REFINITIV

DELTA REPORT

10-Q

IRWD - IRONWOOD PHARMACEUTICALS

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

The following comparison report has been automatically generated

TOTAL DELTAS	1012
CHANGES	276
DELETIONS	231
ADDITIONS	505

REFINITIV

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-Q

(Mark One)

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

For the quarterly period ended June September 30, 2023

OR

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

For the transition period from to

Commission file number: 001-34620

IRONWOOD PHARMACEUTICALS, INC.

(Exact name of registrant as specified in its charter)

Delaware	**04-3404176**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification Number)

100 Summer Street, Suite 2300 **Boston, Massachusetts**	**02110**
(Address of Principal Executive Offices)	(Zip Code)

(617) 621-7722

(Registrant's telephone number, including area code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Class A common stock, $0.001 par value	IRWD	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. Yes ☐ No ☐

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large Accelerated Filer ☐	Accelerated Filer ☐
Non-accelerated Filer ☐	Smaller Reporting Company ☐
	Emerging Growth Company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

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

As of July 31, 2023 October 31, 2023, there were 156,029,186 156,129,046 shares of Class A common stock outstanding.

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NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q contains forward-looking statements that involve risks, uncertainties, and assumptions. All statements contained in this Quarterly Report on Form 10-Q other than statements of historical fact are forward-looking statements. Forward-looking statements include statements regarding our future financial position, business strategy, budgets, projected costs, plans and objectives of management for future operations. The words "may," "continue," "estimate," "intend," "plan," "will," "believe," "project," "expect," "seek," "anticipate," "could," "should," "target," "goal," "potential" and similar expressions may identify forward-looking statements, but the absence of these words does not necessarily mean that a statement is not forward-looking. These forward-looking statements include, among other things, statements about the demand and market potential for our products in the countries where they are approved for marketing, as well as the revenues therefrom; the timing, investment and associated activities involved in commercializing LINZESS® by us and AbbVie Inc. in the U.S.; the commercialization of CONSTELLA® in Europe and LINZESS in Japan and China, as well as our expectations regarding revenue generated from our partners; the timing, investment and associated activities involved in developing, obtaining regulatory approval for, launching, and commercializing our products and product candidates by us and our partners worldwide; our ability and the ability of our partners to secure and maintain adequate reimbursement for our products; our expectations regarding U.S. and foreign regulatory requirements for our products and our product candidates, including our post-approval development and regulatory requirements; the ability of our product candidates to meet existing or future regulatory standards; the safety profile and related adverse events of our products and our product candidates; the therapeutic benefits and effectiveness of our products and our product candidates and the potential indications and market opportunities therefor; our ability and the ability of our partners to perform our respective obligations under our collaboration, license and other agreements, and our ability to achieve milestone and other payments under such agreements; our plans with respect to the development, manufacture or sale of our product candidates and the associated timing thereof, including the design and results of pre-clinical and clinical studies; our expectations with respect to the acquisition of VectivBio Holding AG, and the costs and timing related thereto; the timing, progress and results of clinical trials for apraglutide; the in-licensing or acquisition of externally discovered businesses, products or technologies, or other strategic transactions, as well as partnering arrangements, including expectations relating to the completion of, or the realization of the expected benefits from, such strategic transactions; our expectations with respect to our option to acquire an exclusive license from COUR Pharmaceutical Development Company, Inc., to research, develop, manufacture and commercialize in the U.S., products containing CNP-104 for the treatment of primary biliary cholangitis and the timing related and expected usefulness thereof;

our expectations as to future financial performance, revenues, expense levels, payments, cash flows, profitability, tax obligations, capital raising and liquidity sources, and real estate needs, as well as the timing and drivers thereof, and internal control over financial reporting; our expectations as to the timing of and the costs and restructuring expenses related to our workforce reductions; and our ability to repay our outstanding indebtedness when due, or redeem or repurchase all or a portion of such debt, as well as the potential benefits of the capped call transactions described herein.

Any or all of our forward-looking statements in this Quarterly Report on Form 10-Q may turn out to be inaccurate. These forward-looking statements may be affected by inaccurate assumptions or by known or unknown risks and uncertainties, including those related to the effectiveness of development and commercialization efforts by us and our partners; preclinical and clinical development, manufacturing and formulation development of linaclotide, apraglutide, CNP-104 and our other product candidates; the risk that clinical programs and studies may not progress or develop as anticipated, including that studies are delayed or discontinued for any reason, such as safety, tolerability, enrollment, manufacturing, economic or other reasons; the risk that findings from our completed nonclinical and clinical studies may not be replicated in later studies; the risk that we or our partners are unable to obtain, maintain or manufacture sufficient LINZESS or our product candidates, or otherwise experience difficulties with respect to supply or manufacturing; the efficacy, safety and tolerability of linaclotide and our product candidates; the risk that the therapeutic opportunities for LINZESS or our product candidates are not as we expect; decisions by regulatory and judicial authorities; the risk we may never get additional patent protection for linaclotide and other product candidates, that patents for linaclotide or other products may not provide adequate protection from competition, or that we are not able to successfully protect such patents; the risk that we are unable to manage our expenses or cash use, or are unable to commercialize our products as expected; the risk that we may elect to not exercise our option to acquire the exclusive license for CNP-104; the risk that the development of either apraglutide, CNP-104 and/or IW-3300 is not successful or that any of our product candidates is not successfully commercialized; outcomes in legal proceedings to protect or enforce the patents relating to our products and product candidates, including abbreviated new drug application litigation; the risk that financial and operating results may differ from our projections; developments in the intellectual property landscape; challenges from and rights of competitors or potential competitors; the risk that our planned

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investments do not have the anticipated effect on our company revenues; developments in accounting guidance or

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practice; Ironwood's or AbbVie's accounting practices, including reporting and settlement practices as between Ironwood and AbbVie; the risk that we are unable to manage our expenses or cash use, or are unable to commercialize our products as expected; the risks related to VectivBio Holding AG and our acquisition of VectivBio Holding AG; the risks related to our increased indebtedness; the impact of the COVID-19 pandemic; and the additional risks identified under the heading "Part I, Item 1A—Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2022, which was filed with the U.S. Securities and Exchange Commission, or the SEC, on February 16, 2023, and under the heading "Risk Factors" in this Quarterly Report on Form 10-Q. 10-Q, filed with the SEC on August 9, 2023. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this Quarterly Report on Form 10-Q may not occur as contemplated, and actual results could differ materially from those anticipated or implied by the forward-looking statements.

You should not unduly rely on these forward-looking statements, which speak only as of the date of this Quarterly Report on Form 10-Q. Unless required by law, we undertake no obligation to publicly update or revise any forward-looking statements to reflect new

information or future events or otherwise. You should, however, review the factors and risks we describe in the reports we will file from time to time with the SEC after the date of this Quarterly Report on Form 10-Q.

NOTE REGARDING TRADEMARKS

LINZESS® and CONSTELLA® are trademarks of Ironwood Pharmaceuticals, Inc. Any other trademarks referred to in this Quarterly Report on Form 10-Q are the property of their respective owners. All rights reserved.

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IRONWOOD PHARMACEUTICALS, INC.
QUARTERLY REPORT ON FORM 10-Q
FOR THE QUARTER ENDED JUNE SEPTEMBER 30, 2023
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PART I — FINANCIAL INFORMATION

Item 1. ***Financial Statements***

Ironwood Pharmaceuticals, Inc.
Condensed Consolidated Balance Sheets
(In thousands, except share and per share amounts)
(unaudited)

	June 30, 2023	December 31, 2022
ASSETS		
Current assets:		
Cash and cash equivalents	$ 175,321	$ 656,203
Accounts receivable, net	118,990	115,458
Prepaid expenses and other current assets	22,500	7,715
Restricted cash	788	1,250
Total current assets	317,599	780,626
Restricted cash, net of current portion	510	485
Accounts receivable, net of current portion	—	14,589
Property and equipment, net	5,876	6,288
Operating lease right-of-use assets	13,319	14,023
Intangible assets, net	4,096	—
Deferred tax assets	257,900	283,661
Other assets	3,920	847
Total assets	$ 603,220	$ 1,100,519
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 3,505	$ 483
Accrued research and development costs	20,122	5,258
Accrued expenses and other current liabilities	79,585	16,700
Current portion of operating lease liabilities	3,095	3,065
Current portion of convertible senior notes	199,083	—
Note hedge warrants	—	19
Total current liabilities	305,390	25,525
Operating lease obligations, net of current portion	15,598	16,599
Convertible senior notes, net of current portion	197,974	396,251
Revolving credit facility	400,000	—
Other liabilities	31,035	9,766
Commitments and contingencies		
Ironwood Pharmaceuticals, Inc. Stockholders' equity:		
Preferred stock, $0.001 par value, 75,000,000 shares authorized, no shares issued and outstanding	—	—
Class A Common Stock, $0.001 par value, 500,000,000 shares authorized and 156,027,648 shares issued and outstanding at June 30, 2023 and 500,000,000 shares authorized and 154,026,949 shares issued and outstanding at December 31, 2022	156	154
Additional paid-in capital	1,366,989	1,348,600
Accumulated deficit	(1,712,849)	(696,376)
Total Ironwood Pharmaceuticals, Inc. stockholders' equity (deficit)	(345,704)	652,378
Noncontrolling interests	(1,073)	—

Total stockholders' equity (deficit)	(346,777)	652,378
Total liabilities and stockholders' equity	$ 603,220	$ 1,100,519

	September 30, 2023	December 31, 2022
ASSETS		
Current assets:		
Cash and cash equivalents	$ 110,164	$ 656,203
Accounts receivable, net	124,546	115,458
Prepaid expenses and other current assets	18,112	7,715
Restricted cash	788	1,250
Total current assets	253,610	780,626
Restricted cash, net of current portion	510	485
Accounts receivable, net of current portion	—	14,589
Property and equipment, net	5,630	6,288
Operating lease right-of-use assets	12,956	14,023
Intangible assets, net	3,889	—
Deferred tax assets	243,645	283,661
Other assets	3,823	847
Total assets	$ 524,063	$ 1,100,519
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 4,698	$ 483
Accrued research and development costs	10,735	5,258
Accrued expenses and other current liabilities	62,714	16,700
Current portion of operating lease liabilities	3,111	3,065
Current portion of convertible senior notes	199,321	—
Note hedge warrants	—	19
Total current liabilities	280,579	25,525
Operating lease obligations, net of current portion	15,074	16,599
Convertible senior notes, net of current portion	198,141	396,251
Revolving credit facility	325,000	—
Other liabilities	30,948	9,766
Commitments and contingencies		
Ironwood Pharmaceuticals, Inc. Stockholders' equity:		
Preferred stock, $0.001 par value, 75,000,000 shares authorized, no shares issued and outstanding	—	—
Class A Common Stock, $0.001 par value, 500,000,000 shares authorized and 156,125,676 shares issued and outstanding at September 30, 2023 and 500,000,000 shares authorized and 154,026,949 shares issued and outstanding at December 31, 2022	156	154
Additional paid-in capital	1,374,908	1,348,600
Accumulated deficit	(1,697,528)	(696,376)
Accumulated other comprehensive income (loss)	(752)	—
Total Ironwood Pharmaceuticals, Inc. stockholders' equity (deficit)	(323,216)	652,378
Noncontrolling interests	(2,463)	—
Total stockholders' equity (deficit)	(325,679)	652,378
Total liabilities and stockholders' equity	$ 524,063	$ 1,100,519

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

Ironwood Pharmaceuticals, Inc.
Condensed Consolidated Statements of Income (Loss) and Comprehensive Income (Loss)
(In thousands, except per share amounts)
(unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,		Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022	2023	2022	2023	2022
Revenues:								
Collaborative arrangements revenue	$ 107,382	$ 97,231	$ 211,443	$ 194,760	$113,739	$108,637	$ 325,182	$303,397
Total revenues	107,382	97,231	211,443	194,760	113,739	108,637	325,182	303,397
Costs and expenses:								
Research and development	34,577	11,452	47,424	22,274	32,985	11,545	80,409	33,819
Selling, general and administrative	52,484	30,124	83,601	58,985	36,046	28,619	119,647	87,604
Restructuring expenses	13,011	—	13,011	—	4,685	—	17,696	—
Acquired in-process research and development	1,090,449	—	1,090,449	—	—	—	1,090,449	—
Total costs and expenses	1,190,521	41,576	1,234,485	81,259	73,716	40,164	1,308,201	121,423
Income (loss) from operations	(1,083,139)	55,655	(1,023,042)	113,501	40,023	68,473	(983,019)	181,974
Other income (expense):								
Interest expense and other financing costs	(1,840)	(2,207)	(3,367)	(4,548)	(9,839)	(1,524)	(13,206)	(6,072)
Interest and investment income	8,757	1,018	16,029	1,248	1,748	2,807	17,777	4,055
Gain (loss) on derivatives	—	(681)	19	49				
Gain on derivatives					—	151	19	200
Other income (expense), net	6,917	(1,870)	12,681	(3,251)	(8,091)	1,434	4,590	(1,817)
Income (loss) before income taxes	(1,076,222)	53,785	(1,010,361)	110,250	31,932	69,907	(978,429)	180,157
Income tax expense	(13,256)	(16,705)	(33,403)	(34,369)	(17,982)	(19,590)	(51,385)	(53,959)
Net income (loss) and comprehensive income (loss)	(1,089,478)	37,080	(1,043,764)	75,881				
Less: Net income (loss) and comprehensive income (loss) attributable to noncontrolling interests	(27,291)	—	(27,291)	—				
Net income (loss) and comprehensive income (loss) attributable to Ironwood Pharmaceuticals, Inc.	$ (1,062,187)	$ 37,080	$ (1,016,473)	$ 75,881				
Net income (loss)					13,950	50,317	(1,029,814)	126,198
Less: Net income (loss) attributable to noncontrolling interests					(1,371)	—	(28,662)	—
Net income (loss) attributable to Ironwood Pharmaceuticals, Inc.					$ 15,321	$ 50,317	$(1,001,152)	$126,198
Net income (loss) per share attributable to Ironwood Pharmaceuticals, Inc. shareholders —basic	$ (6.84)	$ 0.24	$ (6.56)	$ 0.49	$ 0.10	$ 0.33	$ (6.45)	$ 0.82

Net income (loss) per share attributable to Ironwood Pharmaceuticals, Inc. shareholders—diluted	$ (6.84)	$ 0.21	$ (6.56)	$ 0.42	$ 0.09	$ 0.28	$ (6.45)	$ 0.69
Weighted average shares used in computing net income (loss) per share attributable to Ironwood Pharmaceuticals, Inc. shareholders—basic:	155,367	153,304	154,912	155,550	155,886	153,066	155,240	154,713
Weighted average shares used in computing net income (loss) per share attributable to Ironwood Pharmaceuticals, Inc. shareholders—diluted:	155,367	184,876	154,912	187,315	186,891	184,465	155,240	186,504

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

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Ironwood Pharmaceuticals, Inc.
Condensed Consolidated Statements of Comprehensive Income (Loss)
(In thousands, except per share amounts)
(unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022
Net income (loss) attributable to Ironwood Pharmaceuticals, Inc.	$ 15,321	$ 50,317	$ (1,001,152)	$ 126,198
Other comprehensive loss, net of tax:				
Currency translation adjustment	(307)	—	(307)	—
Defined benefit pension plan	(464)	—	(464)	—
Total other comprehensive loss, net of tax	(771)	—	(771)	—
Less: Other comprehensive loss attributable to noncontrolling interest	(19)	—	(19)	—
Comprehensive income (loss) attributable to Ironwood Pharmaceuticals, Inc.	$ 14,569	$ 50,317	$ (1,001,904)	$ 126,198

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

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Ironwood Pharmaceuticals, Inc.
Condensed Consolidated Statements of Stockholders' Equity (Deficit)
(In thousands, except share amounts)
(unaudited)

	Class A Common Stock		Additional paid-in capital	Accumulated deficit	Total Ironwood Pharmaceuticals, Inc. Stockholders' equity (deficit)	Noncontrolling Interests	Total Stockholders' equity (deficit)
	Shares	Amount					
Balance at December 31, 2022	154,026,949	$ 154	$1,348,600	$ (696,376)	$ 652,378	$ —	$ 652,378
Issuance of common stock related to share-based awards	1,319,154	1	1,628	—	1,629	—	1,629
Share-based compensation expense related to share-based awards and employee stock purchase plan	—	—	7,131	—	7,131	—	7,131
Net income	—	—	—	45,714	45,714	—	45,714
Balance at March 31, 2023	155,346,103	$ 155	$1,357,359	$ (650,662)	$ 706,852	$ —	$ 706,852
Issuance of common stock related to share-based awards and employee stock purchase plan	681,545	1	1,365	—	1,366	—	1,366
Share-based compensation expense related to share-based awards and employee stock purchase plan	—	—	8,265	—	8,265	—	8,265
Non-controlling interests on acquisition of VectivBio Holding AG	—	—	—	—	—	26,218	26,218
Net loss	—	—	—	(1,062,187)	(1,062,187)	(27,291)	(1,089,478)
Balance at June 30, 2023	156,027,648	$ 156	$1,366,989	$ (1,712,849)	$ (345,704)	$ (1,073)	$ (346,777)

	Class A Common Stock		Additional paid-in capital	Accumulated deficit	Accumulated other comprehensive income (loss)	Total Ironwood Pharmaceuticals, Inc. Stockholders' equity (deficit)	Noncontrolling Interests	Total Stockholders' equity (deficit)
	Shares	Amount						
Balance at December 31, 2022	154,026,949	$ 154	$1,348,600	$ (696,376)	$ —	$ 652,378	$ —	$ 652,378

Issuance of common stock related to share-based awards	1,319,154	1	1,628	—	—	1,629	—	1,629
Share-based compensation expense related to share-based awards and employee stock purchase plan	—	—	7,131	—	—	7,131	—	7,131
Net income	—	—	—	45,714	—	45,714	—	45,714
Balance at March 31, 2023	155,346,103	$ 155	$1,357,359	$ (650,662)	$ —	$ 706,852	$ —	$ 706,852
Issuance of common stock related to share-based awards and employee stock purchase plan	681,545	1	1,365	—	—	1,366	—	1,366
Share-based compensation expense related to share-based awards and employee stock purchase plan	—	—	8,265	—	—	8,265	—	8,265
Non-controlling interests on acquisition of VectivBio Holding AG	—	—	—	—	—	—	26,218	26,218
Net loss	—	—	—	(1,062,187)	—	(1,062,187)	(27,291)	(1,089,478)
Balance at June 30, 2023	156,027,648	$ 156	$1,366,989	$ (1,712,849)	$ —	$ (345,704)	$ (1,073)	$ (346,777)
Issuance of common stock related to share-based awards	98,028	—	13	—	—	13	—	13
Share-based compensation expense related to share-based awards and employee stock purchase plan	—	—	7,906	—	—	7,906	—	7,906
Net income (loss)	—	—	—	15,321	—	15,321	(1,371)	13,950
Other comprehensive loss, net of tax	—	—	—	—	(752)	(752)	(19)	(771)
Balance at September 30, 2023	156,125,676	$ 156	$1,374,908	$ (1,697,528)	$ (752)	$ (323,216)	$ (2,463)	$ (325,679)

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	Class A Common Stock		Additional paid-in	Accumulated	Total Ironwood Pharmaceuticals, Inc. Stockholders'	Noncontrolling	Total Stockholders'
	Shares	Amount	capital	deficit	equity (deficit)	Interests	equity
Balance at December 31, 2021	162,036,461	$ 162	$1,543,357	$ (937,608)	$ 605,911	$ —	$ 605,911
Cumulative effect adjustment upon adoption of ASU 2020-06, net of tax	—	—	(110,217)	66,167	(44,050)	—	(44,050)
Issuance of common stock related to share-based awards	1,087,966	1	1,520	—	1,521	—	1,521
Share-based compensation expense related to share-based awards and employee stock purchase plan	—	—	6,089	—	6,089	—	6,089
Repurchases of common stock	(8,009,272)	(8)	(90,481)	—	(90,489)	—	(90,489)
Net income	—	—	—	38,801	38,801	—	38,801
Balance at March 31, 2022	155,115,155	$ 155	$1,350,268	$ (832,640)	$ 517,783	$ —	$ 517,783
Issuance of common stock related to share-based awards and employee stock purchase plan	818,235	1	4,314	—	4,315	—	4,315
Share-based compensation expense related to share-based awards and employee stock purchase plan	—	—	6,601	—	6,601	—	6,601
Repurchases of common stock	(2,757,081)	(3)	(32,893)	—	(32,896)	—	(32,896)

Net income	—	—	—	37,080	37,080	—	37,080
Balance at June 30, 2022	153,176,309	$ 153	$1,328,290	$ (795,560)	$ 532,883	$ —	$ 532,883

