and clinical trials and additional research and development activities will require substantial funds to complete. We believe that we will continue to expend substantial resources for the foreseeable future in connection with the development of our current product candidates and programs as well as any future product candidates we may choose to pursue, as well as the gradual gaining of control over our required manufacturing capabilities and other corporate uses. These expenditures will include costs associated with conducting preclinical studies and clinical trials, obtaining regulatory approvals, and manufacturing and supply, as well as marketing and selling any products approved for sale. In addition, other unanticipated costs may arise. Because the outcome of any preclinical study or clinical trial is highly uncertain, we cannot reasonably estimate the actual amounts necessary to successfully complete the development and commercialization of our current or future product candidates.

Our future capital requirements depend on many factors, including:

- the scope, progress, results and costs of researching and developing our current and future product candidates and programs, and of conducting preclinical studies and clinical trials;
- the number and development requirements of other product candidates that we may pursue, and other indications for our current product candidates that we may pursue;
- the stability, scale and yields of our future manufacturing process as we scale-up production and formulation of our product candidates for later stages of development and commercialization;
- the timing of, and the costs involved in, obtaining regulatory and marketing approvals and developing our ability
 to establish sales and marketing capabilities, if any, for our current and future product candidates we develop if
 clinical trials are successful;
- the success of our collaboration with Gilead;
- our ability to establish and maintain collaborations, strategic licensing or other arrangements and the financial terms of such agreements;
- the cost of commercialization activities for our current and future product candidates that we may develop, whether alone or with a collaborator;
- 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 future products, if any; and
- the emergence of competing oncology and infectious disease therapies and other adverse market developments.

A change in the outcome of any of these or other variables with respect to the development of any of our current and future product candidates could significantly change the costs and timing associated with the development of that product candidate. Furthermore, our operating plans may change in the future, and we will need additional funds to meet operational needs and capital requirements associated with such operating plans.

We do not have any committed external source of funds or other support for our development efforts. Until we can generate sufficient product and royalty revenue to finance our cash requirements, which we may never do, we expect to finance our future cash needs through a combination of public or private equity offerings, debt financings, collaborations, strategic alliances, licensing arrangements and other marketing or distribution arrangements as well as grant funding. Based on our research and development plans, we expect that our existing cash and cash equivalents, will enable us to fund our operating expenses and capital expenditure requirements for at least the next 12 months. These estimates are based on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we expect.

If we raise additional capital through marketing and distribution arrangements or other collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish certain valuable rights to our product candidates, technologies, future revenue streams or research programs or grant licenses on terms that may not be favorable to us. If we raise additional capital through public or private equity offerings, the terms of these securities may include liquidation or other preferences that adversely affect our stockholders' rights. Further, to the extent that we raise additional capital through the sale of common stock or securities convertible or exchangeable into common stock, the ownership interest of our shareholders will be diluted. If we raise additional capital through debt financing, we would be subject to fixed payment obligations and may be subject to covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we are unable to obtain additional funding on favorable terms when needed, we may have to delay, reduce the scope of or terminate one or more of our research and development programs or clinical trials.

Cash Flows

The following table sets forth a summary of the primary sources and uses of cash (in thousands):

	Nine months ended September 30,				
		2021	2020		
Net cash used in operating activities	\$	(52,773)	\$	(28,038)	
Net cash used in investing activities		(7,440)		(1,866)	
Net cash provided by (used in) financing activities		175		(1,656)	
Net increase (decrease) in cash and cash equivalents		(60,038)		(31,560)	

Cash Used in Operating Activities

During the nine months ended September 30, 2021, cash used in operating activities was \$52.8 million, which consisted of a net loss of \$54.4 million, adjusted by non-cash charges of \$9.3 million and cash used due to changes in our operating assets and liabilities of \$7.7 million. The non-cash charges consisted primarily of stock-based compensation of \$5.9 million and depreciation and amortization expense of \$3.4 million. The change in our operating assets and liabilities was primarily due to an increase in prepaid expenses and other current assets of \$12.1 million, a decrease in deferred revenues of \$2.0 million, a decrease in operating lease liabilities of \$1.4 million, an increase in other non-current assets of \$0.4 million, partially offset by an increase in accrued expenses and other liabilities of \$5.3 million, a decrease in accounts receivable of \$2.8 million, and an increase in accounts payable of \$0.5 million.

During the nine months ended September 30, 2020, cash used in operating activities was \$28.0 million, which consisted of a net loss of \$31.6 million, adjusted by non-cash charges of \$9.4 million and cash used due to changes in our operating assets and liabilities of \$5.8 million. The non-cash charges consisted primarily of stock-based compensation of \$6.4 million, depreciation and amortization expense of \$1.5 million and operating lease expenses of \$1.5 million. The change in our operating assets and liabilities was primarily due an increase in prepaid expenses and other current assets of \$6.6 million, a decrease in operating lease liabilities of \$1.4 million, an increase in accounts receivable of \$1.2 million, an increase in other assets of \$0.1 million and a decrease in other non-current liabilities of \$0.1 million, partially offset by an increase in accounts payable of \$2.0 million, an increase of accrued expenses and other current liabilities of \$1.4 million and an increase in deferred revenues of \$0.2 million.