	Class A Common Stock		Additional paid-in	Accumulated	Accumulated other comprehensive	Total Ironwood Pharmaceuticals, Inc. Stockholders'	Noncontrolling	Total Stockholders'
	Shares	Amount	capital	deficit	income (loss)	equity (deficit)	Interests	equity
Balance at December 31, 2021	162,036,461	$ 162	$1,543,357	$ (937,608)	$ —	$ 605,911	$ —	$ 605,911
Cumulative effect adjustment upon adoption of ASU 2020-06, net of tax	—	—	(110,217)	66,167	—	(44,050)	—	(44,050)
Issuance of common stock related to share-based awards	1,087,966	1	1,520	—	—	1,521	—	1,521
Share-based compensation expense related to share-based awards and employee stock purchase plan	—	—	6,089	—	—	6,089	—	6,089
Repurchases of common stock	(8,009,272)	(8)	(90,481)	—	—	(90,489)	—	(90,489)
Net income	—	—	—	38,801	—	38,801	—	38,801
Balance at March 31, 2022	155,115,155	$ 155	$1,350,268	$ (832,640)	—	$ 517,783	$ —	$ 517,783
Issuance of common stock related to share-based awards and employee stock purchase plan	818,235	1	4,314	—	—	4,315	—	4,315
Share-based compensation expense related to share-based awards and employee stock purchase plan	—	—	6,601	—	—	6,601	—	6,601
Repurchases of common stock	(2,757,081)	(3)	(32,893)	—	—	(32,896)	—	(32,896)
Net income	—	—	—	37,080	—	37,080	—	37,080
Balance at June 30, 2022	153,176,309	$ 153	$1,328,290	$ (795,560)	$ —	$ 532,883	$ —	$ 532,883
Issuance of common stock related to share-based awards and employee stock purchase plan	143,108	—	796	—	—	796	—	796
Share-based compensation expense related to share-based awards and employee stock purchase plan	—	—	7,067	—	—	7,067	—	7,067
Net income	—	—	—	50,317	—	50,317	—	50,317
Balance at September 30, 2022	153,319,417	$ 153	$1,336,153	$ (745,243)	—	591,063	—	$ 591,063

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

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Ironwood Pharmaceuticals, Inc.
Condensed Consolidated Statements of Cash Flows
(In thousands)
(unaudited)

	Six Months Ended June 30,	
	2023	2022
Cash flows from operating activities:		

Net income (loss)	$ (1,043,764)	$ 75,881
Adjustments to reconcile net income (loss) to net cash provided by operating activities:		
Depreciation and amortization	556	715
Share-based compensation expense	15,395	12,690
Change in fair value of note hedge warrants	(19)	(1,164)
Change in fair value of convertible note hedges	—	1,115
Non-cash interest expense	887	1,053
Acquired in-process research and development	1,090,449	—
Deferred income taxes	27,060	29,594
Changes in assets and liabilities:		
Accounts receivable, net	11,057	21,394
Prepaid expenses and other current assets	(6,268)	(1,264)
Operating lease right-of-use assets	704	650
Other assets	(270)	128
Accounts payable and accrued expenses	18,333	(10,765)
Accrued research and development costs	(2,083)	(9,558)
Operating lease liabilities	(970)	(978)
Other liabilities	4,067	5,998
Net cash provided by operating activities	115,134	125,489
Cash flows from investing activities:		
Purchases of property and equipment	(13)	(97)
Acquisition of VectivBio Holding AG, net of cash acquired	(999,492)	—
Net cash used in investing activities	(999,505)	(97)
Cash flows from financing activities:		
Proceeds from exercise of stock options and employee stock purchase plan	5,347	5,937
Payment on 2022 Convertible Notes	—	(120,699)
Proceeds from revolving credit facility	400,000	—
Costs associated with revolving credit facility	(2,295)	—
Repurchases of common stock	—	(126,394)
Net cash provided by (used in) financing activities	403,052	(241,156)
Net increase in cash, cash equivalents and restricted cash	(481,319)	(115,764)
Cash, cash equivalents and restricted cash, beginning of period	657,938	621,864
Cash, cash equivalents and restricted cash, end of period	$ 176,619	$ 506,100
Reconciliation of cash, cash equivalents, and restricted cash to the condensed consolidated balance sheets		
Cash and cash equivalents	$ 175,321	$ 504,365
Restricted cash	1,298	1,735
Total cash, cash equivalents, and restricted cash	$ 176,619	$ 506,100

	Nine Months Ended September 30,	
	2023	**2022**
Cash flows from operating activities:		
Net income (loss)	$ (1,029,814)	$ 126,198
Adjustments to reconcile net income (loss) to net cash provided by operating activities:		
Depreciation and amortization	1,063	1,078
Share-based compensation expense	23,301	19,757
Change in fair value of note hedge warrants	(19)	(1,315)
Change in fair value of convertible note hedges	—	1,115
Non-cash interest expense	1,473	1,453
Acquired in-process research and development	1,090,449	—
Deferred income taxes	41,316	45,610
Changes in assets and liabilities:		

Accounts receivable, net	5,501	7,056
Prepaid expenses and other current assets	(1,881)	1,578
Operating lease right-of-use assets	1,067	985
Other assets	(354)	137
Accounts payable and accrued expenses	24,927	(6,108)
Accrued research and development costs	(11,470)	(10,223)
Operating lease liabilities	(1,479)	(1,474)
Other liabilities	3,513	8,734
Net cash provided by operating activities	147,593	194,581
Cash flows from investing activities:		
Purchases of property and equipment	(62)	(163)
Acquisition of VectivBio Holding AG, net of cash acquired	(1,022,068)	—
Net cash used in investing activities	(1,022,130)	(163)
Cash flows from financing activities:		
Proceeds from exercise of stock options and employee stock purchase plan	5,359	6,734
Repayment of 2022 Convertible Notes	—	(120,699)
Proceeds from revolving credit facility	400,000	—
Costs associated with revolving credit facility	(2,295)	—
Repayments of revolving credit facility	(75,000)	
Repurchases of common stock	—	(126,394)
Net cash provided by (used in) financing activities	328,064	(240,359)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(3)	—
Net decrease in cash, cash equivalents and restricted cash	(546,476)	(45,941)
Cash, cash equivalents and restricted cash, beginning of period	657,938	621,864
Cash, cash equivalents and restricted cash, end of period	$ 111,462	$ 575,923
Reconciliation of cash, cash equivalents, and restricted cash to the condensed consolidated balance sheets		
Cash and cash equivalents	$ 110,164	$ 574,188
Restricted cash	1,298	1,735
Total cash, cash equivalents, and restricted cash	$ 111,462	$ 575,923

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

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Ironwood Pharmaceuticals, Inc.
Notes to Condensed Consolidated Financial Statements
(unaudited)

1. Nature of Business

Ironwood Pharmaceuticals, Inc. ("Ironwood" or the "Company") is a gastrointestinal ("GI") healthcare company dedicated to advancing the treatment of GI diseases and redefining the standard of care for GI patients. The Company is focused on the development and

commercialization of innovative GI product opportunities in areas of significant unmet need, leveraging its demonstrated expertise and capabilities in GI diseases.

LINZESS® (linaclotide), the Company's commercial product, is the first product approved by the United States Food and Drug Administration (the "U.S. FDA") in a class of GI medicines called guanylate cyclase type C agonists ("GC-C agonists") and is indicated for adult men and women suffering from irritable bowel syndrome with constipation ("IBS-C") or chronic idiopathic constipation ("CIC") and for pediatric patients ages 6-17 years-old suffering from functional constipation ("FC"). LINZESS is available to adult men and women suffering from IBS-C or CIC in the United States (the "U.S."), Mexico and Saudi Arabia, to adult men and women suffering from IBS-C or chronic constipation in Japan, IBS-C in China, and pediatric patients ages 6-17 years old with FC in the U.S. Linaclotide is available under the trademarked name CONSTELLA® to adult men and women suffering from IBS-C or CIC in Canada, and to adult men and women suffering from IBS-C in certain European countries.

The Company has strategic partnerships with leading pharmaceutical companies to support the development and commercialization of linaclotide throughout the world. The Company and its partner, AbbVie Inc. (together with its affiliates, "AbbVie"), began commercializing LINZESS in the U.S. in December 2012. Under the Company's collaboration for North America with AbbVie, total net sales of LINZESS in the U.S., as recorded by AbbVie, are reduced by commercial costs incurred by each party, and the resulting amount is shared equally between the Company and AbbVie. Additionally, development costs are shared equally between the Company and AbbVie. The Company and AbbVie are exploring ways to enhance the clinical profile of LINZESS by studying linaclotide in additional indications, populations and formulations to assess its potential to treat various conditions.

Outside of the U.S., the Company earns royalties as a percentage of net sales of products containing linaclotide as an active ingredient by the Company's collaboration partners. AbbVie has an exclusive license from the Company to develop and commercialize linaclotide in all countries other than China (including Hong Kong and Macau), Japan and the countries and territories of North America (the "AbbVie License Territory"). In addition, AbbVie has exclusive rights to commercialize linaclotide in Canada as CONSTELLA and in Mexico as LINZESS. Astellas Pharma Inc. ("Astellas"), the Company's partner in Japan, has an exclusive license to develop, manufacture, and commercialize linaclotide in Japan. AstraZeneca AB (together with its affiliates) ("AstraZeneca"), the Company's partner in China, has the exclusive right to develop, manufacture, and commercialize products containing linaclotide in China (including Hong Kong and Macau) (the "AstraZeneca License Territory").

In June 2023, the Company completed a tender offer to purchase outstanding ordinary shares of VectivBio Holding AG ("VectivBio"), a clinical-stage biotechnology company focused on the discovery and development of treatments for severe, rare GI conditions for which there is a significant unmet medical need. As of September 30, 2023, Ironwood holds 98% of VectivBio's outstanding ordinary shares and intends to effect a statutory squeeze-out merger under Swiss law to acquire all remaining shares. Through the acquisition, the Company is advancing apraglutide, a next-generation, synthetic peptide analog of glucagon-like peptide-2 ("GLP-2"), for rare GI diseases, including short bowel syndrome with intestinal failure ("SBS-IF").

The Company has a collaboration and license option agreement (the "COUR Collaboration Agreement") with COUR Pharmaceutical Development Company, Inc. ("COUR"), a biotechnology company developing novel immune-modifying nanoparticles to treat autoimmune diseases. The COUR Collaboration Agreement grants the Company an option to acquire an exclusive license to research, develop, manufacture and commercialize, in the U.S., products containing CNP-104, a potential treatment for primary biliary cholangitis, a rare autoimmune disease targeting the liver.

These and other agreements are more fully described in Note 4, Collaboration, License, and Other Agreements, to these condensed consolidated financial statements. 11

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The Company is also advancing IW-3300, a GC-C agonist, for the potential treatment of visceral pain conditions, including interstitial cystitis/bladder pain syndrome ("IC/BPS") and endometriosis.

In June 2023, the Company completed a tender offer to purchase outstanding ordinary shares of VectivBio Holding AG ("VectivBio"), a clinical-stage biotechnology company focused on the discovery and development of treatments for severe, rare GI conditions for which there is a significant unmet medical need. As of June 30, 2023,

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Ironwood holds 98% of VectivBio's outstanding ordinary shares and intends to effect a statutory squeeze-out merger under Swiss law to acquire all remaining shares.Through the acquisition, the Company is advancing apraglutide, a next-generation, synthetic peptide analog of glucagon-like peptide-2 ("GLP-2"), for rare GI diseases, including short bowel syndrome with intestinal failure ("SBS-IF").

The Company was incorporated in Delaware on January 5, 1998 as Microbia, Inc. On April 7, 2008, the Company changed its name to Ironwood Pharmaceuticals, Inc. To date, the Company has dedicated a majority of its activities to the research, development and commercialization of linaclotide, as well as to the research and development of its other product candidates.

2. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying condensed consolidated financial statements and the related disclosures are unaudited and have been prepared in accordance with accounting principles generally accepted in the U.S. Additionally, certain information and footnote disclosures normally included in the Company's annual financial statements have been condensed or omitted. Accordingly, these interim condensed consolidated financial statements should be read in conjunction with the consolidated financial statements and notes thereto contained in the Company's Annual Report on Form 10-K for the year ended December 31, 2022, which was filed with the SEC on February 16, 2023 (the "2022 Annual Report on Form 10-K").

The unaudited interim condensed consolidated financial statements have been prepared on the same basis as the audited consolidated financial statements and, in the opinion of management, reflect all normal recurring adjustments considered necessary for a fair statement of the Company's financial position as of June 30, 2023 September 30, 2023, and the results of its operations for the three and six nine months ended June 30, 2023 September 30, 2023 and 2022, its statements of stockholders' equity (deficit) for the three and six nine months ended June 30, 2023 September 30, 2023 and 2022, and its cash flows for the six nine months ended June 30, 2023 September 30, 2023 and 2022. The results of operations for the three and six nine months ended June 30, 2023 September 30, 2023 and 2022 are not necessarily indicative of the results that may be expected for the full year or any other subsequent interim period.

Principles of Consolidation

The accompanying condensed consolidated financial statements as of June 30, 2023 September 30, 2023 include the accounts of Ironwood, its wholly-owned subsidiaries, Ironwood Pharmaceuticals Securities Corporation and Ironwood Pharmaceuticals GmbH, as well as Ironwood's majority-owned subsidiary, VectivBio, and VectivBio's wholly-owned subsidiaries, VectivBio AG, VectivBio Comet AG, GlyPharma Therapeutic Inc. and VectivBio US, Inc. All intercompany transactions and balances are eliminated in consolidation.

For consolidated entities in which the Company owns less than 100% of the outstanding shares, the Company records net income (loss) and comprehensive income (loss) attributable to noncontrolling interests in its consolidated statements of income (loss) and comprehensive income (loss), respectively, equal to the percentage of the common stock ownership interest retained in such entities by the noncontrolling parties. The Company reports noncontrolling interests in consolidated entities as a component of equity separate from the Company's equity.

The Company acquired control of VectivBio and its subsidiaries on June 29, 2023 (Note 3). Accordingly, the accompanying condensed consolidated financial statements reflect the results of operations and cash flows of VectivBio and its subsidiaries from the acquisition date through June 30, 2023 September 30, 2023.

Use of Estimates

The preparation of condensed consolidated financial statements in accordance with U.S. generally accepted accounting principles requires the Company's management to make estimates and judgments that may affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the condensed consolidated financial statements, and the amounts of revenues and expenses during the reported periods. On an ongoing basis, the Company's management evaluates its estimates, judgments and methodologies. Significant estimates and assumptions in the condensed consolidated financial statements include those related to fair value of assets acquired and liabilities assumed in acquisitions; revenue recognition; accounts receivable; useful lives of long-lived assets, impairment of long-lived assets, including goodwill; valuation procedures for right-of-use assets and operating lease

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liabilities; fair value of derivatives; income taxes, including uncertain tax positions and the valuation allowance for

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deferred tax assets; research and development expenses; contingencies and share-based compensation. The Company bases its estimates on historical experience and on various other assumptions that are believed to be reasonable, the results of which form the basis for making judgments about the carrying values of assets and liabilities. Actual results may differ materially from these estimates under different assumptions or conditions. Changes in estimates are reflected in reported results in the period in which they become known.

Reclassifications

Certain prior period amounts have been reclassified to conform to current period presentation.

Summary of Significant Accounting Policies

The Company's significant accounting policies are described in Note 2, *Summary of Significant Accounting Policies*, in the 2022 Annual Report on Form 10-K. During the three and six nine months ended June 30, 2023 September 30, 2023, the following additional significant accounting policies were applicable following the acquisition of VectivBio:

Foreign Currency Translation

For subsidiaries with a different functional currency than the U.S. dollar, assets and liabilities are translated at the exchange rate as of the balance sheet date and income and expense items are translated at the average exchange rate for the reporting period. Adjustments resulting from the translation of the financial statements of foreign subsidiaries are recorded in accumulated comprehensive income (loss), a separate component of stockholders' equity.

Adjustments related to foreign currency translation were insignificant during the three and six months ended June 30, 2023 and cumulatively were insignificant as of June 30, 2023.

Acquisitions

The Company evaluates acquisitions of assets and other similar transactions to assess whether the transaction should be accounted for as a business combination or asset acquisition by first applying a screen test to determine whether substantially all of the fair value of the gross assets acquired is concentrated into a single identifiable asset or group of similar identifiable assets. If the screen test is met, a single asset or group of assets is not a business and is accounted for as an asset acquisition. If the screen test is not met, further determination is required as to whether the Company has acquired inputs and processes that have the ability to create outputs that would meet the requirements of a business.

The Company accounts for business combinations using the acquisition method of accounting, which requires the acquiring entity to recognize the fair value of assets acquired and liabilities assumed and establishes the acquisition date as the fair value measurement point. The Company determines the fair value of assets acquired and liabilities assumed based on management's estimate of the fair value of assets acquired and liabilities assumed in the acquisition. Goodwill represents the excess of the purchase price over the fair value of the net tangible and intangible assets acquired. Transaction costs are expensed as incurred.

The Company accounts for asset acquisitions that are not determined to be a business combination by recognizing net assets based on the consideration paid, inclusive of transaction costs, on a relative fair value basis. In an asset acquisition, the cost allocated to acquired in-process research and development ("IPR&D") with no alternative future use is charged to research and development expense at the acquisition date. The Company classifies asset acquisitions of acquired IPR&D as investing activities on its condensed consolidated statements of cash flows.

New Accounting Pronouncements

From time to time, new accounting pronouncements are issued by the Financial Accounting Standards Board or other standard setting bodies that are adopted by the Company as of the specified effective date. The Company did not adopt any new accounting pronouncements during the three and six nine months ended June 30, 2023 September 30, 2023 that had a material effect on its condensed consolidated financial statements.

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Other recent accounting pronouncements issued, but not yet effective, are not expected to be applicable to the Company or have a material effect on the condensed consolidated financial statements upon future adoption.

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3. Acquisitions

On June 29, 2023, the Company completed a tender offer to purchase the outstanding ordinary shares of VectivBio (the "VectivBio Shares") at a price per share of $17.00, net to the shareholders of VectivBio in cash, without interest and subject to any applicable withholding taxes (the "VectivBio Acquisition"). The aggregate consideration paid by the Company to acquire the shares accepted for payment was approximately $1.2 billion. The Company financed the acquisition through proceeds from the borrowings under the Revolving Credit Agreement (as defined elsewhere below), cash on hand, and cash of VectivBio.

As of June 30, 2023 September 30, 2023, the Company holds 98% of the outstanding VectivBio Shares. The Company intends to effect a squeeze-out merger under Swiss law to acquire all the remaining outstanding VectivBio Shares in the second half fourth quarter of 2023. The remaining outstanding VectivBio Shares are expected to be settled by the Company in cash for $26.3 million.

The total purchase consideration for VectivBio is as follows (in thousands):

Cash consideration paid to selling shareholders (1)	$ 1,041,391	$1,041,391
Cash consideration paid to settle VectivBio restricted stock units ("RSUs") and stock options (2)	78,003	
Cash consideration paid to settle VectivBio restricted stock units ("RSUs") and stock options (2)		78,003
Cash consideration paid to settle VectivBio warrants (3)	3,720	3,720
Transaction costs	26,270	26,270
Fair value of noncontrolling interest (4)	26,218	26,218
Total purchase consideration	$ 1,175,602	$1,175,602

(1) The cash consideration paid to selling shareholders was determined based on the total number of VectivBio Shares tendered at closing of 61,258,315 at a per share price of $17.00.
(2) The cash consideration paid to settle VectivBio RSUs and stock options issued under VectivBio's equity incentive plans was determined based on the total number of underlying VectivBio Shares of 8,904,171 at a per share price of $17.00, less the exercise price for stock options.
(3) The cash consideration paid to settle VectivBio warrants was determined based on the total number of VectivBio warrant shares outstanding at close of 324,190 at a per share price of $11.4757 calculated as the per share price of $17.00, less the exercise price of $5.5243 per share.
(4) The fair value of the non-controlling interest was determined based on the total number of VectivBio Shares outstanding at closing of 1,547,723 at the closing date of the tender offer, using the VectivBio closing share price on June 28, 2023 of $16.94.

All consideration was paid during June 2023 prior to September 30, 2023 with the exception of $18.6 million $4.0 million of transaction costs and $8.0 costs.

The VectivBio Acquisition was accounted for as an asset acquisition under Accounting Standards Codification ("ASC") Topic 805, *Business Combinations,* because substantially all of the fair value of the gross assets acquired was concentrated in a single identifiable IPR&D asset, apraglutide, VectivBio's lead investigational asset. Apraglutide is a next-generation, long-acting synthetic GLP-2 analog being developed for a range of rare GI diseases and is currently in Phase III clinical trial for the potential treatment of SBS-IF. The Company recognized the acquired assets and assumed liabilities based on the consideration paid, inclusive of transaction costs, on a relative fair value basis. In accordance with the accounting for asset acquisitions, an entity that acquires IPR&D assets in an asset acquisition follows the guidance in ASC Topic 730, *Research and Development*, which requires that both tangible and intangible identifiable research and development assets with no alternative future use be allocated a portion of the consideration transferred and recorded as research and development expense at the acquisition date. As a result, the Company recorded approximately $1.1 billion in acquired in-process research and development expense related to the apraglutide IPR&D asset during the three and six months ended June 30, 2023.

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The following is the allocation of the purchase consideration based on the relative fair value of assets acquired and liabilities assumed by the Company (in thousands):

Assets acquired	
Cash and cash equivalents	$ 123,340
Prepaid expenses and other current assets	10,867
Property and equipment	126
Intangible assets	4,100
Acquired in-process research and development	1,090,449
Total assets acquired	$ 1,228,882
Liabilities assumed	
Current liabilities	37,377
Other liabilities	15,903
Total liabilities assumed	$ 53,280
Net assets acquired	$ 1,175,602

Assets acquired	
Cash and cash equivalents	$ 123,340
Prepaid expenses and other current assets	10,867
Property and equipment	126

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Intangible assets	4,100
Acquired in-process research and development	1,090,449
Total assets acquired	$ 1,228,882
Liabilities assumed	
Current liabilities	37,377
Other liabilities	15,903
Total liabilities assumed	$ 53,280
Net assets acquired	$ 1,175,602

Intangible assets are comprised of the assembled workforce and are amortized on a straight-line basis over an estimated useful life of five years. The Company recognized an insignificant amount $0.2 million of amortization expense during each of the three and six nine months ended June 30, 2023 September 30, 2023 and the net carrying value of the assembled workforce was $4.1 million $3.9 million.

The Company incurred acquisition-related expenses of $45.2 million $8.5 million and $53.8 million, respectively, for the three and six nine months ended June 30, 2023 September 30, 2023, of which $20.9 million $3.7 million and $24.5 million, respectively, were included in selling, general and administrative expenses, $14.8 million $0.2 million and $15.0 million, respectively, were included in research and development expense, and $9.6 million $4.7 million and $14.2 million, respectively, were included in restructuring expense within the Company's condensed consolidated statement of income (loss) for the three and six nine months ended June 30, 2023 September 30, 2023. Acquisition-related expenses include direct and incremental costs incurred in connection with the transaction, including integration-related professional services and employee retention-related benefits. Acquisition-related expenses exclude transaction costs included in the computation of total consideration paid.

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4. Net Income (Loss) Per Share

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

	Three Months Ended June 30,		Six Months Ended June 30,		Three Months Ended September 30,		Nine Months Ended September 30,	
	2023(1)	2022	2023(1)	2022	2023	2022	2023(1)	2022
Numerator:								
Net income (loss)	$ (1,089,478)	$ 37,080	$ (1,043,764)	$ 75,881	$ 13,950	$ 50,317	$(1,029,814)	$126,198
Less: Net income (loss) attributable to noncontrolling interests	(27,291)	—	(27,291)	—	(1,371)	—	(28,662)	—
Net income (loss) attributable to Ironwood Pharmaceuticals, Inc.	(1,062,187)	37,080	(1,016,473)	75,881	15,321	50,317	(1,001,152)	126,198
Add back interest expense, net of tax benefit, on assumed conversion of 2024 Convertible Notes	—	445	—	889	448	445	—	1,335
Add back interest expense, net of tax benefit, on assumed conversion of 2026 Convertible Notes	—	667	—	1,333	669	667	—	2,000
Numerator used in computing net income per share — diluted	(1,062,187)	38,192	(1,016,473)	78,103				
Numerator used in computing net income (loss) per share — diluted					$ 16,438	$ 51,429	$(1,001,152)	$129,533
Denominator:								
Weighted average number of common shares outstanding used in computing net income (loss) per share — basic	155,367	153,304	154,912	155,550	155,886	153,066	155,240	154,713
Effect of dilutive securities:								
Stock options	—	361	—	339	88	283	—	318
Time-based restricted stock units	—	922	—	1,211	445	966	—	1,278
Performance-based restricted stock units	—	270	—	188	573	225	—	196
Restricted stock	—	151	—	159	24	49	—	122
Shares subject to issuance under Employee Stock Purchase Plan					7	8	—	9
2024 Convertible Notes assumed conversion	—	14,934	—	14,934	14,934	14,934	—	14,934
2026 Convertible Notes assumed conversion	—	14,934	—	14,934	14,934	14,934	—	14,934
Dilutive potential common shares								
Weighted average number of common shares outstanding used in computing net income (loss) per share — diluted	155,367	184,876	154,912	187,315	186,891	184,465	155,240	186,504
Net income (loss) per share — basic	$ (6.84)	$ 0.24	$ (6.56)	$ 0.49	$ 0.10	$ 0.33	$ (6.45)	$ 0.82

Net income (loss) per share — diluted	$ (6.84)	$ 0.21	$ (6.56)	$ 0.42	$ 0.09	$ 0.28	$ (6.45)	$ 0.69

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(1) During the three and six nine months ended June 30, 2023 September 30, 2023, the Company was in a net loss position, and therefore, did not differentiate basic and diluted earnings per share.

The outstanding securities have been excluded from the computation of diluted weighted average shares outstanding, as applicable, as their effect would be anti-dilutive (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,		Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022	2023	2022	2023	2022
Stock options	4,855	5,035	4,957	6,204	4,744	5,847	4,896	6,021
Time-based restricted stock units	1,365	98	920	49	1,626	139	1,042	64
Performance-based restricted stock units	230	528	146	510	216	528	164	572
Note Hedge Warrants	1,848	8,318	5,083	8,318	—	8,318	3,364	8,318
Total	8,298	13,979	11,106	15,081	6,586	14,832	9,466	14,975

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5. Collaboration, License and Other Agreements

The Company has linaclotide collaboration agreements with AbbVie for North America and AstraZeneca for China (including Hong Kong and Macau), as well as linaclotide license agreements with Astellas for Japan and with AbbVie for the AbbVie License Territory. The following table provides amounts included in the Company's condensed consolidated statements of income (loss) as collaborative arrangements revenue attributable to transactions from these arrangements and other agreements (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,		Three Months Ended September 30,		Nine Months Ended September 30,	
Collaborative Arrangements Revenue	2023	2022	2023	2022	2023	2022	2023	2022
Linaclotide Collaboration and License Agreements:								
AbbVie (North America)	$ 105,482	$ 95,061	$ 207,818	$ 189,962	$110,730	$106,085	$318,548	$296,047
AbbVie (Europe and other)	694	528	1,357	1,138	714	709	2,071	1,847

AstraZeneca (China, including Hong Kong and Macau)	121	148	212	340	174	144	386	484
Astellas (Japan)	482	500	873	1,023	432	520	1,305	1,543
Other Agreements:								
Alnylam (GIVLAARI)	—	585	—	1,408	—	814	—	2,222
AKP (apraglutide)					934	—	997	—
Other	603	409	1,183	889	755	365	1,875	1,254
Total collaborative arrangements revenue	$ 107,382	$ 97,231	$ 211,443	$ 194,760	$113,739	$108,637	$325,182	$303,397

Accounts receivable, net, included $119.0 million $124.5 million and $130.0 million primarily related to collaborative arrangements revenue as of June 30, 2023 September 30, 2023 and December 31, 2022, respectively. Accounts receivable, net, included $103.0 million $108.4 million and $104.4 million due from the Company's partner, AbbVie, net of $5.0 million $4.6 million and $4.0 million of accounts payable, as of June 30, 2023 September 30, 2023 and December 31, 2022, respectively.

The Company routinely assesses the creditworthiness of its license and collaboration partners. The Company has not experienced any material losses related to receivables from its license or collaboration partners during the three and six nine months ended June 30, 2023 September 30, 2023 and 2022.

Linaclotide Agreements

Collaboration Agreement for North America with AbbVie

In September 2007, the Company entered into a collaboration agreement with AbbVie to develop and commercialize linaclotide for the treatment of IBS-C, CIC, and other GI conditions in North America. Under the terms of this collaboration agreement, the Company received an upfront licensing fee, equity investment, and development and regulatory milestones, and shares equally with AbbVie all development costs as well as net profits or losses from the development and sale of linaclotide in the U.S. In addition, the Company receives royalties in the mid-teens percent based on net sales in Canada and Mexico. AbbVie is solely responsible for the further development, regulatory approval and commercialization of linaclotide in those countries and funding any costs.

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During the three and six nine months ended June 30, 2023 September 30, 2023, the Company incurred $2.0 million $1.7 million and $3.4 million $5.1 million, respectively, in total research and development expenses under the linaclotide collaboration for North America. During the three and six nine months ended June 30, 2022 September 30, 2022, the Company incurred $2.0 million $1.6 million and $3.7 million $5.3 million, respectively, in total research and development expenses under the linaclotide collaboration for North America. As a result of the research and development cost-sharing provisions of the linaclotide collaboration for North America, the Company incurred $3.1 million $2.9 million and $6.1 million $9.0 million in incremental research and development costs during the three and six nine months ended June 30, 2023 September 30, 2023, respectively, and incurred $2.1 million $2.2 million and $4.5 million $6.7 million in incremental research and development costs during the three and six nine months ended June 30, 2022 September 30, 2022, respectively, to reflect the obligations of each party under the collaboration to bear 50% of the development costs incurred.

The Company and AbbVie began commercializing LINZESS in the U.S. in December 2012. The Company receives 50% of the net profits and bears 50% of the net losses from the commercial sale of LINZESS in the U.S. Net profits or net losses consist of net sales of LINZESS to third-party customers and sublicense income in the U.S. less the cost of goods sold as well as selling, general and administrative expenses. LINZESS net sales are calculated and

recorded by AbbVie and may include gross sales net of discounts, rebates, allowances, sales taxes, freight and insurance charges, and other applicable deductions.

The Company evaluated its linaclotide collaboration arrangement for North America and concluded that all development-period performance obligations had been satisfied as of September 2012. The Company has determined that there are three remaining commercial-period performance obligations, which include the sales detailing of LINZESS, participation in the joint commercialization committee, and approved additional trials. The consideration remaining includes cost reimbursements in the U.S. and net profit and loss sharing payments based on net sales in the U.S. Additionally, the Company receives royalties in the mid-teens percent based on net sales in Canada and Mexico. Royalties and net profit and loss sharing payments will be recorded as collaborative arrangements revenue or expense in the period earned, as these payments relate predominately to the license granted to AbbVie. The Company records royalty revenue in the period earned based on royalty reports from its partner, if available, or based on the projected sales and historical trends. The cost reimbursements received from AbbVie during the commercialization period will be recognized as earned in accordance with the right-to-invoice practical expedient, as the Company's right to consideration corresponds directly with the value of the services transferred during the commercialization period.

Under the Company's linaclotide collaboration agreement for North America, LINZESS net sales are calculated and recorded by AbbVie and include gross sales net of discounts, rebates, allowances, sales taxes, freight and insurance charges, and other applicable deductions, as noted above. These amounts include the use of estimates and judgments, which could be adjusted based on actual results in the future. The Company records its share of the net profits or net losses from the sales of LINZESS in the U.S. less commercial expenses on a net basis, and presents the settlement payments to and from AbbVie as collaboration expense or collaborative arrangements revenue, as applicable. This treatment is in accordance with the Company's revenue recognition policy, given that the Company is not the primary obligor and does not have the inventory risks in the collaboration agreement with AbbVie for North America. The Company relies on AbbVie to provide accurate and complete information related to net sales of LINZESS in accordance with U.S. generally accepted accounting principles in order to calculate its settlement payments to and from AbbVie and record collaboration expense or collaborative arrangements revenue, as applicable.

The Company recognized following table summarizes collaborative arrangements revenue from the linaclotide collaboration agreement for North America during the three and six months ended June 30, 2023 and 2022 as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,		Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022	2023	2022	2023	2022
Collaborative arrangements revenue related to sales of LINZESS in the U.S.	$ 104,751	$ 94,452	$ 206,387	$ 188,771	$110,089	$105,224	$316,476	$293,995
Royalty revenue	731	609	1,431	1,191	641	861	2,072	2,052
Total collaborative arrangements revenue	$ 105,482	$ 95,061	$ 207,818	$ 189,962	$110,730	$106,085	$318,548	$296,047

The Company incurred $9.5 million and $19.3 million $28.8 million in total selling, general and administrative costs related to the sale of LINZESS in the U.S. in accordance with the cost-sharing arrangement with AbbVie for the three and six nine months ended June 30, 2023 September 30, 2023, respectively. The Company incurred $8.5 million $8.9 million and $17.2 million $26.2 million in total selling, general and administrative costs related to the sale of LINZESS in the U.S. in accordance with the cost-sharing arrangement with AbbVie for the three and six nine months ended June 30, 2022 September 30, 2022, respectively.

In May 2014, CONSTELLA® became commercially available in Canada and, in June 2014, LINZESS became commercially available in Mexico. The Company records royalties on sales of CONSTELLA in Canada and LINZESS in Mexico in the period earned. The Company recognized $0.7 million $0.6 million and $1.4 million $2.1 million of combined royalty revenues from Canada and Mexico during the three and six nine months ended June 30, 2023 September 30, 2023, respectively. The Company recognized $0.6 million $0.9 million and $1.2 million $2.1 million of combined royalty revenues from Canada and Mexico during the three and six nine months ended June 30, 2022 September 30, 2022, respectively.

License Agreement with AbbVie (All countries other than the countries and territories of North America, China (including Hong Kong and Macau), and Japan)

The Company has a license agreement with AbbVie to develop, manufacture and commercialize linaclotide in (i) Europe, and (ii) all other countries other than China (including Hong Kong and Macau), Japan, and the countries and territories of North America, or collectively the "Expanded Territory", for the treatment of IBS-C, CIC and other GI conditions.

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Under the license agreement, as amended, AbbVie is obligated to pay the Company, (i) royalties based on sales volume in Europe in the upper-teens percent, and (ii) on a country-by-country and product-by-product basis in the Expanded Territory, a royalty as a percentage of net sales of products containing linaclotide as an active ingredient in the upper-single digits for five years following the first commercial sale of a linaclotide product in a country, and in the low-double digits thereafter. The royalty rate for products in Europe and the Expanded Territory will decrease, on a country-by-country basis, to the lower-single digits, or cease entirely, following the occurrence of certain events. The license agreement also contains certain sales-based milestones and commercial launch milestones, which could total up to $42.5 million. The Company recognized $0.7 million and $1.3 million $2.1 million of royalty revenue during the three and six nine months ended June 30, 2023 September 30, 2023, respectively. The Company recognized $0.5 million $0.7 million and $1.1 million $1.8 million of royalty revenue during the three and six nine months ended June 30, 2022 September 30, 2022, respectively.

License Agreement for Japan with Astellas

The Company has a license agreement with Astellas to develop, manufacture, and commercialize linaclotide for the treatment of IBS-C, CIC and other GI conditions in Japan.

Under the license agreement, as amended, Astellas is required to pay royalties to the Company at rates beginning in the mid-single digit percent and escalating to low-double-digit percent, based on aggregate annual net sales in Japan of products containing linaclotide as an active ingredient. These royalty payments are subject to reduction following the expiration of certain licensed patents and the occurrence of generic competition in Japan.

The Company recognized $0.5 million $0.4 million and $0.9 million $1.3 million of royalty revenue during the three and six nine months ended June 30, 2023 September 30, 2023, respectively. The Company recognized $0.5 million and $1.0 $1.5 million of royalty revenue during the three and six nine months ended June 30, 2022 September 30, 2022, respectively.

Collaboration Agreement for China (including Hong Kong and Macau) with AstraZeneca

The Company has a collaboration agreement with AstraZeneca under which AstraZeneca has the exclusive right to develop, manufacture and commercialize products containing linaclotide in the AstraZeneca License Territory.

Under the collaboration agreement, AstraZeneca is required to pay tiered royalties to the Company at rates beginning in the mid-single-digit percent and increasing up to twenty percent based on the aggregate annual net sales of products containing linaclotide in the AstraZeneca License Territory. The Company recognized an insignificant amount $0.2 million and $0.2 million $0.4 million of royalty revenue during the three and six nine months ended June 30, 2023 September 30, 2023, respectively. The Company recognized an insignificant amount and $0.3 million $0.5 million of royalty revenue during the three and six nine months ended June 30, 2022 September 30, 2022, respectively.

The Company is entitled to receive non-contingent payments totaling $35.0 million in three installments through 2024, of which $15.0 million remained outstanding at June 30, 2023 September 30, 2023. In addition, AstraZeneca may be required to make milestone payments totaling up to $90.0 million contingent on the achievement of certain sales targets. The significant financing component of the transaction was $2.6 million and is recognized as interest income through 2024 using the effective interest method. At June September 30, 2023, the non-contingent receivable due from AstraZeneca

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was $14.8 14.9 million and was classified as current. At December 31, 2022, the current portion and the non-current portion of the non-contingent receivable due from AstraZeneca were $10.0 million and $14.6 million, respectively.

Other Collaboration and License Agreements

Collaboration and License Option Agreement with COUR

In November 2021, the Company entered into the COUR Collaboration Agreement, pursuant to which the Company has been granted an option (the "Option") to acquire an exclusive license to research, develop, manufacture and commercialize, in the U.S., products containing CNP-104, a tolerizing immune modifying nanoparticle ("CNP-104") for the treatment of primary biliary cholangitis ("PBC"). COUR has initiated a clinical study to evaluate the safety, tolerability, and pharmacodynamic effects and efficacy of CNP-104 in PBC patients.

Pursuant to the terms of the COUR Collaboration Agreement, the Company made an upfront, non-refundable payment of $6.0 million to COUR during the year ended December 31, 2021, and agreed to pay $13.5 million in total

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non-contingent payments and milestone payments in connection with certain development activities and regulatory milestones. After reviewing the data from the clinical study for CNP-104, if the Company exercises the Option, the Company will pay COUR $35.0 million in exchange for the license. Upon commercialization, COUR will be eligible to receive commercial milestone payments of up to $440.0 million over the term of the agreement and royalties in the high-single digits to low-double digits percentage of the aggregated annual net sales in the U.S. of products containing CNP-104.

During the year ended December 31, 2021, the Company recognized research and development expense totaling $19.5 million related to the up-front payment, non-contingent payment, and milestone payments for which payment was probable to occur. At June 30, 2023 and December 31, 2022, payment obligations of $1.9 million and $3.8 million, respectively, were included in accrued research and development costs. No payment obligations remained as of September 30, 2023.

In April 2023, the Company and COUR executed an amendment to the COUR Collaboration Agreement, in which the Company agreed to pay a one-time, non-refundable, upfront payment of $6.0 million to COUR in exchange for the right to apply a credit of $6.6 million against future amounts due to COUR in connection with the exercise of the Option, commercial milestones, or royalties. In connection with such payment, COUR also granted the Company a right of first negotiation over certain additional potential research and development programs. The $6.0 million payment was recognized as research and development expense in the second quarter of 2023.

Development and Commercialization Agreement with AKP

In March 2022, VectivBio entered into a development and commercialization agreement with Asahi Kasei Pharma Corporation ("AKP") in which VectivBio granted an exclusive license to AKP, with the right to sublicense in multiple tiers, to develop, commercialize and exploit products derived from apraglutide in Japan.

Pursuant to the terms of the development and commercialization agreement, using the exchange rate at the inception of the agreement, VectivBio received an upfront payment of JPY 3,000 million ($24.6 million at date of agreement) and is eligible to receive development related payments of JPY 1,600 million in the aggregate ($13.1 million at date of agreement), development milestones of JPY 1,000 million ($8.2 million at date of agreement) and up to JPY 19,000 million ($155.8 million at date of agreement) of commercial and sales-based milestone payments. VectivBio is also eligible to receive payments in the commercial period for manufacturing supply equal to cost-plus manufacturing mark-up and tiered royalties of up to a mid-double-digit percentage on product sales continuing until the later of (i) expiration of regulatory exclusivity in Japan, or (ii) expiration of the last valid patent claim that provides exclusivity to apraglutide in Japan (the "Royalty Term"). The development and commercialization agreement will terminate upon the expiration of the Royalty Term.

The Company evaluated the development and commercialization agreement under the provisions of ASC Topic 606,*Revenue from Contracts with Customers*, and identified two performance obligations consisting of the (i) exclusive license for the development and commercialization of apraglutide in Japan and (ii) development activities for conducting global trials and sharing of associated development data necessary for obtaining and maintaining regulatory approval in Japan. Each performance obligation was capable of being distinct and distinct in the context of the contract. The initial transaction price was allocated to each performance obligation on a relative standalone selling price basis. The Company

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assessed that it provided a right to use the license as the license exists (in terms of form and functionality) at the point in time at which it is granted and therefore, was satisfied at the inception of the arrangement. The development activities are being recognized over time as the Company performs development activities related to the global trials. The Company recognizes revenue associated with the development activities using an input method, according to the costs incurred, which in management's judgment, is the best measure of progress towards satifying satisfying the performance obligation.

In connection with the acquisition of VectivBio, the Company accounted for the acquisition as an asset acquisition, which required that it recognize the deferred revenue at its fair value of $4.3 million on June 28, 2023.