Cash Used in Investing Activities

During the nine months ended September 30, 2021, cash used in investing activities was \$7.4 million. The increase of \$5.5 million compared to the nine months ended September 30, 2020 resulted from capital expenditures in connection with our own GMP manufacturing facility project and was partially offset by lower expenditures for laboratory and office space extension and purchase of equipment.

During the nine months ended September 30, 2020, cash used in investing activities was \$1.9 million and resulted from capital expenditures in connection with an expansion of our laboratory and office space and purchase of property and equipment.

Cash Provided by (Used in) Financing Activities

During the nine months ended September 30, 2021, cash provided by financing activities was \$0.2 million and consisted primarily of proceeds from the exercise of stock options, partially offset by payments related to finance leases.

During the nine months ended September 30, 2020, cash used for financing activities was \$1.7 million and resulted primarily from the repayment of a loan and payments associated with our shelf registration statement and our ATM-facility.

Off-Balance Sheet Arrangements

We did not have during the periods presented and we do not currently have any off-balance sheet arrangements, as defined in the rules and regulations of the SEC.

Contractual Obligations and Commitments

The following table summarizes our contractual obligations as of September 30, 2021 (in thousands):

	Payments Due by Calendar Year									
		Total	Less Than 1 Year		1 - 3 Years		4 - 5 Years		More than 5 Years	
Lease commitments	\$	4,592	\$	1,994	\$	2,598	\$		\$	_
CMO commitments		10,448		7,165		3,252		31		_
Debt obligations		6,213		3,124		3,089		_		_
Total	\$	21,253	\$	12,283	\$	8,939	\$	31	\$	_

The contractual obligations table does not include any potential contingent payments upon the achievement by us of specified clinical, regulatory and commercial events, as applicable, or patent prosecution or royalty payments we may be required to make under license agreements we have entered into because the timing and likelihood of these contingent payments are not known.

We enter into contracts in the normal course of business with CROs for clinical trials, preclinical research studies and testing, manufacturing and other services and products for operating purposes. These contracts generally provide for termination upon notice, and therefore we believe that our non-cancellable obligations under these agreements are not material.

Critical Accounting Policies

Our management's discussion and analysis of our financial condition and results of operations is based on our condensed consolidated financial statements, which we have prepared in accordance with the rules and regulations of the SEC, and generally accepted accounting principles in the United States, or GAAP. The preparation of these condensed consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported expenses during the reporting periods. We evaluate our estimates and judgments on an ongoing basis. We base our estimates on historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Our actual results may differ from these estimates under different assumptions or conditions.

Our critical accounting policies and the methodologies and assumptions we apply under them have not materially changed, as compared to those disclosed in "Management's Discussion and Analysis of Financial Condition and Results of Operations - Critical Accounting Policies" in our Annual Report on Form 10-K for the year ended December 31, 2020 filed with the SEC on March 18, 2021.

Recently Issued Accounting Pronouncements

A description of recently issued accounting pronouncements that may potentially impact our financial position and results of operations is disclosed in Note 2 to our condensed consolidated financial statements appearing in this Form 10-Q.

Emerging Growth Company Status and Smaller Reporting Company

As an "emerging growth company," the Jumpstart Our Business Startups Act of 2012 allows us to delay adoption of new or revised accounting standards applicable to public companies until such standards are made applicable to private companies. However, we have irrevocably elected not to avail ourselves of this extended transition period for complying with new or revised accounting standards and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

We are also a "smaller reporting company" meaning that the market value of our stock held by non-affiliates is less than \$700 million and our annual revenue was less than \$100 million during our most recently completed fiscal year. We may continue to be a smaller reporting company if either (i) the market value of our stock held by non-affiliates is less than \$250 million or (ii) our annual revenue was less than \$100 million during the most recently completed fiscal year and the market value of our stock held by non-affiliates is less than \$700 million. If we are a smaller reporting company at the time we cease to be an emerging growth company, we may continue to rely on exemptions from certain disclosure requirements that are available to smaller reporting companies. For so long as we remain a smaller reporting company, we are permitted and intend to rely on exemptions from certain disclosure and other requirements that are applicable to other public companies that are not smaller reporting companies.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

We are subject to the risk of fluctuations in foreign currency exchange rates, specifically with respect to the euro. Our functional currency is the U.S. dollar and the functional currency of our wholly owned foreign subsidiary, Hookipa Biotech GmbH, is the euro. Our cash, cash equivalents and restricted cash as of September 30, 2021 included small amounts of cash balances held by Hookipa Biotech GmbH in euro. We are exposed to market risk related to changes in interest rates. We had cash, cash equivalents and restricted cash of \$82.7 million as of September 30, 2021,

which included account balances with foreign banks. Interest income is sensitive to changes in the general level of interest rates; however, due to the nature of these investments, we do not believe that we have any material exposure to changes in the fair value of our investment portfolio as a result of changes in interest rates.