The Company recognized an insignificant amount $0.9 million and $1.0 million of revenue during the period from the acquisition date through June 30, 2023, three and nine months ended September 30, 2023, respectively. As of June 30, 2023 September 30, 2023, deferred revenue of $1.5 million $2.6 million is reported within accrued expenses and other current liabilities and $2.7 million $0.6 million is reported within other liabilities on the condensed consolidated balance sheets. Deferred revenue is expected to be recognized over the course of the development activities, which are currently estimated to occur through 2028.

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Other Agreements

Disease Education and Promotional Agreement with Alnylam

In August 2019, the Company and Alnylam Pharmaceuticals, Inc. ("Alnylam") entered into a disease education and promotional agreement (the "Alnylam Agreement") for Alnylam's GIVLAARI (givosiran) for the treatment of acute hepatic porphyria. The Alnylam Agreement, as amended, was terminated in June 2021 with an effective termination date of September 30, 2021. Under the terms of the

Alnylam Agreement, the Company's sales force performed disease awareness activities and sales detailing activities for GIVLAARI. The Company remained eligible to receive royalties based on a percentage of net sales of GIVLAARI that are directly attributable to the Company's promotional efforts through September 30, 2022, which was one year following the termination of the agreement. During the three and six months ended June 30, 2022, the Company recognized $0.6 million and $1.4 million, respectively, in royalty revenue.

License Agreement with Ferring

In August 2012, as subsequently amended and restated in December 2016, GlyPharma Therapeutic Inc., a subsidiary of VectivBio ("GlyPharma"), entered into an exclusive licensing agreement with Ferring International Center, S.A. ("Ferring"), pursuant to which Ferring granted GlyPharma an exclusive, worldwide, sublicensable license under certain patent rights and know-how controlled by Ferring relating to apraglutide and certain know-how controlled by Ferring relating to specified alternate drug compounds, to research, develop, manufacture, make, have made, import, export, use, sell, distribute, promote, advertise, dispose of or offer to sell (i) products containing apraglutide whose manufacture, use or sale is covered by a valid claim of the licensed patents, or licensed products and (ii) products, containing a specified alternate drug compound, or alternate drug products. In April 2021, the license agreement was transferred and assigned to VectivBio AG, a subsidiary of VectivBio.

Under the license agreement, as partial consideration for the rights Ferring granted to it, VectivBio AG is required to pay Ferring a high single-digit royalty on worldwide annual net sales of licensed products and alternate drug products until, on a country-by-country basis and licensed product-by-licensed product or alternate drug product-by-alternate drug product basis, as applicable, the date on which the manufacture, use or sale of such licensed product or alternate drug product, as applicable, ceases to be covered by a valid claim of a patent within the licensed patents in such country. GlyPharma was also required to pay Ferring a certain number of warrants and Class A preferred shares pursuant to a shareholders' agreement. The equity obligations under the license agreement have been fully performed by GlyPharma.

The Company is also obligated to pay a specified percentage of the annual consideration VectivBio AG or its affiliates, including us, received in connection with sales of licensed product or alternate drug product by any third parties to which VectivBio AG or its affiliates, including us, grant a sublicense of any of the rights licensed to VectivBio AG by Ferring under this Agreement. Such percentage is in the high single digits for sales of both licensed products and alternate drug products, and such payments are owed for the duration of the royalty term for licensed products or alternate drug products, as applicable.

Other Agreements

Disease Education and Promotional Agreement with Alnylam

In August 2019, the Company and Alnylam Pharmaceuticals, Inc. ("Alnylam") entered into a disease education and promotional agreement (the "Alnylam Agreement") for Alnylam's GIVLAARI (givosiran) for the treatment of acute hepatic porphyria. The Alnylam Agreement, as amended, was terminated in June 2021 with an effective termination date of September 30, 2021. Under the terms of the Alnylam Agreement, the Company's sales force performed disease awareness activities and sales detailing activities for GIVLAARI. The Company remained eligible to receive royalties based on a percentage of net sales of GIVLAARI that are directly attributable to the Company's promotional efforts through September 30, 2022, which was one year following the termination of the agreement. During the three and nine months ended September 30, 2022, the Company recognized $0.8 million and $2.2 million, respectively, in royalty revenue.

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6. Fair Value of Financial Instruments

The tables below present information about the Company's assets and liabilities that are measured at fair value on a recurring basis as of June 30, 2023 September 30, 2023 and December 31, 2022 and indicate the fair value hierarchy of the valuation techniques the Company utilized to determine such fair value. In general, fair values determined by Level 1 inputs utilize observable inputs such as quoted prices in active markets for identical assets or liabilities. Fair values determined by Level 2 inputs utilize data points that are either directly or indirectly observable, such as quoted prices for similar instruments in active markets, interest rates and yield curves. Fair values determined by Level 3

inputs utilize unobservable data points in which there is little or no market data, which require the Company to develop its own assumptions for the asset or liability.

The Company's investment portfolio may include fixed income securities that do not always trade on a daily basis. As a result, the pricing services used by the Company apply other available information as applicable through processes such as benchmark yields, benchmarking of like securities, sector groupings and matrix pricing to prepare valuations. In addition, model processes are used to assess interest rate impact and develop prepayment scenarios. These models take into consideration relevant credit information, perceived market movements, sector news and economic events. The inputs into these models may include benchmark yields, reported trades, broker-dealer quotes, issuer spreads

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and other relevant data. The Company validates the prices provided by its third-party pricing services by obtaining market values from other pricing sources and analyzing pricing data in certain instances. The Company periodically invests in certain reverse repurchase agreements, which are collateralized by Government Securities and Obligations for an amount not less than 102% of their principal amount. The Company does not record an asset or liability for the collateral as the Company is not permitted to sell or re-pledge the collateral. The collateral has at least the prevailing credit rating of U.S. Government Treasuries and Agencies. The Company utilizes a third-party custodian to manage the exchange of funds and ensure the collateral received is maintained at 102% of the reverse repurchase agreements principal amount on a daily basis.

The following tables present the assets and liabilities the Company has measured at fair value on a recurring basis (in thousands):

		Fair Value Measurements at Reporting Date Using				Fair Value Measurements at Reporting Date Using		
	June 30, 2023	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	September 30, 2023	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:								
Cash and cash equivalents:								
Money market funds	$ 94,212	$ 94,212	$ —	$ —	$ 29,420	$ 29,420	$ —	$ —
U.S. Treasury securities	10,236	—	10,236	—	10,372	—	10,372	—
Commercial paper	29,601	—	29,601	—	32,587	—	32,587	—
Restricted cash:								
Money market funds	1,298	1,298	—	—	1,298	1,298	—	—
Total assets measured at fair value	$135,347	$ 95,510	$ 39,837	$ —	$ 73,677	$ 30,718	$ 42,959	$ —

	Fair Value Measurements at Reporting Date Using

	December 31, 2022	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Cash and cash equivalents:				
Money market funds	$ 250,313	$ 250,313	$ —	$ —
Repurchase agreements	261,075	—	261,075	—
Commercial paper	138,809	—	138,809	—
Restricted cash:				
Money market funds	1,735	1,735	—	—
Total assets measured at fair value	$ 651,932	$ 252,048	$ 399,884	$ —
Liabilities:				
Note hedge warrants	$ 19	$ —	$ —	$ 19
Total liabilities measured at fair value	$ 19	$ —	$ —	$ 19

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Cash equivalents, accounts receivable, prepaid expenses and other current assets, accounts payable, accrued research and development costs, accrued expenses and other current liabilities and current portion of operating lease obligations at June 30, 2023 September 30, 2023 and December 31, 2022 are carried at amounts that approximate fair value due to their short-term maturities.

Convertible Note Hedges and Note Hedge Warrants with Respect to 2022 Convertible Notes

The Company's Convertible Note Hedges, which expired unexercised in June 2022, and Note Hedge Warrants, which expired unexercised in April 2023, were recorded as derivative assets and liabilities, respectively, and were classified as Level 3 measurements under the fair value hierarchy. These derivatives were not actively traded and were valued using the Black-Scholes option-pricing model, which required the use of subjective assumptions.

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The following inputs were used in the fair market valuation of the Note Hedge Warrants as of December 31, 2022: Warrants:

	December 31, 2022	
Risk-free interest rate (1)	4.5	%
Expected term	0.3	
Stock price (2)	$ 12.39	
Strike price (3)	$ 18.82	
Common stock volatility (4)	27.1	%
Dividend yield (5)	—	%

(1) Based on U.S. Treasury yield curve, with terms commensurate with the expected term of the Note Hedge Warrants.
(2) The closing price of the Company's Class A Common Stock on the last trading day of the quarter ended December 31, 2022.
(3) As per the agreements for the Note Hedge Warrants.
(4) Expected volatility based on historical volatility of the Company's Class A Common Stock.
(5) Based on U.S. Treasury yield curve, with terms commensurate with the expected term of the Note Hedge Warrants.
(6) The closing price of the Company's Class A Common Stock on the last trading day of the quarter ended December 31, 2022.
(7) As per the agreements for the Note Hedge Warrants.
(8) Expected volatility based on historical volatility of the Company's Class A Common Stock.
(9) The Company has not paid and does not anticipate paying cash dividends on its shares of common stock in the foreseeable future; therefore, the expected dividend yield is assumed to be zero.

The Convertible Note Hedges and the Note Hedge Warrants were recorded at fair value at each reporting date and changes in fair value were recorded in other income (expense), net within the Company's condensed consolidated statements of income (loss).

The following table reflects the change in the Company's Level 3 Note Hedge Warrants from December 31, 2022 through June 30, 2023 September 30, 2023 (in thousands):

Balance at December 31, 2022	$	(19)
Change in fair value, recorded as a component of gain on derivatives		19
Balance at June 30, 2023 September 30, 2023	$	—

Convertible Senior Notes

In August 2019, the Company issued $200.0 million aggregate principal amount of its 2024 Convertible Notes and $200.0 million aggregate principal amount of its 2026 Convertible Notes. Notes (Note 9). The fair value of the respective convertible senior notes, which differs from their carrying value, is influenced by interest rates, the price of the Company's Class A Common Stock and the volatility thereof, and the prices for the respective convertible senior notes observed in market trading, which are Level 2 inputs.

The estimated fair value of the 2024 Convertible Notes was $200.4 million $198.1 million and $215.9 million as of June 30, 2023 September 30, 2023 and December 31, 2022, respectively. The estimated fair value of the 2026 Convertible Notes was $203.4 million $195.0 million and $219.0 million as of June 30, 2023 September 30, 2023 and December 31, 2022, respectively.

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Capped Calls with Respect to 2024 Convertible Notes and 2026 Convertible Notes

In connection with the issuance of the 2024 Convertible Notes and the 2026 Convertible Notes, the Company entered into the Capped Calls with certain financial institutions. The Capped Calls cover 29,867,480 shares of Class A Common Stock (subject to anti-dilution and certain other adjustments), which is the same number of shares of Class A Common Stock that initially underlie the 2024 Convertible Notes and the 2026 Convertible Notes. The Capped Calls have an initial strike price of approximately $13.39 per share, which corresponds to the initial conversion price of the 2024 Convertible Notes and the 2026 Convertible Notes, and have a cap price of approximately $17.05 per share (Note 8) 9). The strike price and cap price are subject to anti-dilution adjustments generally similar to those applicable to the 2024 Convertible Notes and the 2026 Convertible Notes. These instruments meet the conditions outlined in ASC Topic 815, *Derivatives and Hedging* ("ASC 815"), to be

classified in stockholders' equity and are not subsequently remeasured as long as the conditions for equity classification continue to be met (Note 8) 9).

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Revolving Credit Agreement

Outstanding borrowings under the revolving credit facility (Note 8) 9) are carried at amounts that approximate fair value based on their nature, terms, credit spreads, and variable interest rates, which are Level 3 inputs.

Non-recurring Fair Value Measurements

Acquired In-Process Research & Development

The fair value of the acquired IPR&D asset, apraglutide, was determined using the multi-period excess earnings method using Level 3 fair-value measurements and inputs including estimated cash flows and probabilities of success.

Assembled Workforce

The fair value of the assembled workforce was determined using the replacement cost method using Level 3 fair-value measurements and inputs including estimated costs and productivity metrics.

7. Accrued Expenses and Other Current Liabilities

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

	June 30, 2023	December 31, 2022	September 30, 2023	December 31, 2022
Accrued compensation and benefits	$ 31,988	$ 12,268	$ 24,971	$ 12,268
Accrued interest			9,582	188
Accrued transaction costs	18,596	—	3,977	—
Accrued restructuring liabilities	9,228	—	8,609	—
Accrued taxes	6,646	656	1,274	656
Other	13,127	3,776	14,301	3,588
Total accrued expenses and other current liabilities	$ 79,585	$ 16,700	$ 62,714	$ 16,700

As of June 30, 2023, accrued compensation and benefits includes $10.5 million of employee tax witholdings and $6.5 million of employer taxes related to RSU and stock option settlements in connection with the VectivBio Acquisition.

As of June 30, 2023 September 30, 2023, other accrued expenses of $13.1 million $14.3 million were comprised primarily of $11.1 million $11.6 million of uninvoiced vendor liabilities and $1.5 million $2.6 million of deferred revenue. As of December 31, 2022, other accrued expenses of $3.8 million $3.6 million were comprised primarily of $3.6 million of uninvoiced vendor liabilities.

8. Leases

The Company's lease portfolio for the three and six nine months ended June 30, 2023 September 30, 2023 includes: an office lease for its current headquarters location and other locations, vehicle leases for its salesforce representatives, and leases for computer and office

equipment.

The Company's headquarters office lease and vehicle lease require letters of credit to secure the Company's obligations under the lease agreements totaling $1.3 million and $1.7 million and are collateralized by money market accounts recorded as restricted cash on the Company's condensed consolidated balance sheets as of June 30, 2023 and December 31, 2022, respectively.

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accounts recorded as restricted cash on the Company's condensed consolidated balance sheets as of September 30, 2023 and December 31, 2022, respectively.

Lease cost is recognized on a straight-line basis over the lease term. The components of lease cost for the three and six months ended June 30, 2023 and 2022 are as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,		Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022	2023	2022	2023	2022
Operating lease cost	$ 627	$ 627	$ 1,254	$ 1,256	$ 627	$ 627	$1,880	$1,883
Short-term lease cost	269	264	540	523	314	274	854	798
Total lease cost	$ 896	$ 891	$ 1,794	$ 1,779	$ 941	$ 901	$2,734	$2,681

Supplemental information related to leases for the periods reported is as follows:

	Six Months Ended June 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022
Cash paid for amounts included in the measurement of lease liabilities (in thousands)	$ 1,520	$ 1,583	$2,292	$2,356
Weighted-average remaining lease term of operating leases (in years)	7.0	7.8	6.7	7.6
Weighted-average discount rate of operating leases	5.8 %	5.8 %	5.8 %	5.8 %

Summer Street Lease

In June 2019, the Company entered into a non-cancelable operating lease (the "Summer Street Lease") for approximately 39,000 square feet of office space on the 23rd floor of 100 Summer Street, Boston, Massachusetts, which began serving as the Company's headquarters in October 2019. The Summer Street Lease terminates on June 11, 2030 and includes a 2% annual rent escalation, free rent periods, a tenant improvement allowance, and an option to extend the term of the lease for an additional five years at a market base rental rate. The extension option is not included in the lease term used for the measurement of the lease, as it is not reasonably certain to be exercised. The lease expense, inclusive of the escalating rent payments and lease incentives, is recognized on a straight-line basis over the lease term.

At lease commencement, the Company recorded a right-of-use asset and a lease liability using an incremental borrowing rate of 5.8%. At June 30, 2023 September 30, 2023, the balances of the right-of-use asset and operating lease liability were $13.3 million $13.0 million and $18.7 million $18.2 million, respectively. At December 31, 2022, the balances of the right-of-use asset and operating lease liability were $14.0 million and $19.7 million, respectively.

Lease costs recorded during the three and six nine months ended June 30, 2023 September 30, 2023 were $0.6 million and $1.3 million $1.9 million, respectively. Lease costs recorded during the three and six nine months ended June 30, 2022 September 30, 2022 were $0.6 million and $1.3 million $1.9 million, respectively.

Future minimum lease payments as of June 30, 2023 September 30, 2023 are as follows (in thousands):

2023(1)	$ 1,545	$ 774
2024	3,126	3,126
2025	3,189	3,189
2026	3,252	3,252
2027	3,317	3,317
2028 and thereafter	8,285	8,285
Total future minimum lease payments	22,714	21,943
Less: present value adjustment	(4,021)	(3,758)
Operating lease liabilities	18,693	18,185
Less: current portion of operating lease liabilities	(3,095)	(3,111)
Operating lease liabilities, net of current portion	$ 15,598	$15,074

(1) For the six three months ending December 31, 2023.

9. Debt

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2.25% Convertible Senior Notes due 2022

In June 2015, the Company issued $335.7 million aggregate principal amount of the 2022 Convertible Notes. The Company received net proceeds of $324.0 million from the sale of the 2022 Convertible Notes, after deducting fees

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and expenses of $11.7 million. The Company used $21.1 million of the net proceeds from the sale of the 2022 Convertible Notes to pay the net cost of the Convertible Note Hedges (after such cost was partially offset by the proceeds to the Company from the sale of the Note Hedge Warrants), as described below.

In connection with the issuance of the 2024 Convertible Notes and the 2026 Convertible Notes in August 2019, the Company repurchased $215.0 million aggregate principal amount of the 2022 Convertible Notes. Such portion of the 2022 Convertible Notes were repurchased at a premium totaling $227.3 million.

In June 2022, the Company repaid the remaining $120.7 million aggregate principal amount of the 2022 Convertible Notes upon maturity.

The 2022 Convertible Notes were governed by an indenture (the "2022 Indenture") between the Company and U.S. Bank National Association, as trustee (the "Trustee"). The 2022 Convertible Notes were senior unsecured obligations and bore cash interest at the annual rate of 2.25%, payable on June 15 and December 15 of each year. The 2022 Convertible Notes matured on June 15, 2022. No conversions were exercised by holders of the 2022 Convertible Notes.

0.75% Convertible Senior Notes due 2024 and 1.50% Convertible Senior Notes due 2026

In August 2019, the Company issued $200.0 million aggregate principal amount of the 2024 Convertible Notes and $200.0 million aggregate principal amount of the 2026 Convertible Notes. The Company received net proceeds of $391.0 million from the sale of the 2024 Convertible Notes and 2026 Convertible Notes, after deducting fees and expenses of $9.0 million. The Company used $25.2 million of the net proceeds from the sale of the 2024 Convertible Notes and 2026 Convertible Notes to pay the cost of the Capped Calls, as described below. For purposes of this section, "Notes" refer to the 2024 Convertible Notes and the 2026 Convertible Notes, collectively.

The 2024 Convertible Notes and 2026 Convertible Notes were issued by the Company on August 12, 2019, pursuant to separate Indentures, each dated as of such date (each an "Indenture" and together the "Indentures"), between the Company and the Trustee. The 2024 Convertible Notes bear cash interest at the annual rate of 0.75% and the 2026 Convertible Notes bear cash interest at the annual rate of 1.50%, each payable on June 15 and December 15 of each year. The 2024 Convertible Notes will mature on June 15, 2024 and the 2026 Convertible Notes will mature on June 15, 2026, unless earlier converted or repurchased. The Company will settle conversions of the 2024 Convertible Notes and 2026 Convertible Notes through payment or delivery, as the case may be, of cash, shares of the Company's Class A Common Stock or a combination of cash and shares of Class A Common Stock, at the Company's option (subject to, and in accordance with, the settlement provisions of the applicable Indenture). The initial conversion rate for each of the 2024 Convertible Notes and the 2026 Convertible Notes is 74.6687 shares of Class A Common Stock (subject to adjustment as provided for in the applicable Indenture) per $1,000 principal amount of the 2024 Convertible Notes and 2026 Convertible Notes, which is equal to an initial conversion price of approximately $13.39 per share.

Holders of the 2024 Convertible Notes and 2026 Convertible Notes may convert their Notes at their option at any time prior to the close of business on the business day immediately preceding December 15, 2023, with respect to the 2024 Convertible Notes, and December 15, 2025, with respect to the 2026 Convertible Notes, in multiples of $1,000 principal amount, only under the following circumstances:

- during any calendar quarter commencing after the calendar quarter ending on December 31, 2019 (and only during such calendar quarter), if the last reported sale price of Class A Common Stock for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price for the Notes on each applicable trading day;

- during the five-business day period after any five consecutive trading day period (the "measurement period") in which the "trading price" (as defined in each Indenture) per $1,000 principal amount of Notes

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for each trading day of the measurement period was less than 98% of the product of the last reported sale price of Class A Common Stock and the conversion rate for the Notes on each such trading day; or

- upon the occurrence of specified corporate events described in each Indenture.

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On or after December 15, 2023, with respect to the 2024 Convertible Notes, and December 15, 2025, with respect to the 2026 Convertible Notes, until the close of business on the second scheduled trading day immediately preceding the applicable maturity date, the holders of the Notes may convert their Notes, in multiples of $1,000 principal amount, regardless of the foregoing conditions.

Upon the occurrence of fundamental changes, as described in the Indentures, prior to the maturity date of the respective Notes, holders of such Notes may require the Company to repurchase for cash all or a portion of their Notes at a repurchase price equal to 100% of the principal amount of the Notes to be repurchased, plus accrued and unpaid interest. If a make-whole fundamental change, as described in the Indentures, occurs and a holder elects to convert its Notes in connection with such make-whole fundamental change, such holder may be entitled to an increase in the conversion rate as described in the Indentures.

The Indentures do not contain any financial covenants or restrict the Company's ability to repurchase the Company's securities, pay dividends or make restricted payments in the event of a transaction that substantially increases the Company's level of indebtedness. The Indentures provide for customary events of default. In the case of an event of default with respect to a series of Notes arising from specified events of bankruptcy or insolvency, all outstanding Notes of such series will become due and payable immediately without further action or notice. If any other event of default with respect to a series of Notes under the relevant Indenture occurs or is continuing, the Trustee or holders of at least 25% in aggregate principal amount of the then outstanding Notes of such series may declare the principal amount of such Notes to be immediately due and payable.

The Company accounts for each convertible debt instrument as a single liability measured at amortized cost.

The Company's outstanding balances for the convertible senior notes as of June 30, 2023 and December 31, 2022 consisted of the following (in thousands):

	June 30, 2023	December 31, 2022	September 30, 2023	December 31, 2022
Principal:				
2024 Convertible Notes	$ 200,000	$ 200,000	$ 200,000	$ 200,000
2026 Convertible Notes	200,000	200,000	200,000	200,000
Less: unamortized debt issuance costs	(2,943)	(3,749)	(2,538)	(3,749)
Net carrying amount	$ 397,057	$ 396,251	$ 397,462	$ 396,251

In connection with the issuance of the 2024 Convertible Notes and the 2026 Convertible Notes, the Company incurred $9.0 million of debt issuance costs, which primarily consisted of initial purchaser's discounts and legal and other professional fees. The debt issuance costs are reflected as a reduction in the carrying value of the convertible senior notes and recorded as interest expense over the life of the 2024 Convertible Notes and the 2026 Convertible Notes.

The Company determined the expected life of the 2024 Convertible Notes and the 2026 Convertible Notes was equal to their approximately five and seven-year terms, respectively. The effective annual interest rates of the 2024 Convertible Notes and the 2026 Convertible Notes for the period from the date of issuance through June 30, 2023 September 30, 2023 were 1.2% and 1.9%, respectively. The effective annual interest rate is computed using the contractual interest and the amortization of debt issuance costs.

The following table sets forth total interest expense recognized related to convertible senior notes during the three and six months ended June 30, 2023 and 2022 (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,		Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022	2023	2022	2023	2022
Contractual interest expense	$ 1,125	$ 1,691	$ 2,250	$ 3,495	$ 1,125	$ 1,125	$ 3,375	$ 4,619
Amortization of debt issuance costs	404	516	806	1,053	405	399	1,212	1,453
Total interest expense	$ 1,529	$ 2,207	$ 3,056	$ 4,548	$ 1,530	$ 1,524	$ 4,587	$ 6,072

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Future minimum payments under the convertible senior notes as of June 30, 2023 September 30, 2023, are as follows (in thousands):

2023(1)	$ 2,250	$ 2,250
2024	203,750	203,750
2025	3,000	3,000
2026	201,500	201,500
Total future minimum payments under the convertible senior notes	410,500	410,500
Less: amounts representing interest	(10,500)	(10,500)
Less: unamortized debt issuance costs	(2,943)	(2,538)
Convertible senior notes balance	$ 397,057	$397,462

(1) For the six three months ending December 31, 2023.

Convertible Note Hedge and Note Hedge Warrant Transactions with Respect to 2022 Convertible Notes

To minimize the impact of potential dilution to the Company's Class A common stockholders upon conversion of the 2022 Convertible Notes, the Company entered into the Convertible Note Hedges. The Convertible Note Hedges had an exercise price of $14.51 per share and covered 23,135,435 shares. If the 2022 Convertible Notes had been converted and the price of the Company's Class A Common Stock was above the exercise price of the Convertible Note Hedges, the counterparties were obligated to deliver shares of the Company's Class A Common Stock and/or cash with an aggregate value approximately equal to the difference between the price of the Company's Class A Common Stock at the conversion date and the exercise price, multiplied by the number of shares of the Company's Class A Common Stock related to the Convertible Note Hedge being exercised. In June 2022, the Convertible Note Hedges terminated unexercised upon expiry.

Concurrently with entering into the Convertible Note Hedges, the Company sold Note Hedge Warrants to the Convertible Note Hedge counterparties to acquire shares of the Company's Class A Common Stock. An aggregate of 23,135,435 shares underlied underlay the Note Hedge Warrants and each warrant had a strike price of $18.82 per share, subject to customary anti-dilution adjustments. The Note Hedge Warrants were exercisable over the 150-trading day period beginning on September 15, 2022. In April 2023, the Note Hedge Warrants terminated unexercised upon expiry.

The Convertible Note Hedges and the Note Hedge Warrants were separate transactions entered into by the Company and were not part of the terms of the 2022 Convertible Notes. The Company paid $91.9 million for the Convertible Note Hedges and received $70.8 million for the Note Hedge Warrants, resulting in a net cost to the Company of $21.1 million.

The Convertible Note Hedges and Note Hedge Warrants were accounted for as derivative assets and liabilities, respectively, in accordance with ASC 815, and remeasured to fair value at each reporting date (Note 5) 6).

As of December 31, 2022, the Note Hedge Warrants were classified as current liabilities on the Company's condensed consolidated balance sheet.

Capped Calls with Respect to 2024 Convertible Notes and 2026 Convertible Notes

To minimize the impact of potential dilution to the Company's Class A common stockholders upon conversion of the 2024 Convertible Notes and the 2026 Convertible Notes, the Company entered into separate Capped Calls in connection with the issuance of the 2024 Convertible Notes and the 2026 Convertible Notes. The Company paid the counterparties $25.2 million to enter into the Capped Calls.

The Capped Calls have an initial strike price of approximately $13.39 per share, which corresponds to the initial conversion price of the 2024 Convertible Notes and the 2026 Convertible Notes and is subject to anti-dilution adjustments generally similar to those applicable to the 2024 Convertible Notes and the 2026 Convertible Notes. The Capped Calls have a cap price of approximately $17.05 per share, subject to certain adjustments. The Capped Calls cover 29,867,480 shares of Class A Common Stock (subject to anti-dilution and certain other adjustments), which is the same number of shares of Class A Common Stock that initially underlie the 2024 Convertible Notes and the 2026 Convertible Notes.

The Capped Calls are expected generally to reduce the potential dilution to the Class A Common Stock upon conversion of the 2024 Convertible Notes and the 2026 Convertible Notes in the event that the market price per share of Class A Common Stock is greater than the strike price of the Capped Calls as adjusted pursuant to the anti-dilution adjustments. If, however, the market price per share of Class A Common Stock exceeds the cap price of the Capped Calls, there would nevertheless be dilution upon conversion of the 2024 Convertible Notes and the 2026 Convertible Notes to the extent that such market price exceeds the cap price of the Capped Calls.

The Capped Calls are separate transactions entered into by and between the Company and the Capped Calls counterparties and are not part of the terms of the 2024 Convertible Notes or the 2026 Convertible Notes. Holders of the 2024 Convertible Notes and the 2026 Convertible Notes do not have any rights with respect to the Capped Calls. The Company recorded a reduction to additional paid-in capital of $25.0 million during the year ended December 31, 2019 related to the premium payments for the Capped Calls. Additionally, the Company recorded a $0.2 million reduction to equity related to transaction costs incurred in connection with the Capped Calls during the year ended December 31, 2019. These instruments meet the conditions outlined in ASC 815 to be classified in stockholders' equity and are not subsequently remeasured as long as the conditions for equity classification continue to be met.

Revolving Credit Facility

In May 2023, in connection with the VectivBio Acquisition, the Company entered into a credit agreement (the "Revolving Credit Agreement") with Wells Fargo Bank, N.A., as administrative agent, collateral agent, a letter of credit issuer and a lender, and the other agents, lenders and letter of credit issuers parties thereto thereto.

The Revolving Credit Agreement provides for a four-year $500.0 million secured revolving credit facility (the "Revolving Credit Facility"), which includes a $10.0 million letter of credit subfacility, and loans made thereunder will mature on the earliest to occur of (i) May 21, 2027 or (ii) the date that is 91 days prior to the stated maturity date of the Company's existing convertible notes then outstanding, unless, in the case of clause (ii), the Company's minimum liquidity equals or exceeds certain agreed levels. In June 2023, the Company borrowed $400.0 million to partially finance the VectivBio Acquisition (Note 3).

At the Company's election, borrowings under the Revolving Credit Agreement will bear interest at a rate equal to (a) Adjusted Term Secured Overnight Financing Rate ("SOFR") (as defined in Revolving Credit Agreement) plus the applicable rate (ranging from 1.75% to 3.00%) or (b) the highest of (1) the weighted average overnight Federal funds rate, as published by the Federal Reserve Bank of New York, plus one half of 1.0%, (2) the prime lending rate or (3) the one-month Adjusted Term SOFR plus 1.0% in effect from time to time plus the applicable rate (ranging from 0.75% to 2.00%). The applicable rates are based on the Company's consolidated secured net leverage ratio (as defined under the Revolving Credit Facility) at the time of the applicable borrowing.

Commencing in June 2023, the The Company will also pay pays a quarterly commitment fee of 0.30% to 0.425% on the daily amount by which the commitments under the Revolving Credit Agreement exceed the outstanding loans and letters of credit.

The loans and other obligations under the Revolving Credit Agreement are secured by substantially all of the Company's personal property, including a pledge of all the capital stock of subsidiaries held directly by the Company or any subsidiary that guarantees the Revolving Credit Agreement following the closing date (which pledge, in the case of any foreign subsidiary, is limited to 65% of the voting stock), subject to certain customary exceptions and limitations. The Revolving Credit Agreement generally prohibits any other liens on the assets of the Company and its restricted subsidiaries, subject to certain exceptions as described in the Revolving Credit Agreement.

Under the terms of the Revolving Credit Agreement, the Company will be able to request an increase in the commitments or the addition of a term loan secured by a pari passu lien on the collateral of up to an additional amount equal to the greater of $200.0 million and 100% of the trailing twelve-month Consolidated Adjusted EBITDA (as defined in the Revolving Credit Agreement) upon satisfaction of customary conditions, including receipt of commitments from either new lenders or increased commitments from existing lenders.

The Revolving Credit Agreement contains certain customary covenants applicable to the Company and its Restricted Subsidiaries (as defined in the Revolving Credit Agreement), and commencing in the third quarter of 2023, the

Company is required to maintain a maximum consolidated secured net leverage ratio of 3.00 to 1.00 and a minimum interest coverage ratio of 3.00 to 1.00, in each case at the end of each fiscal quarter. The Revolving Credit Agreement

allows the Company to elect to increase the permitted maximum consolidated secured net leverage ratio to 3.50 to 1.00 for four fiscal quarters in the event it consummates an acquisition for consideration in excess of $50.0 million, subject to certain limitations on how often this election can be made. As of June 30, 2023 September 30, 2023, the Company was in compliance with all covenants.

In connection with the Revolving Credit Agreement, the Company incurred $2.9 million of debt issuance costs, which primarily consisted of $2.0 million of lender fees and $0.9 million of legal and other professional fees. The debt issuance costs are classified as other assets and are amortized on a straight-line basis over the four-year term of the Revolving Credit Agreement. The Company had unamortized capitalized debt issuance costs of $2.8 million $2.6 million at June 30, 2023 September 30, 2023.

In June 2023, the Company borrowed $400.0 million to partially finance the VectivBio Acquisition (Note 3). In September 2023, the Company repaid $75.0 million of the outstanding principal balance. The outstanding principal balance on the revolving credit facility was $325.0 million as of September 30, 2023.

The following table sets forth total interest expense recognized related to Revolving Credit Agreement during the three and six months ended June 30, 2023 (in thousands):

	Three Months Ended June 30, 2023	Six Months Ended June 30, 2023	Three Months Ended September 30, 2023	Nine Months Ended September 30, 2023
Contractual interest expense	$ 216	$ 216	$ 8,054	$ 8,269
Amortization of debt issuance costs	81	81	180	262
Other financing costs	14	14	75	88
Total interest expense	$ 311	$ 311	$ 8,309	$ 8,619

10. Employee Stock Benefit Plans

The Company has several share-based compensation plans under which stock options, restricted stock awards, restricted stock units and other share-based awards are available for grant to employees, officers, directors and consultants of the Company.

The following table summarizes share-based compensation expense (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,		Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022	2023	2022	2023	2022
Share-based compensation expense:								
Research and development	$ 12,756	$ 1,133	$ 14,111	$ 2,291	$1,545	$1,316	$15,655	$ 3,607

Selling, general and administrative	22,147	5,468	27,923	10,399	6,361	5,751	34,283	16,150
Restructuring expenses	911	—	911	—	—	—	911	—
Total share-based compensation expense included in operating expenses	35,814	6,601	42,945	12,690	7,906	7,067	50,849	19,757
Income tax expense (benefit)	(923)	(278)	(1,220)	442	(850)	1,165	(2,069)	724
Total share-based compensation expense, net of tax	$ 34,891	$ 6,323	$ 41,725	$ 13,132	$7,056	$8,232	$48,780	$20,481

In connection with the VectivBio Acquisition, the Company incurred $27.5 million of share-based compensation expense during the three and six months ended June 30, 2023 second quarter of 2023 related to the vesting acceleration and settlement of outstanding VectivBio stock options and RSUs under VectivBio's 2021 Equity Incentive Plan, of which $11.3 million was recorded within research and development expense and $16.2 million was recorded within selling, general and administrative expenses, respectively. expenses.

11. Share Repurchase Plan

In May 2021, the Company's Board of Directors authorized a program to repurchase up to $150.0 million of the Company's Class A Common Stock. The Company completed the share repurchase program in May 2022 and retired the repurchased shares.

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During the three and six months ended June 30, 2022, 2022, the Company repurchased 2.8 million shares and 10.8 million shares of Class A Common Stock, respectively, at an aggregate cost of $32.9 million and $123.4 million, respectively.. For the overall program, under which repurchases commenced in December 2021, the Company repurchased 13.1 million shares of Class A Common Stock at an average price per share of $11.47.

12. Income Taxes

The income tax provision during interim periods is computed by applying an estimated annual effective income tax rate to year-to-date pre-tax income, plus adjustments for significant unusual or infrequently occurring items, in accordance with ASC Subtopic 740-270, *Income Taxes – Interim Reporting*.

During the three and six nine months ended June 30, 2023 September 30, 2023, the Company recorded income tax expense of $13.3million $18.0 million and $33.4 million $51.4 million, respectively. Due to the Company's ability to offset its pre-tax income against net operating losses, the majority of its tax provision is expected to represent a non-cash expense until its net operating losses have been fully utilized.

In connection with the VectivBio Acquisition, the Company recorded a valuation allowance against VectivBio's deferred tax assets, which are comprised primarily of net operating loss carryforwards in Switzerland. On a periodic basis, the Company reassesses the valuation allowance on its deferred income tax assets, weighing positive and negative evidence to assess the recoverability of the deferred tax assets.

Additionally, the Company increased its reserves for uncertain tax position positions by $11.0 million $11.0 million in the second quarter of 2023 in connection with a liability assumed in the VectivBio Acquisition.

During the three and the six nine months ended June 30, 2022 September 30, 2022, the Company recorded income tax expense of $16.7 million $19.6 million and $34.4 million $54.0 million, respectively. Due to the Company's ability to offset its pre-tax income against net

operating losses, it expects the majority of its tax provision to represent a non-cash expense until its net operating losses have been fully utilized.

13. Workforce Reductions and Restructuring

In April 2023, the Company reduced its workforce by approximately 10% of its headquarters-based personnel in an effort to further strengthen the operational efficiency of the organization. The workforce reduction was substantially completed during the second quarter of 2023. The Company recorded $3.5 million of restructuring expenses and adjustments, which are primarily comprised of employee severance, benefits and related costs, during each of the nine months ended September 30, 2023. No restructuring expenses or adjustments were recorded during the three and six months ended June 30, 2023 September 30, 2023.

In June 2023, the Company commenced the elimination of certain positions in connection with the VectivBio Acquisition. The majority of the eliminations were initiated in June 2023 and the remaining eliminations are expected to be were substantially completed during the third quarter of 2023. The Company recorded $9.6 million $4.7 million and $14.3 million of restructuring expenses, which are primarily comprised of employee severance, benefits and related costs, during each of the three and six nine months ended June 30, 2023. The Company expects to recognize between $1.0 million and $2.0 million of additional restructuring expenses during the second half of 2023 in connection with the acquisition-related role eliminations. September 30, 2023, respectively.

The following table summarizes the accrued liabilities activity recorded in connection with the reductions in workforce and related restructuring activities during the six months ended June 30, 2023 (in thousands):

	Amounts Accrued at December 31, 2022	Charges	Amount Paid	Adjustments	Amounts Accrued at June 30, 2023	Amounts Accrued at December 31, 2022	Charges	Amount Paid	Adjustments	Se
Headquarters-based workforce reduction	$ —	$ 2,540	$ (753)	$ —	$ 1,787	$ —	$ 2,540	$ (2,069)	$ —	$
VectivBio Acquisition-related workforce reduction	—	9,560	—	—	9,560	—	14,264	(3,822)	(200)	
Total	$ —	$12,100	$ (753)	$ —	$ 11,347	$ —	$16,804	$ (5,891)	$ (200)	$

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

Forward-Looking Information

The following discussion of our financial condition and results of operations should be read in conjunction with our condensed consolidated financial statements and the notes to those financial statements appearing elsewhere in this Quarterly Report on Form 10-Q and the audited consolidated financial statements and notes thereto included in our Annual Report on Form 10-K for the year ended December 31, 2022, which was filed with the U.S. Securities and Exchange Commission, or the SEC, on February 16, 2023, or the 2022 Annual Report on Form 10-K. This discussion contains forward-looking statements that involve significant risks and uncertainties. As a result of many factors, such as those set forth under "Note Regarding Forward-Looking Statements," in this Quarterly Report on Form 10-Q, under "Part I, Item 1A—Risk Factors" in our 2022 Annual Report on Form 10-K and under "Risk Factors" in Item 1A of this Quarterly Report on Form 10-Q, our actual results may differ materially from those anticipated in these forward-looking statements.

Overview

We are a gastrointestinal, or GI, healthcare company dedicated to advancing the treatment of GI diseases and redefining the standard of care for GI patients. We are focused on the development and commercialization of innovative GI product opportunities in areas of significant unmet need, leveraging our demonstrated expertise and capabilities in GI diseases.

LINZESS® (linaclotide), our commercial product, is the first product approved by the United States Food and Drug Administration, or U.S. FDA, in a class of GI medicines called guanylate cyclase type C agonists, or GC-C agonists, and is indicated for adult men and women suffering from irritable bowel syndrome with constipation, or IBS-C, or chronic idiopathic constipation, or CIC, and for pediatric patients ages 6-17 years-old suffering from functional constipation, or FC. LINZESS is available to adult men and women suffering from IBS-C or CIC in the United States, or the U.S., Mexico, and Saudi Arabia, to adult men and women suffering from IBS-C or chronic constipation in Japan, IBS-C in China and for pediatric patients ages 6-17 with FC in the U.S. Linaclotide is available under the trademarked name CONSTELLA® to adult men and women suffering from IBS-C or CIC in Canada, and to adult men and women suffering from IBS-C in certain European countries.

We have strategic partnerships with leading pharmaceutical companies to support the development and commercialization of linaclotide throughout the world, including with AbbVie Inc. (together with its affiliates), or AbbVie, in the U.S. and all countries worldwide other than China (including Hong Kong and Macau) and Japan, AstraZeneca AB (together with its affiliates), or AstraZeneca, in China (including Hong Kong and Macau) and Astellas Pharma Inc., or Astellas, in Japan. We also aim to leverage our leading development and commercialization capabilities in GI to bring additional treatment options to GI patients; for example, in November 2021, we entered into a collaboration and license option agreement, or the COUR Collaboration Agreement, with COUR Pharmaceutical Development Company, Inc., or COUR, that grants us an option to acquire an exclusive license to research, develop, manufacture and commercialize, in the U.S., products containing CNP-104, a tolerizing immune modifying nanoparticle, for the treatment of primary biliary cholangitis, or PBC. We are also advancing IW-3300, a GC-C agonist, for the potential treatment of visceral pain conditions, such as interstitial cystitis/bladder pain syndrome, or IC/BPS, and endometriosis.