Item 4. Controls and Procedures.

The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, refers to controls and procedures that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure.

In designing and evaluating our disclosure controls and procedures, management recognizes that any 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 judgment in evaluating the benefits of possible controls and procedures relative to their costs.

Evaluation of Disclosure Controls and Procedures

As of September 30, 2021, management, with the participation of our Principal Executive Officer and Principal Financial and Accounting Officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act of 1934). Our disclosure controls and procedures are designed to ensure that information required to be disclosed 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 the Chief Executive Officer and the Chief Financial and Accounting Officer, to allow timely decisions regarding required disclosures.

Any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objective and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on that evaluation, our Principal Executive Officer and Principal Financial Officer concluded that our disclosure controls and procedures were effective at a reasonable assurance level as of September 30, 2021.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting (as defined in Rules 13a 15(f) and 15d 15(f) under the Exchange Act) identified that occurred during the three months ended September 30, 2021 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II—OTHER INFORMATION

Item 1. Legal Proceedings.

In April 2021, a third party opposed European Patent No. 3218504, or the EP '504 Patent, which was granted to the University of Geneva in July 2020 and is exclusively licensed to us. While the opposition was filed in the name and on behalf of Dr. Ursula Sprenzel, we believe that the real party in interest has not identified itself. The patent is directed to our replicating arenavirus platform technology and is part of our strategy to protect current product candidates based on this platform technology, including our lead oncology product candidates HB-201 and HB-202. We filed our formal response to the opposition with the European Patent Office (EPO) on September 3, 2021. It is expected that the EPO's opposition division will issue a preliminary opinion in the next six months, and summons the parties to oral proceedings within the next nine to twelve months.

From time to time, we may become involved in other litigation or legal proceedings relating to claims arising from the ordinary course of business.

Item 1A. Risk Factors.

There have been no material changes from the risk factors disclosed in our Annual Report on Form 10-K filed with the SEC on March 18, 2021.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.

There were no unregistered sales of equity securities by us during the nine months ended September 30, 2021.

Item 3. Defaults upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

None.

Item 6. Exhibits.

The exhibits listed on the Exhibit Index immediately preceding such exhibits, which is incorporated herein by reference, are filed or furnished as part of this Quarterly Report on Form 10-Q.

Exhibit Number	Description
31.1	Certificate of Principal Executive Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2	Certificate of Principal Financial Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1*	Certificate of Principal Executive Officer and Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes Oxley Act of 2002
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

^{*} The certification furnished in Exhibit 32.1 hereto is deemed to accompany this Quarterly Report on Form 10-Q and will not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, except to the extent that the Registrant specifically incorporates it by reference. Such certification will not be deemed to be incorporated by reference into any filings under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, except to the extent that the Registrant specifically incorporates it by reference.

SIGNATURES

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

HOOKIPA Pharma Inc.

Date: November 10, 2021 By:/s/ Joern Aldag

Joern Aldag

Chief Executive Officer (Principal Executive Officer)

By:/s/ Reinhard Kandera

Reinhard Kandera

Chief Financial Officer (Principal Financial and

Accounting Officer)

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER PURSUANT TO RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934, AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

- I, Joern Aldag, certify that:
- 1. I have reviewed this Quarterly Report on Form 10-Q of HOOKIPA Pharma Inc.;
- 2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not 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 in 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(s) 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 accounting 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(s) 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.

Dated: November 10, 2021 /s/ Joern Aldag

Joern Aldag Chief Executive Officer (Principal Executive Officer)

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER PURSUANT TO RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934, AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

- I, Reinhard Kandera, certify that:
- 1. I have reviewed this Quarterly Report on Form 10-Q of HOOKIPA Pharma Inc.;
- 2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not 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 in 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(s) 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 accounting 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(s) 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.

Dated: November 10, 2021 /s/ Reinhard Kandera

Reinhard Kandera Chief Financial Officer (Principal Financial and Accounting Officer)

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of HOOKIPA Pharma Inc. (the "Company") on Form 10-Q for the quarterly period ended September 30, 2021 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, hereby certify, that to the best of their knowledge:

(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.

Dated: November 10, 2021 /s/ Joern Aldag

Joern Aldag

Chief Executive Officer (Principal Executive Officer)

Dated: November 10, 2021 /s/ Reinhard Kandera

Reinhard Kandera Chief Financial Officer

(Principal Financial and Accounting Officer)