In June 2023, we completed a tender offer to purchase outstanding ordinary shares of VectivBio Holding AG, or VectivBio, a clinical-stage biotechnology company focused on the discovery and development of treatments for severe, rare GI conditions for which there is a significant unmet medical need, or the VectivBio Acquisition. As of June 30, 2023 September 30, 2023, Ironwood holds 98% of VectivBio's outstanding ordinary shares and intends to effect a statutory squeeze-out merger according to applicable Swiss law to acquire all remaining shares. The VectivBio Acquisition was partially funded with $400.0 million of borrowings under a new revolving credit facility, or the Revolving Credit Facility, as further described in Note 9, *Debt*, to our condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q. Through the acquisition, the Company is advancing apraglutide, a next-generation, synthetic peptide analog of glucagon-like peptide-2, or GLP-2, for rare gastrointestinal diseases, including short bowel syndrome with intestinal failure, or SBS-IF, as well as several earlier stage assets.

To date, we have dedicated a majority of our activities to the research, development and commercialization of linaclotide, as well as to the research and development of our other product candidates. Prior to the year ended December

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31, 2019, we incurred net losses in each year since inception. For each of the three and six nine months ended June 30, 2023 September 30, 2023, we recorded net income of $14.0 million and net loss of approximately $1.1 billion and $1.0 billion, respectively. For the three and six nine months ended June 30, 2022 September 30, 2022, we recorded net income of $37.1 million $50.3 million and $75.9 million $126.2 million, respectively. As of June 30, 2023 September 30, 2023, we had an accumulated deficit of approximately $1.7 billion. We are unable to predict the extent of any future losses or guarantee that our company will be able to maintain positive cash flows.

We were incorporated in Delaware on January 5, 1998 as Microbia, Inc. On April 7, 2008, we changed our name to Ironwood Pharmaceuticals, Inc. We operate in one reportable business segment—human therapeutics.

Financial Operations Overview

Revenues. Our revenues are generated primarily through our collaborative arrangements and license agreements related to research and development and commercialization of linaclotide.

The majority of our revenues are generated from the sales of LINZESS in the U.S. We record our share of the net profits and losses from the sales of LINZESS in the U.S. less commercial expenses on a net basis and present the settlement payments to and from AbbVie as collaboration expense or collaborative arrangements revenue, as applicable. Net profits or losses consist of net sales to third-party customers and sublicense income in the U.S. less the cost of goods sold as well as selling, general and administrative expenses. Although we expect net sales to increase over time, the settlement payments between AbbVie and us, resulting in collaborative arrangements revenue or collaboration expense, are subject to fluctuation based on the ratio of selling, general and administrative expenses incurred by each party. In addition, our collaborative arrangements revenue may fluctuate as a result of the timing and amount of license fees and clinical and commercial milestones received and recognized under our current and future strategic partnerships as well as timing and amount of royalties from the sales of linaclotide in the European, Canadian, Mexican, Japanese, or Chinese markets or any other markets where linaclotide receives approval and is commercialized.

Research and Development Expense. The core of our research and development strategy is to leverage our demonstrated expertise and capabilities in GI diseases to bring multiple medicines to patients. Research and development expense consists of expenses incurred in connection with the research into and development of products and product candidates. These expenses consist primarily of compensation, benefits and other employee-related expenses, research and development related facility costs, third-party contract costs relating to nonclinical study and clinical trial activities, development of manufacturing processes, regulatory registration of third-party manufacturing facilities, and licensing fees for our product candidates.

Research and development expenses include amounts owed to AbbVie on an ongoing basis under cost-sharing
provisions in our collaboration agreement for linaclotide. Reimbursements received for research and development activities under this agreement are netted against research and development expenses.

Linaclotide. Our commercial product, LINZESS, is commercially available in the U.S. for the treatment of IBS-C or CIC in adults and for FC in pediatric patients ages 6-17 years-old. Linaclotide is also available to adult men and women suffering from IBS-C or CIC in certain countries of the world, including China, Japan, and in a number of E.U. countries.

We and AbbVie continue to explore ways to enhance the clinical profile of LINZESS by studying linaclotide in additional indications, populations and formulations to assess its potential to treat various conditions. In September 2020, based on the Phase IIIb data of linaclotide 290 mcg on the overall abdominal symptoms of bloating, pain and discomfort in adult patients with IBS-C, the U.S. FDA approved our Supplemental New Drug Application, or sNDA, to include a more comprehensive description of the effects of LINZESS in its approved label.

In addition, we and AbbVie have established a nonclinical and clinical post-marketing plan with the U.S. FDA to understand the safety and efficacy of LINZESS in pediatric patients. In August 2021, the U.S. FDA approved a revised label for LINZESS based on clinical safety data that had been generated thus far in pediatric studies. The updated label modified the boxed warning for risk of serious dehydration and contraindication against use in children to those less than two years of age. The boxed warning and contraindication previously applied to all children less than 18 years of age and less than 6 years of age, respectively. In September 2022, we announced positive topline data from a Phase III clinical trial evaluating linaclotide 72 mcg in pediatric patients ages 6-17 years with functional constipation, or FC. The trial met its primary and secondary endpoints, demonstrating that linaclotide 72 mcg improved frequency of spontaneous bowel movements and stool consistency. Linaclotide was generally well-tolerated, and the safety profile is

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consistent with previously reported studies with linaclotide in FC and irritable bowel syndrome in pediatric patients. In June 2023, the U.S. FDA approved LINZESS as a once-daily treatment for pediatric patients aged 6-17 years-old with functional constipation, making LINZESS the first and only FDA-approved prescription therapy for functional constipation in this patient population. The safety and effectiveness of LINZESS in patients with FC less than 6 years of age or in patients with IBS-C less than 18 years of age have not been established. Additional clinical pediatric programs in IBS-C and FC are ongoing.

Apraglutide. Refer to *Acquired In-Process Research and Development*.

IW-3718. We were developing IW-3718, a gastric retentive formulation of a bile acid sequestrant, for the potential treatment of refractory gastroesophageal reflux disease, or refractory GERD. In September 2020, we announced that one of our two identical Phase III trials evaluating IW-3718 in refractory GERD did not meet the pre-specified criteria associated with a planned early efficacy assessment and, based on these findings, we discontinued development of IW-3718.

IW-3300. We are developing IW-3300, a GC-C agonist, for the potential treatment of visceral pain conditions, including IC/BPS and endometriosis. We successfully completed Phase I studies to evaluate the safety and tolerability of IW-3300 in healthy volunteers and are continuing the Phase II proof of concept study in IC/BPS.

CNP-104. Through the COUR Collaboration Agreement, we and COUR are developing CNP-104 for the treatment of PBC, a rare autoimmune disease targeting the liver. In December 2021, the U.S. FDA granted Fast Track Designation to CNP-104. COUR is currently conducting a clinical study to evaluate the safety, tolerability, pharmacodynamic effects and efficacy of CNP-104 in PBC patients, with early topline data assessing T-cell response from patients enrolled in the clinical study expected in the second half third quarter of 2023. We expect that such early data will inform timing of topline data readout. 2024.

Early research and development. Our early research and development efforts have been focused on supporting our development stage GI programs, including exploring strategic options for further development of certain of our internal programs, as well as evaluating external development-stage GI programs.

The following table sets forth our research and development expenses related to our product pipeline for the three and six nine months ended June 30, 2023 September 30, 2023 and 2022, respectively. 2022. These expenses relate primarily to compensation, benefits and other employee-related expenses and external costs associated with nonclinical studies and clinical trial costs for our product candidates. We allocate costs related to facilities, depreciation, share-based compensation, research and development support services and certain other costs directly to programs.

	Three Months Ended June 30,		Six Months Ended June 30,		Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022	2023	2022	2023	2022
Linaclotide(1)	$ 5,825	$ 4,052	$ 11,260	$ 8,649	$ 5,120	$ 4,563	$16,380	$13,212
Apraglutide(3)	15,480	—	15,480	—	19,415	—	34,895	—
IW-3718	—	191	16	344	—	82	—	426
IW-3300	3,927	4,703	7,976	8,153	4,128	4,181	12,104	12,334
CNP-104(2)	6,548	182	7,035	317	968	273	8,003	589
Early research and development	2,797	2,324	5,657	4,811	3,354	2,446	9,027	7,258
Total research and development expenses	$ 34,577	$ 11,452	$ 47,424	$ 22,274	$32,985	$11,545	$80,409	$33,819

(1) Includes linaclotide in all indications, populations and formulations.
(2) Includes $6.0 million up-front payment recognized in the second quarter of 2023 in connection with the amendment to the COUR Collaboration Agreement.
(3) Includes $11.4 million $11.3 million of share-based compensation expense and $3.5 million of employer payroll tax expense recognized in the second quarter of 2023 immediately after the closing of the VectivBio Acquisition in connection with the vesting acceleration and settlement of outstanding stock options and RSUs.

The lengthy process of securing regulatory approvals for new drugs requires the expenditure of substantial resources. Any failure by us to obtain, or any delay in obtaining, regulatory approvals would materially adversely affect our product development efforts and our business overall.

We and AbbVie are exploring development opportunities to enhance the clinical profile of LINZESS by studying linaclotide in additional indications, populations and formulations to assess its potential to treat various conditions. We cannot currently estimate with any degree of certainty the amount of time or money that we will be required to expend in the future on linaclotide for additional indications, populations or formulations.

Given the inherent uncertainties that come with the development of pharmaceutical products, we cannot estimate with any degree of certainty how our programs will evolve, and therefore the amount of time or money that would be required to obtain regulatory approval to market them.

As a result of these uncertainties surrounding the timing and outcome of any approvals, we are currently unable to estimate precisely when, if ever, linaclotide's utility will be expanded within its currently approved indications; if or when linaclotide will be developed outside of its current markets, indications, populations or formulations; or when, if ever, any of our other product candidates will generate revenues and cash flows.

We invest carefully in our pipeline, and the commitment of funding for each subsequent stage of our development programs is dependent upon the receipt of clear, supportive data. In addition, we intend to access externally discovered drug candidates that fit within our core strategy. In evaluating these potential assets, we apply the same investment criteria as those used for investments in internally discovered assets.

The successful development of our product candidates is highly uncertain and subject to a number of risks including, but not limited to:

- The duration of clinical trials may vary substantially according to the type, complexity and novelty of the product candidate;
- The U.S. FDA and comparable agencies in foreign countries impose substantial and varying requirements on the introduction of therapeutic pharmaceutical products, typically requiring lengthy and detailed laboratory and clinical testing procedures, sampling activities and other costly and time-consuming procedures;
- Data obtained from nonclinical and clinical activities at any step in the testing process may be adverse and lead to discontinuation or redirection of development activity. Data obtained from these activities also are susceptible to varying interpretations, which could delay, limit or prevent regulatory approval;
- The duration and cost of early research and development, including nonclinical studies and clinical trials, may vary significantly over the life of a product candidate and are difficult to predict;
- The costs, timing and outcome of regulatory review of a product candidate may not be favorable, and, even if approved, a product may face post-approval development and regulatory requirements;
- There may be substantial costs, delays and difficulties in successfully integrating externally developed product candidates into our business operations; and
- The emergence of competing technologies and products and other adverse market developments may negatively impact us.

As a result of the factors discussed above, including the factors discussed under "Note Regarding Forward-Looking Statements" in this Quarterly Report on Form 10-Q, under "Part I, Item 1A – Risk Factors" in our 2022 Annual Report on Form 10-K and under "Risk Factors" in Item 1A of this Quarterly Report on Form 10-Q, we are unable to determine the duration and costs to complete current or future nonclinical and clinical stages of our product candidates or when, or to what extent, we will generate revenues from the commercialization and sale of our product candidates. Development timelines, probability of success and development costs vary widely. We anticipate that we will make determinations as to which additional programs to pursue and how much funding to direct to each program on an ongoing basis in response to the data of each product candidate, the competitive landscape and ongoing assessments of such product candidate's commercial potential.

We expect to invest in our development programs for the foreseeable future. We will continue to invest in linaclotide, including the investigation of ways to enhance the clinical profile within its currently approved indications,

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and the exploration of its potential utility in other indications, populations and formulations. We will continue to invest in our GI-focused product candidates as we advance them through pre-clinical and clinical trials, in addition to funding research and development activities under our external collaboration and license agreements.

Acquired In-Process Research and Development

Asset acquisition costs, license fees and development milestone payments related to acquired and in-licensed products and technology are expensed as acquired in-process research and development at the point that they have no established alternative future use.

Through the VectivBio Acquisition, we are advancing apraglutide, a next-generation, long-acting synthetic peptide analog of GLP-2, as a differentiated therapeutic for a wide range of rare diseases, including SBS-IF and acute Graft versus Host Disease, or aGvHD.

Apraglutide for SBS-IF. We are conducting a Phase III clinical trial, STARS, to assess the safety and efficacy of apraglutide in adult patients with SBS-IF, and expect to report topline results in March 2024. In addition to the STARS trial, we are conducting the STARS Nutrition and Open Label Extension studies to evaluate the efficacy, safety and tolerability of apraglutide in SBS-IF further and to support potential submissions of marketing applications for apraglutide in the United States, European Union, and Japan. In October 2023, we presented positive final data from the STARS Nutrition Phase II study of apraglutide in patients with SBS-IF and colon-in-continuity.

Apraglutide for aGvHD: We are conducting a phase Phase II proof-of-concept clinical trial, STARGAZE, to evaluate apraglutide in patients with steroid-refractory gastrointestinal aGvHD and expect data in the first quarter of 2024.

CoMET Platform: We, through the VectivBio Acquisition, also added the CoMET Platform, a small molecule platform technology that exploits the central role of Co-enzyme A, in intermediary metabolism and the significant dysregulation of this essential cofactor across multiple disorders. Ironwood is in the process of evaluating this asset and will provide additional detail details on plans in the future.

Selling, General and Administrative Expense. Selling, general and administrative expense consists primarily of compensation, benefits and other employee-related expenses for personnel in our administrative, finance, legal, information technology, business development, commercial, sales, marketing, communications and human resource functions. Other costs include legal costs of pursuing patent protection of our intellectual property, general and administrative related facility costs, insurance costs and professional fees for accounting, tax, consulting, legal and other services. As we continue to invest in the commercialization of LINZESS, we expect our selling, general and administrative expenses will be substantial for the foreseeable future.

We include AbbVie's selling, general and administrative cost-sharing payments in the calculation of the net profits and net losses from the sale of LINZESS in the U.S. and present the net payment to or from AbbVie as collaboration expense or collaborative arrangements revenue, respectively.

Restructuring Expenses. Restructuring expenses pertain to a workforce reduction in April 2023 and restructuring initiatives commencing in June 2023 in connection with the VectivBio Acquisition. The workforce reduction and restructuring initiatives are more fully described in Note 12, 13, *Workforce Reductions and Restructuring*.

Interest Expense and Other Financing Costs. Interest expense consists primarily of cash and non-cash interest costs related to our convertible senior notes and Revolving Credit Facility. Non-cash interest expense consists of amortization of debt issuance costs.

Interest and Investment Income. Interest and investment income consists of interest earned on our cash and cash equivalents, as well as significant financing components of payments due from collaboration partners.

Gain on Derivatives. In June 2015, we issued 2.25% Convertible Senior Notes due June 15, 2022, or the 2022 Convertible Notes, and in August 2019, we issued 0.75% Convertible Senior Notes due 2024, or the 2024 Convertible Notes, and 1.50% Convertible Senior Notes due 2026, or the

2026 Convertible Notes (together with the 2024 Convertible Notes, the Convertible Senior Notes). In connection with the issuance of our 2022 Convertible Notes, we entered into convertible note hedge transactions, or the Convertible Note Hedges, and separate note hedge warrant transactions, or the Note Hedge Warrants, with certain financial institutions. Gain on derivatives consists of the change

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in fair value of the Convertible Note Hedges and Note Hedge Warrants, which are recorded at fair value at each

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reporting date and changes in fair value are recorded in our condensed consolidated statements of income. income (loss). The Convertible Note Hedges and Note Hedge Warrants terminated unexercised upon expiry in June 2022 and April 2023, respectively. The Convertible Note Hedges and Note Hedge Warrants are more fully described in Note 8 9, *Notes Payable Debt*, to our condensed consolidated financial statements appearing elsewhere in this Quarterly Report on Form 10-Q.

Income Taxes. We prepare our income tax provision based on our interpretation of the income tax accounting rules and each jurisdiction's enacted tax laws and regulations and record our income tax provision by applying our estimated annual effective tax rate to year-to-date pre-tax income, plus adjustments for significant unusual or infrequently occurring items.

Critical Accounting Policies and Estimates

Our discussion and analysis of our financial condition and results of operations is based upon our condensed consolidated financial statements prepared in accordance with U.S. generally accepted accounting principles. The preparation of these financial statements requires us to make certain estimates and assumptions that may affect the reported amounts of assets and liabilities, the disclosure of assets and liabilities at the date of the condensed consolidated financial statements, and the amounts of revenues and expenses during the reported periods. We base our estimates on our historical experience and on various other assumptions that are believed to be reasonable, the results of which form the basis for making judgments about the carrying values of assets and liabilities. Actual results may differ materially from our estimates under different assumptions or conditions. Changes in estimates are reflected in reported results in the period in which they become known.

During the three and six nine months ended June 30, 2023 September 30, 2023, we added the following critical accounting policy to those reported in our 2022 Annual Report on Form 10-K.

Acquisitions

We evaluate acquisitions of assets and other similar transactions to assess whether the transaction should be accounted for as a business combination or asset acquisition by first applying a screen test to determine whether substantially all of the fair value of the gross assets acquired is concentrated into a single identifiable asset or group of similar identifiable assets. If the screen test is met, a single asset or group of assets is not a business and is accounted for as an asset acquisition. If the screen test is not met, further determination is required as to whether we have acquired inputs and processes that have the ability to create outputs that would meet the requirements of a business.

We account for business combinations using the acquisition method of accounting, which requires the acquiring entity to recognize the fair value of assets acquired and liabilities assumed and establishes the acquisition date as the fair value measurement point. We determine the fair value of assets acquired and liabilities assumed based on management's estimate of the fair value of assets acquired and

liabilities assumed in the acquisition. Goodwill represents the excess of the purchase price over the fair value of the net tangible and intangible assets acquired. Transaction costs are expensed as incurred.

We account for asset acquisitions that are not determined to be a business combination by recognizing net assets based on the consideration paid, inclusive of transaction costs, on a relative fair value basis. In an asset acquisition, the cost allocated to acquired in-process research and development ("IPR&D") with no alternative future use is charged to research and development expense at the acquisition date. We classify asset acquisitions of acquired IPR&D as investing activities on its condensed consolidated statements of cash flows.

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Results of Operations

The following discussion summarizes the key factors our management believes are necessary for an understanding of our condensed consolidated financial statements.

	Three Months Ended June 30,		Six Months Ended June 30,		Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022	2023	2022	2023	2022
	(in thousands)		(in thousands)		(in thousands)		(in thousands)	
Revenues:								
Collaborative arrangements revenue	$ 107,382	$ 97,231	$ 211,443	$194,760	$113,739	$108,637	$ 325,182	$303,397
Total revenues	107,382	97,231	211,443	194,760	113,739	108,637	325,182	303,397
Costs and expenses:								
Research and development	34,577	11,452	47,424	22,274	32,985	11,545	80,409	33,819
Selling, general and administrative	52,484	30,124	83,601	58,985	36,046	28,619	119,647	87,604
Restructuring expenses	13,011	—	13,011	—	4,685	—	17,696	—
Acquired in-process research and development	1,090,449	—	1,090,449	—	—	—	1,090,449	—
Total costs and expenses	1,190,521	41,576	1,234,485	81,259	73,716	40,164	1,308,201	121,423
Income (loss) from operations	(1,083,139)	55,655	(1,023,042)	113,501	40,023	68,473	(983,019)	181,974
Other income (expense):								
Interest expense and other financing costs	(1,840)	(2,207)	(3,367)	(4,548)	(9,839)	(1,524)	(13,206)	(6,072)
Interest and investment income	8,757	1,018	16,029	1,248	1,748	2,807	17,777	4,055
Gain (loss) on derivatives	—	(681)	19	49				
Gain on derivatives					—	151	19	200
Other income (expense), net	6,917	(1,870)	12,681	(3,251)	(8,091)	1,434	4,590	(1,817)
Income (loss) before income taxes	(1,076,222)	53,785	(1,010,361)	110,250	31,932	69,907	(978,429)	180,157
Income tax expense	(13,256)	(16,705)	(33,403)	(34,369)	(17,982)	(19,590)	(51,385)	(53,959)
Net income (loss) and comprehensive income (loss)	(1,089,478)	37,080	(1,043,764)	75,881				
Less: Net income (loss) and comprehensive income (loss) attributable to noncontrolling interests	(27,291)	—	(27,291)	—				
Net income (loss) and comprehensive income (loss) attributable to Ironwood Pharmaceuticals, Inc.	$ (1,062,187)	$ 37,080	$ (1,016,473)	$ 75,881				

Net income (loss)	13,950	50,317	(1,029,814)	126,198
Less: Net income (loss) attributable to noncontrolling interests	(1,371)	—	(28,662)	—
Net income (loss) attributable to Ironwood Pharmaceuticals, Inc.	$ 15,321	$ 50,317	$(1,001,152)	$126,198

Three and six nine months ended June 30, 2023 September 30, 2023 compared to three and six nine months ended June 30, 2022 September 30, 2022

Revenues

	Three Months Ended June 30,		Change	Six Months Ended June 30,		Change	Three Months Ended September 30,		Change	Nine Months Ended September 30,		Change
	2023	2022	$	2023	2022	$	2023	2022	$	2023	2022	$
	(in thousands)			(in thousands)			(in thousands)			(in thousands)		
Revenues:												
Collaborative arrangements revenue	$ 107,382	$ 97,231	$ 10,151	$ 211,443	$ 194,760	$ 16,683	$ 113,739	$ 108,637	$ 5,102	$325,182	$303,397	$21,785
Total revenues	$ 107,382	$ 97,231	$ 10,151	$ 211,443	$ 194,760	$ 16,683	$ 113,739	$ 108,637	$ 5,102	$325,182	$303,397	$21,785

Collaborative Arrangements Revenue. The increase in collaborative arrangements revenue of $10.2 million $5.1 million for the three months ended June 30, 2023 September 30, 2023 compared to the three months ended June 30, 2022 September 30, 2022 was related to a $10.3 million $4.9 million increase in our share of net profits from the sale of LINZESS in the U.S., which was primarily driven by increased prescription demand and net price, partially offset by inventory channel fluctuations.

The increase in collaborative arrangements revenue of $16.7 million $21.8 million for the six nine months ended June 30, 2023 September 30, 2023 compared to the six nine months ended June 30, 2022 September 30, 2022 was primarily related to a $17.6 million $22.5 million increase in our share of net profits from the sale of LINZESS in the U.S., which was driven by increased prescription demand and net price, partially offset by inventory channel fluctuations.

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Operating Expenses

	Three Months Ended June 30,		Change	Six Months Ended June 30,		Change	Three Months Ended September 30,		Change	Nine Months Ended September 30,		Change
	2023	2022	$	2023	2022	$	2023	2022	$	2023	2022	$
	(in thousands)			(in thousands)			(in thousands)			(in thousands)		
Operating expenses:												
Research and development	$ 34,577	$ 11,452	$ 23,125	$ 47,424	$ 22,274	$ 25,150	$32,985	$11,545	$21,440	$ 80,409	$ 33,819	$ 46,590
Selling, general and administrative	52,484	30,124	22,360	83,601	58,985	24,616	36,046	28,619	7,427	119,647	87,604	32,043
Restructuring expenses	13,011	—	13,011	13,011	—	13,011	4,685	—	4,685	17,696	—	17,696

Acquired in-process research and development	1,090,449	—	1,090,449	1,090,449	—	1,090,449	—	—	—	1,090,449	—	1,090,449
Total operating expenses	$ 1,190,521	$ 41,576	$ 1,148,945	$ 1,234,485	$ 81,259	$ 1,153,226	$73,716	$ 40,164	$33,552	$1,308,201	$121,423	$1,186,778

Research and Development Expense. The increase in research and development expense of $23.1 million $21.4 million for the three months ended June 30, 2023 September 30, 2023 compared to the three months ended June 30, 2022 September 30, 2022 was primarily related to $20.0 million in apraglutide costs.

The increase in research and development expense of $46.6 million for the nine months ended September 30, 2023 compared to the nine months ended September 30, 2022 was primarily related to $20.7 million of apraglutide costs, $11.3 million of share-based compensation expense and $3.5 million in related payroll taxes recognized immediately after the closing of the VectivBio Acquisition in connection with the vesting acceleration of outstanding stock options and RSUs under VectivBio's 2021 Equity Incentive Plan, a $6.0 million payment to COUR related to CNP-104 in connection with the amendment of the COUR Collaboration Agreement, a $3.5 million employer payroll tax obligation incurred upon the vesting acceleration of all VectivBio outstanding stock options and RSUs, and an increase of $1.1 million in linaclotide costs, and an increase of $0.9 million in compensation, benefits, and other employee-related expenses.

The increase in research and development expense of $25.2 million for the six months ended June 30, 2023 compared to the six months ended June 30, 2022 was primarily related to $11.3 million of share-based compensation expense recognized immediately after the closing of the VectivBio Acquisition in connection with the vesting acceleration of outstanding stock options and RSUs under VectivBio's 2021 Equity Incentive Plan, a $6.0 million payment to COUR related to CNP-104 in connection with the amendment of the COUR Collaboration Agreement, a $3.5 million employer payroll tax obligation incurred upon the vesting acceleration of all VectivBio outstanding stock options and RSUs, a $1.6 million $2.4 million increase in linaclotide costs, and a $1.4 million $1.8 million increase in compensation, benefits, and external costs associated with other employee-related expenses. pipeline programs.

Selling, General and Administrative Expense. Selling, general and administrative expenses increased by $22.4 million $7.4 million for the three months ended June 30, 2023 September 30, 2023 compared to the three months ended June 30, 2022 September 30, 2022, primarily due to $4.6 million of general and administrative costs incurred for operating activities of the acquired VectivBio entities (of which $0.5 million were acquisition-related), $2.8 million of professional services costs related to the VectivBio Acquisition, and a $0.9 million increase in compensation, benefits, and other employee-related expenses.

Selling, general and administrative expenses increased by $32.0 million for the nine months ended September 30, 2023 compared to the nine months ended September 30, 2022, primarily due to $16.2 million of share-based compensation expense recognized immediately after the closing of the VectivBio Acquisition in connection with the vesting acceleration of outstanding stock options and RSUs under VectivBio's 2021 Equity Incentive Plan, a $3.0 million employer payroll tax obligation incurred upon the vesting acceleration of all VectivBio outstanding stock options and RSUs, a $1.1 million increase in compensation, benefits, and other employee-related expenses, and a $0.9 million increase in sales and marketing activities.

Selling, general and administrative expenses increased by $24.6 million for the six months ended June 30, 2023 compared to the six months ended June 30, 2022, primarily due to $16.2 million of share-based compensation expense as well as $3.0 million in related payroll taxes recognized immediately after the closing of the VectivBio Acquisition in connection with the vesting acceleration of outstanding stock options and RSUs under VectivBio's 2021 Equity Incentive Plan, $5.9 million of general and administrative costs incurred for operating activities of the acquired VectivBio entities (of which $1.4 million were acquisition-related), a $3.0 million employer payroll tax obligation incurred upon the vesting acceleration of all VectivBio outstanding stock options and RSUs, a $2.8 million $3.7 million increase in compensation, benefits, and other employee-related expenses, and a $1.1 million increase $3.3 million in sales and marketing activities. professional services costs related to the VectivBio Acquisition.

Acquired In-Process Research & Development. We incurred approximately $1 billion $1.1 billion of expense during the three and six nine months ended June 30, 2023 September 30, 2023 in connection with the VectivBio Acquisition to acquire apraglutide.

Other Income (Expense), Net

Three Months Ended June 30,		Change	Six Months Ended June 30,		Change	Three Months Ended September 30,		Change	Nine Months Ended September 30,		Change
2023	2022	$	2023	2022	$	2023	2022	$	2023	2022	$

	(in thousands)			(in thousands)			(in thousands)			(in thousands)		
Other income (expense):												
Interest expense and other financing costs	$ (1,840)	$ (2,207)	$ 367	$ (3,367)	$ (4,548)	$ 1,181	$ (9,839)	$ (1,524)	$ (8,315)	$ (13,206)	$ (6,072)	$ (7,134)
Interest and investment income	8,757	1,018	7,739	16,029	1,248	14,781	1,748	2,807	(1,059)	17,777	4,055	13,722
Gain (loss) on derivatives	—	(681)	681	19	49	(30)						
Gain on derivatives							—	151	(151)	19	200	(181)
Total other income (expense), net	$ 6,917	$ (1,870)	$ 8,787	$ 12,681	$ (3,251)	$ 15,932	$ (8,091)	$ 1,434	$ (9,525)	$ 4,590	$ (1,817)	$ 6,407

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Interest Expense and Other Financing Costs. Interest expense decreased increased by $0.4 million $8.3 million during the three months ended June 30, 2023 September 30, 2023 compared to the three months ended June 30, 2022 September 30, 2022 primarily due to the decrease in coupon $8.3 million of interest expense associated with incurred under the 2022 Convertible Notes, which were fully repaid upon maturity revolving credit facility used to partially finance the VectivBio Acquisition in June 2022. 2023.

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Interest expense decreased increased by $1.2 million $7.1 million during the six nine months ended June 30, 2023 September 30, 2023 compared to the six nine months ended June 30, 2022 September 30, 2022 primarily due to $8.6 million of interest expense incurred under the revolving credit facility used to partially finance the VectivBio Acquisition, partially offset by a $1.5 million decrease in coupon interest expense associated with the 2022 Convertible Notes, which were fully repaid upon maturity in June 2022.

Interest and Investment Income. Interest and investment income increased decreased by $7.7 million $1.1 million in the three months ended June 30, 2023 September 30, 2023 compared to the three months ended June 30, 2022 September 30, 2022 primarily from a decrease in investment balances following the VectivBio acquisition in June 2023, partially offset by an increase in investment interest rates and investment balances. rates.

Interest and investment income increased by $14.8 million $13.7 million in the six nine months ended June 30, 2023 September 30, 2023 compared to the six nine months ended June 30, 2022 September 30, 2022 primarily from an increase in investment interest rates and investment balances.

Gain (Loss) on Derivatives. For the three months ended June 30, 2022 September 30, 2022, we recorded a loss gain on derivatives of $0.7 million $0.2 million resulting from a $1.4 million $0.2 million decrease in the fair value of the Note Hedge Warrants, which terminated unexercised upon expiry during June 2022, and a $0.7 million decrease in the fair value of the Note Hedge Warrants. April 2023.

For the six nine months ended June 30, 2023 September 30, 2023, we recorded an insignificant gain on derivatives resulting from a decrease in the fair value of the Note Hedge Warrants. For the six nine months ended June 30, 2022 September 30, 2022, we recorded a gain on derivatives

of an insignificant amount $0.2 million resulting from a $1.1 million decrease in the fair value of the Convertible Note Hedges, which terminated unexercised upon expiry during June 2022, and a $1.2 million $1.3 million decrease in the fair value of the Note Hedge Warrants.

Income Tax Expense. For the three and six nine months ended June 30, 2023 September 30, 2023, we recorded income tax expense of $13.3 million $18.0 million and $33.4 million $51.4 million, respectively. For the three and the six nine months ended June 30, 2022 September 30, 2022, we recorded income tax expense of $16.7 million $19.6 million and $34.4 million $54.0 million, respectively. Due to our ability to utilize our net operating losses to offset federal taxable income and taxable income in most states, the majority of our tax provision will be a non-cash expense until our net operating losses have been fully utilized.

Liquidity and Capital Resources

As of June 30, 2023 September 30, 2023, we had $175.3 million $110.2 million of unrestricted cash and cash equivalents. Our cash equivalents include amounts held in money market funds, repurchase agreements, U.S. Treasury securities, and commercial paper. We invest cash in excess of immediate requirements in accordance with our investment policy, which limits the amounts we may invest in certain types of investments and requires all investments held by us to be at least A- rated, with a remaining final maturity when purchased of less than twenty-four months, so as to primarily achieve liquidity and capital preservation objectives.

We anticipate our cash balance and our expected net cash inflows from operations to allow us to meet our near-term and long-term cash obligations, which are reflected in our condensed consolidated balance sheets. Our most significant fixed obligations are debt obligations and lease commitments, for which annual payments are disclosed in Note 9, *Debt*, and Note 8, *Leases*, respectively, to our financial statements included elsewhere in this Quarterly Report on Form 10-Q.

We may from time to time seek to retire, redeem or repurchase all or part of our outstanding debt through cash purchases and/or exchanges, in open market purchases, privately negotiated transactions, by tender offer or otherwise. Such repurchases, redemptions or exchanges, if any, of our debt will depend on prevailing market conditions, liquidity requirements, contractual restrictions and other factors, and the amounts involved may be material.

In May 2021, the board of directors authorized a program to repurchase up to $150.0 million of our Class A Common Stock. The program was completed in May 2022 and the repurchased shares were retired. During the three and six months ended June 30, 2022, 2022, the Company repurchased 2.8 million shares and 10.8 million shares of Class A Common Stock, respectively, at an aggregate cost of $32.9 million and $123.4 million, respectively. .

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Sources of Liquidity

We had incurred losses since our inception in 1998 and until the year ended December 31, 2019. However, after achieving profitability for the years ended December 31, 2020, 2021 and 2022, we incurred a loss of approximately $1.1 billion $1.0 billion for the six-month period ending June 30, 2023 nine months ended September 30, 2023 in connection with the VectivBio Acquisition and had an accumulated deficit of approximately $1.7 billion as of June 30, 2023 September 30, 2023. We have financed our operations to date primarily through both the private sale of our preferred stock and the public sale of our common stock, debt financings, and cash generated from our operations. As of June 30, 2023 September 30, 2023, our debt is comprised of $400.0 million aggregate principal amount of convertible notes, due at various dates between 2024 and 2026, and $400.0 million $325.0 million aggregate principal amount outstanding under our Revolving Credit Facility, which we entered into in May 2023 in connection with the VectivBio Acquisition and the amount of the borrowings thereunder were used to partially finance the VectivBio Acquisition. The Revolving Credit Facility provides for $500.0 million of borrowing capacity and includes a $10.0 million letter of credit subfacility. Refer to Note 9, *Debt,* to our condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q, for information related to our debt obligations, including the Revolving Credit Facility.

Summary of Cash Flows

The following table summarizes cash flows from operating, investing, and financing activities for the three and six nine months ended June 30, 2023 September 30, 2023 and 2022:

	Three Months Ended June 30,		Six Months Ended June 30,		Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022	2023	2022	2023	2022
	(in thousands)		(in thousands)		(in thousands)		(in thousands)	
Net cash provided by (used in):								
Operating activities	$ 34,963	$ 61,365	$ 115,134	$ 125,489	$ 32,459	$69,092	$ 147,593	$ 194,581
Investing activities	(999,492)	(88)	(999,505)	(97)	(22,625)	(66)	(1,022,130)	(163)
Financing activities	399,071	(150,283)	403,052	(241,156)	(74,988)	797	328,064	(240,359)
Effect of exchange rate changes on cash, cash equivalents and restricted cash					(3)	—	(3)	—
Net increase (decrease) in cash, cash equivalents and restricted cash	$ (565,458)	$ (89,006)	$ (481,319)	$ (115,764)	$(65,157)	$69,823	$ (546,476)	$ (45,941)

Cash Flows from Operating Activities

Net cash provided by operating activities is derived by adjusting net income (loss) for non-cash items and changes in operating assets and liabilities, which reflect timing differences between the receipt and payment of cash associated with transactions and when they are recognized in the results of operations. Net cash inflows for the three and six nine months ended June 30, 2023 September 30, 2023 were $35.0 million $32.5 million and $115.1 million $147.6 million, respectively, and were primarily from collaboration arrangements revenue related to sales of LINZESS in the U.S. Net cash inflows for the three and six nine months ended June 30, 2022 September 30, 2022 were $61.4 million $69.1 million and $125.5 million $194.6 million, respectively, and were primarily from collaboration arrangements revenue related to sales of LINZESS in the U.S.

Cash Flows from Investing Activities

Cash used in investing activities for each of the three and six nine months ended June 30, 2023 September 30, 2023 was $999.5 million $22.6 million and approximately $1.0 billion, respectively, and pertained primarily to the VectivBio Acquisition.

Cash used in investing activities for each of the three and six nine months ended June 30, 2022 September 30, 2022 was insignificant and pertained to the purchase of property and equipment.

Cash Flows from Financing Activities

Cash provided by used in financing activities for the three and six months ended June 30, 2023 September 30, 2023 totaled $399.1 million $75.0 million and $403.1 million, respectively, related primarily to the repayment of borrowings under the Revolving Credit Facility. Cash provided by financing

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activities for the nine months ended September 30, 2023 totaled $328.1 million and was generated primarily from the incurrence of $400.0 million of borrowings under the Revolving Credit Facility, net of costs, in $75.0 million of principal repayments.

Cash provided by financing activities for the second quarter of 2023, as well as $1.3 million three months ended September 30, 2022 totaled $0.8 million and $5.3 million, respectively was generated from proceeds from the exercise of stock options and the issuance of shares under our employee stock purchase plan.

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options. Cash used in financing activities for the three and six nine months ended June 30, 2022 September 30, 2022 totaled $150.3 million and $241.2 million $240.4 million, respectively, and resulted from $33.9 million and $126.4 million of share repurchases respectively, and repayment of the $120.7 remaining aggregate principal on the 2022 Convertible Notes upon maturity in June 2022, partially offset by $4.3 million and $5.9 million $6.7 million of proceeds from the exercise of stock options and the issuance of shares under our employee stock purchase plan, respectively. plan.

Funding Requirements

We began commercializing LINZESS in the U.S. with our collaboration partner, AbbVie, in the fourth quarter of 2012, and we currently derive a significant portion of our revenue from this collaboration. In addition, we are deploying significant resources to fulfill U.S. FDA requirements for linaclotide. Our goal is to generate and maintain positive cash flows, driven by increased revenue generated through sales of LINZESS and other commercial activities and financial discipline.

Under our collaboration with AbbVie for North America, total net sales of LINZESS in the U.S., as recorded by AbbVie, are reduced by commercial costs incurred by each party, and the resulting amount is shared equally between us and AbbVie. Additionally, we receive royalties from AbbVie based on sales of linaclotide in its licensed territories outside of the U.S. We believe revenues from our LINZESS partnership for the U.S. with AbbVie will continue to constitute a significant portion of our total revenue for the foreseeable future and we cannot be certain that such revenues, as well as the revenues from our other commercial activities, will continue to enable us to generate positive cash flows, or to do so in the timeframes we expect. We also anticipate that we will continue to incur substantial expenses for the next several years as we further develop and commercialize linaclotide in the U.S., develop and commercialize other products, including apraglutide, and invest in building our pipeline through internal or external opportunities, including potential payments associated with exercising the Option under the COUR Collaboration Agreement. We believe that our cash on hand as of June 30, 2023 September 30, 2023 will be sufficient to meet our projected operating needs at least through the next twelve months from the issuance of these financial statements.

Our forecast of the period of time through which our financial resources will be adequate to support our operations, including the underlying revenue expectations and estimates regarding the costs to continue to develop, obtain regulatory approval for, and commercialize linaclotide in the U.S., as well as our expectations regarding revenue from Astellas for Japan and AstraZeneca for China (including Hong Kong and Macau), and our goal to generate and maintain positive cash flows, are forward-looking statements that involve risks and uncertainties. Our actual results could vary materially and negatively from these and other forward-looking statements as a result of a number of factors, including the factors discussed under the headings “Note Regarding Forward-Looking Statements” in this Quarterly Report on Form 10-Q, under “Part I, Item 1A—Risk Factors” in our 2022 Annual Report on Form 10-K and under “Risk Factors” in Item 1A of this Quarterly Report on Form 10-Q. We have based our estimates on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we currently expect.

Due to the numerous risks and uncertainties associated with the development and commercialization of our product candidates, we are unable to estimate precisely the amounts of capital outlays and operating expenditures necessary to develop, obtain regulatory approval for, and commercialize linaclotide and our other product candidates, in each case, for all of the markets, indications, populations and formulations for which we believe each is suited. Our funding requirements will depend on many factors, including, but not limited to, the following:

- the revenue generated by sales of LINZESS and CONSTELLA and from any other sources;
- the rate of progress and cost of our commercialization activities, including the expense we incur in marketing and selling LINZESS in the U.S. and from any other sources;
- the success of our third-party manufacturing activities;
- the time and costs involved in developing, and obtaining regulatory approvals for, our product candidates, as well as the timing and cost of any post-approval development and regulatory requirements;

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- the time and cost associated with integrating VectivBio's business and assets into our business operations operations;
- the time and cost associated with advancing apraglutide and other assets acquired in the VectivBio Acquisition;

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- the success of our research and development efforts;
- the emergence of competing or complementary products;
- the costs of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights;
- the terms and timing of any collaborative, licensing or other arrangements that we may establish, including milestones, royalties or other payments due or payable under such agreements;
- the settlement method used for our outstanding convertible notes; and
- the acquisition of businesses, products and technologies and the impact of other strategic transactions, as well as the cost and timing of evaluating, acquiring, and, if completed, integrating into our business operations any such assets.

Financing Strategy

We may, from time to time, consider additional funding through a combination of new collaborative arrangements, strategic alliances, and additional equity and debt financings or from other sources. We will continue to manage our capital structure and to consider all financing opportunities, whenever they may occur, that could strengthen our long-term liquidity profile. Any such capital transactions may or may not be similar to transactions in which we have engaged in the past. There can be no assurance that any such financing opportunities will also be available on acceptable terms, if at all.

New Accounting Pronouncements

For a discussion of recent accounting pronouncements, refer to Note 2, *Summary of Significant Accounting Policies*, to our consolidated financial statements in our 2022 Annual Report on Form 10-K and Note 2, *Summary of Significant Accounting Policies*, appearing elsewhere in this Quarterly Report on Form 10-Q.

Item 3. *Quantitative and Qualitative Disclosures about Market Risk*

Interest Rate Risk

We are exposed to market risk related to changes in interest rates. We invest our cash in a variety of financial instruments, principally securities issued by the U.S. government and its agencies, including collateralized reverse repurchase agreements, and money market instruments, as well as commercial paper and corporate bonds. The goals of our investment policy are preservation of capital, fulfillment of

liquidity needs and fiduciary control of cash and investments. We also seek to maximize income from our investments without assuming significant risk.

Our primary exposure to market risk is interest income sensitivity, which is affected by changes in the general level of interest rates, particularly because our investments are in short-term marketable securities. Due to the primarily short-term duration of our investment portfolio and the low risk profile of our investments, an immediate 1% change in interest rates would not have a material effect on the fair market value of our portfolio. Accordingly, we would not expect our operating results or cash flows to be affected to any significant degree by the effect of a sudden change in market interest rates on our investment portfolio.

We do not believe our cash and cash equivalents have significant risk of default or illiquidity. While we believe our cash and cash equivalents do not contain excessive risk, we cannot provide absolute assurance that in the future our investments will not be subject to adverse changes in market value. In addition, we maintain significant amounts of cash and cash equivalents at one or more financial institutions that are in excess of federally insured limits. Given the

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potential instability of financial institutions, we cannot provide assurance that we will not experience losses on these deposits.

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Our Convertible Senior Notes bear interest at a fixed rate and therefore have minimal exposure to changes in interest rates; however, because these interest rates are fixed, we may be paying a higher interest rate, relative to market, in the future if our credit rating improves or other circumstances change.

We are exposed to market risks related to fluctuations in interest rates relating to our four-year secured $500.0 million Revolving Credit Facility. The increase or decrease in annual interest expense resulting from a 10% increase or decrease in the applicable interest rate is $3.2 million $2.5 million.

Equity Price Risk

Our convertible notes include conversion and settlement provisions that are based on the price of our Class A Common Stock at conversion or maturity of the notes. The amount of cash we may be required to pay is determined by the price of our Class A Common Stock. The fair values of our convertible notes are dependent on the price and volatility of our Class A Common Stock and will generally increase or decrease as the market price of our common stock changes.

To minimize the impact of potential dilution to our common stock upon conversion of the notes, we entered into the Convertible Note Hedges and Note Hedge Warrants, with respect to the 2022 Convertible Notes, and the Capped Calls, with respect to the 2024 Convertible Notes and 2026 Convertible Notes. The Convertible Note Hedges and Note Hedge Warrants terminated unexercised upon expiry in June 2022 and April 2023, respectively.

The convertible notes and derivatives are more fully described in Note 8, 9, *Notes Payable, Debt,* in the accompanying notes to our condensed consolidated financial statements appearing elsewhere in this Quarterly Report on Form 10-Q.

Foreign Currency Risk

We are also exposed to risks related to changes in foreign currency exchange rates relating to our foreign operations. The functional currency of our international subsidiaries is the local currency. We are exposed to foreign currency risk to the extent that we enter into transactions denominated in currencies other than our subsidiaries' respective functional currencies. We are also exposed to unfavorable fluctuations of the U.S. dollar, which is our reporting currency, against the currencies of our operating subsidiaries when their respective financial statements are translated into U.S. dollars for inclusion in our condensed consolidated financial statements. We do not currently hedge our foreign currency exchange rate risk. Foreign currency has not had, nor do we believe that a decrease or increase in any foreign currency exchange rates would have, a material impact on our results of operations.

Item 4. *Controls and Procedures*

Limitations on Effectiveness of Controls and Procedures

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 required by Rule 13a-15(b) of the Securities Exchange Act of 1934, or Exchange Act, our management, including our principal executive officer and our principal financial officer, conducted an evaluation as of the end of the period covered by this Quarterly Report on Form 10-Q of the effectiveness of the design and operation of our disclosure controls and procedures. Based on that evaluation, our principal executive officer and principal financial officer concluded that our disclosure controls and procedures are effective at the reasonable assurance level in ensuring that information required to be disclosed by us in the reports that 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. Disclosure controls

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and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by us in the reports we file under the Exchange Act is accumulated and communicated to our management,

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including our principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure.

Changes in Internal Control Over Financial Reporting

As permitted by guidance issued by the SEC that an assessment of internal control over financial reporting of a recently acquired business may be omitted from management's evaluation of disclosure controls and procedures, management excluded an assessment of the internal controls of VectivBio, which we acquired on June 29, 2023, from its evaluation of the effectiveness of our disclosure controls and procedures. VectivBio represented 7% 8% of our consolidated total assets and less than 1% of our consolidated total revenues as of and for the six nine months ended June 30, 2023 September 30, 2023. We are in the process of integrating VectivBio into our system of internal control over financial reporting.

Other than with respect to the integration of VectivBio into our system of internal control over financial reporting, there have been no changes in our internal control over financial reporting that occurred during the quarter ended June 30, 2023 September 30, 2023 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

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PART II OTHER INFORMATION

Item 1A. ***Risk Factors***

Our business faces significant risks and uncertainties. Certain important factors may have a material adverse effect on our business prospects, financial condition and results of operations, and you should carefully consider them. Accordingly, in evaluating our business, we encourage you to carefully consider the discussion of risk factors in "Part I, Item 1A—Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2022, filed with the Securities and Exchange Commission, or the SEC, on February 16, 2023, or the 2022 Annual Report on Form 10-K, in addition to other information contained in or incorporated by reference into this Quarterly Report on Form 10-Q.

There were no material changes from the risk factors previously disclosed in the 2022 Annual Report on Form 10-K, other than the risk factors set forth below.

Risks Related to the VectivBio Acquisition

We may be unable to successfully integrate the business and personnel of VectivBio, and may not realize the expected benefits and anticipated synergies of such acquisition.

In June 2023, we completed a tender offer to purchase the outstanding ordinary shares of VectivBio Holding AG, or VectivBio, a clinical-stage biotechnology company focused on the discovery and development of treatments for severe, rare conditions for which there is a significant unmet medical need, or the VectivBio Acquisition. We may not realize the expected benefits from such acquisition because of integration difficulties or other challenges.

The success of the VectivBio Acquisition will depend, in part, on our ability to realize all or some of the expected benefits from the acquisition and anticipated synergies from integrating its business with our existing business. The integration process may be complex, costly and time-consuming and we may not ultimately realize the return on our investment. Risks we may face in connection with the VectivBio Acquisition include, among others:

- failure to successfully implement our business plans for the combined business, including the development of apraglutide for SBS-IF;
- failure of the VectivBio Acquisition to further our business strategy as we expected, including the development and, if approved, the commercialization of apraglutide for SBS-IF;
- unexpected losses of key employees, customers or suppliers, and the complexities associated with integrating personnel from another company;
- unanticipated issues in conforming VectivBio's standards, processes, procedures and controls with our operations;
- coordinating product candidate and process development;
- increasing the scope, geographic diversity and complexity of our operations;
- diversion of management's attention from other business concerns;
- adverse effects on our or VectivBio's existing business relationships;

- unanticipated changes in applicable laws and regulations;
- unanticipated expenses and liabilities associated with the VectivBio Acquisition; and
- other difficulties in the assimilation of VectivBio operations, technologies, product candidates and systems.

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We may have unanticipated or larger than anticipated liabilities for patent and trademark infringement claims, violations of laws, commercial disputes, taxes and other known and unknown types of liabilities. There may be liabilities that we underestimated or did not discover in the course of performing our due diligence investigation.

If we experience difficulties with the integration process or if the business of VectivBio deteriorates, the anticipated cost savings, growth opportunities and other synergies of the VectivBio Acquisition may not be realized fully or at all, or may take longer to realize than expected. If any of the above risks occur, our business, financial condition, results of operations and cash flows may be materially and adversely impacted, we may fail to meet the expectations of investors or analysts, and our stock price may decline as a result.

The VectivBio Acquisition increases our exposure to doing business in foreign jurisdictions.

VectivBio is headquartered in Basel, Switzerland and has employees and operations in foreign jurisdictions. Operating in foreign jurisdictions exposes us to additional risks such as: fluctuations in currency exchange rates; compliance with different legal and regulatory environments; foreign regulatory regimes applicable to clinical trials and obtaining approvals for product candidates; compliance with applicable data privacy laws and regimes such as the E.U. General Data Protection Regulation, or GDPR, the United Kingdom's GDPR and the Swiss Federal Act on Data Protection; risk relating to the political and economic status of foreign governments; differences in the manner in which different cultures do business; difficulties in staffing and managing foreign operations; differences in financial reporting; and operating difficulties; among other factors. The realization of any of these risks, if severe enough, could have an adverse effect on our consolidated financial position, results of operations and cash flows.

Risks Related to Apraglutide

We cannot give any assurance that apraglutide will receive regulatory approval, which is necessary before it can be commercialized.

Upon the closing of the VectivBio Acquisition, we added apraglutide, VectivBio's lead investigational asset, a next generation, long-acting GLP-2 analog in development for the treatment of patients with short bowel syndrome with Intestinal Failure, or SBS-IF, to our pipeline.

Apraglutide will require extensive clinical development, management of nonclinical, clinical and manufacturing activities, regulatory approval, adequate manufacturing supply, and if approved, fully integrating apraglutide into the commercial infrastructure to support with the appropriate sales, marketing, and market access efforts to generate sales in pursuit of revenue. We have not yet completed a pivotal trial for this product candidate. We are not permitted to market or promote this product candidate before we receive regulatory approval from the United States Food and Drug Administration, or U.S. FDA, the European Medicines Agency, or EMA, or comparable foreign regulatory authorities in the applicable jurisdiction, and we may never receive any such regulatory approval for apraglutide. To obtain regulatory approvals for apraglutide, we must demonstrate with substantial evidence from adequate and well-controlled clinical trials, and to the satisfaction of the U.S. FDA, EMA or comparable foreign regulatory authorities, that such product candidates are safe and effective for their intended uses. However, we cannot be certain that apraglutide will be successful in clinical trials. Further, results from clinical trials can be interpreted in different ways, and apraglutide may not receive regulatory approval even if we believe it is successful in clinical trials. Even if we do receive such regulatory approval, we may be unable to successfully commercialize apraglutide within any approved indications or develop apraglutide for the treatment of additional indications, which would materially adversely impact our business and prospects.

The regulatory approval processes in the U.S., in the E.U. and in other foreign jurisdictions are lengthy, time consuming and inherently unpredictable. If we are ultimately unable to obtain regulatory approval for apraglutide, our business will be harmed.

The time required to obtain regulatory approval from the U.S. FDA, EMA and other comparable regulatory authorities is unpredictable, typically takes many years following the commencement of clinical trials and depends upon numerous factors. In addition, regulatory approval policies, regulations, or the type and amount of clinical data necessary to gain regulatory approval may change during the course of

a product candidate's clinical development and may vary among jurisdictions, which may cause delays in the regulatory approval of or may result in the decision not to approve apraglutide. Regulatory approval is never guaranteed. Data obtained from preclinical studies and clinical trials are susceptible to varying interpretations,and regulatory authorities may not interpret our data as favorably as we do, which

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may further delay, limit or prevent development efforts, clinical trials, or regulatory approval. Even if we believe the preclinical or clinical data for our product candidates are sufficient to support approval, such data may not be considered sufficient to support approval by the U.S. FDA, EMA and other comparable regulatory authorities.Of authorities. Of the large number of drugs in development, only a small percentage successfully complete the U.S. FDA, EMA or comparable regulatory approval processes and are commercialized. Accordingly, it is possible that we will never obtain regulatory approval for apraglutide.

The U.S. FDA, EMA or other comparable regulatory authorities may delay, limit, or deny approval of our product candidates, including apraglutide, for many reasons, including the following:

- the U.S. FDA, EMA or other comparable foreign regulatory authorities may disagree with the design or implementation of our clinical trials or with our interpretation of data from preclinical studies or clinical trials;
- the population studied in the clinical program may not be sufficiently broad or representative to assure safety or efficacy in the full population for which we seek approval;
- the data collected from our clinical trials may not be sufficient to support the submission of a New Drug Application, Marketing Authorisation Application, or other submission or to obtain regulatory approval in the U.S., Europe or elsewhere;
- participants in our clinical trials or by individuals using drugs similar to apraglutide may experience serious and unexpected drug-related side effects;
- we may be unable to demonstrate to the U.S. FDA, EMA or other comparable foreign regulatory authorities that apraglutide's risk-to-benefit ratio for its proposed indications is acceptable;
- the U.S. FDA, EMA or the applicable foreign regulatory authority may disagree regarding the formulation, labeling and/or the specifications of apraglutide;
- the U.S. FDA, EMA or other comparable foreign regulatory authorities may fail to approve the manufacturing processes, test procedures and specifications, or facilities of third-party manufacturers with which we contract for clinical and commercial supplies; and
- the regulatory approval policies or regulations of the U.S. FDA, the EMA, or other applicable comparable foreign regulations in the European Union and other jurisdictions may significantly change in a manner rendering our clinical data insufficient for approval.

In addition, we plan to develop a proprietary injection device for apraglutide, which would cause it to be regulated as drug and device combination product by the U.S. FDA, the EMA and comparable foreign regulatory authorities. Developing and obtaining regulatory approval for combination products can pose unique challenges because they involve components that are regulated under different types of regulatory requirements and potentially by different U.S. FDA centers or regulatory authorities. As a result, combination product candidates may raise regulatory, policy and review challenges. Differences in regulatory pathways for each component of a combination product can impact the regulatory processes for all aspects of product development and management, including clinical investigation, marketing applications, manufacturing and quality control, adverse event reporting, promotion and advertising, user fees and post-approval modifications. Although the U.S. FDA, EMA, and comparable foreign authorities have systems in place for the review and approval of combination products such as a proprietary injection device for apraglutide, we may experience additional delays in the development and commercialization of apraglutide due to regulatory timing constraints and uncertainties in the product development and approval process. Moreover, although we expect that the device component would be reviewed in connection with the review of the drug marketing application for apraglutide, if and when submitted, and that no separate marketing authorization or certification for the device component will be required, the U.S. FDA, EMA or comparable regulatory authorities may disagree and require that we obtain a separate marketing authorization or certification for the device component, which could further delay or prevent regulatory approval of apraglutide.

This lengthy regulatory approval process, as well as the unpredictability of the results of clinical trials, may result in our failure to obtain regulatory approval to potentially market apraglutide, which would significantly harm our business, results of operations, and prospects.

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Risks Related to Our Finances and Capital Requirements

Our indebtedness could adversely affect our financial condition or restrict our future operations.

As of June 30, 2023 September 30, 2023, we had total indebtedness of $800.0 million $725.0 million and available cash and cash equivalents of $175.3 million $110.2 million.

We incurred significant new indebtedness in connection with the VectivBio Acquisition. In May 2023, we entered into a four-year $500.0 million secured revolving credit facility, or the Revolving Credit Facility, which includes a $10.0 million letter of credit subfacility. In June 2023, we borrowed $400.0 million to fund a portion of the consideration paid to purchase VectivBio's outstanding ordinary shares in connection with the VectivBio Acquisition. In September 2023, we repaid $75.0 million of the outstanding principal balance.

The agreement governing the Revolving Credit Facility, or the Revolving Credit Agreement, contains certain covenants applicable to us and certain of our subsidiaries that may, under certain circumstances, impose significant operating and financial restrictions on us, including, without limitation, limitations on additional indebtedness, liens, various fundamental changes, dividends and distributions, investments (including acquisitions), transactions with affiliates, asset sales, prepayment of junior financing, changes in business and other limitations customary in senior secured credit facilities. The Revolving Credit Agreement also includes cross-default features providing that defaults under certain other indebtedness would result in a default under the Revolving Credit Agreement. In addition, the Revolving Credit Agreement requires us to maintain a maximum consolidated secured net leverage ratio of 3.00 to 1.00 and a minimum interest coverage ratio of 3.00 to 1.00, in each case at the end of each fiscal quarter. The Revolving Credit Agreement allows us to elect to increase the permitted maximum consolidated secured net leverage ratio to 3.50 to 1.00 for four fiscal quarters in the event we consummate an acquisition for consideration in excess of $50 million, subject to certain limitations on how often this election can be made. Additionally, the lenders under the Revolving Credit Agreement will be permitted to accelerate all outstanding borrowings and other obligations, terminate outstanding commitments and exercise other specified remedies upon the occurrence of customary events of default.

In addition, while none of the indentures governing our August 2019 issuance of our 0.75% Convertible Senior Notes due 2024, or the 2024 Convertible Notes, and our 1.50% Convertible Senior Notes due 2026, or the 2026 Convertible Notes, and together with the 2024 Convertible Notes, the Convertible Senior Notes, include covenants restricting the operation of our business except in certain limited circumstances, in the event of a default under any of the Convertible Senior Notes, the applicable noteholders or the trustee under the indenture governing the applicable Convertible Senior Notes may accelerate our payment obligations under such Convertible Senior Notes, which could have a material adverse effect on our business, financial condition and results of operations. We are also required to offer to repurchase the Convertible Senior Notes upon the occurrence of a fundamental change, which could include, among other things, any acquisition of our company (other than an acquisition in which at least 90% of the consideration is Class A Common Stock listed on The Nasdaq Global or Global Select Market or The New York Stock Exchange), subject to the terms of each of the indenture governing the Convertible Senior Notes. The repurchase price must be paid in cash, and this obligation may have the effect of discouraging, delaying or preventing an acquisition of our company that would otherwise be beneficial to our security holders.

Each of the indentures governing our Convertible Senior Notes also includes cross-default features providing that certain failures to pay for outstanding indebtedness would result in a default under the indentures governing our Convertible Senior Notes. In the event of such default, the trustee or noteholders could elect to declare all amounts outstanding to be immediately due and payable under the applicable indenture, which could have a material adverse effect on our business, financial condition and results of operations.

To the extent we become subject to such covenants, our ability to comply with such covenants in future periods will depend on our ongoing financial and operating performance, which in turn will be subject to economic conditions and to financial, market and competitive factors, many of which are beyond our control. The ability to comply with these covenants in future periods will also depend on our ability to successfully implement our overall business strategy and

realize the anticipated benefits of the VectivBio Acquisition, including synergies, cost savings, innovation and operational efficiencies.

Our significant indebtedness, combined with our other financial obligations and contractual commitments, could have important consequences on our business, including:

- limiting our ability to obtain additional financing to fund future working capital, capital expenditures orother general corporate purposes, including product development, commercialization efforts, research and development activities, strategic arrangements, acquisitions and refinancing of our outstanding debt;
- requiring a substantial portion of our cash flows to be dedicated to debt service payments instead ofother purposes, thereby reducing the amount of cash flows available for working capital, capital expenditures, corporate transactions and other general corporate purposes;
- increasing our vulnerability to adverse changes in general economic, industry and competitive conditions;
- limiting our flexibility in planning for and reacting to changes in the industry in which we compete;
- placing us at a disadvantage compared to other, less leveraged competitors or competitors with comparabledebt at more favorable interest rates; and
- increasing our cost of borrowing.

If we do not generate sufficient cash flows from operations or if future borrowings are not available to us in an amount sufficient to service our indebtedness, including payments of principal when due on our outstanding indebtedness or, in the case of our Convertible Senior Notes, in connection with a transaction involving us that constitutes a fundamental change under the indentures governing the Convertible Senior Notes, or under our Revolving Credit Facility, or to fund our liquidity needs, wemay be forced to refinance all or a portion of our indebtedness on or before the maturity dates thereof, sell assets, reduce or delay currently planned activities or curtail operations, seek to raise additional capital or take other actions. We may not be able to execute any of these actions on commercially reasonable terms or at all. This, together with any of the factors described above, could materially and adversely affect our business, financial condition and results of operations.

Item 5. ***Other Information***

During the three months ended June 30, 2023 September 30, 2023, no director or officer the following directors and officers (as defined in Rule 16a-1(f) under the Exchange Act) of the Company adopted or terminated a "Rule 10b5-1 trading arrangement" or "non-Rule 10b5-1 trading arrangement," as each term is defined in Item 408(a) of Regulation S-K. S-K, for the purchase or sale of our securities, as set forth in the table below.

Name (Title)	Action Taken (Date of Action)	Type of Trading Arrangement	Nature of Trading Arrangement	Duration of Trading Arrangement	Aggregate Number of Securities
Marla Kessler (Director)	Adoption (September 7, 2023)	Rule 10b5-1 trading arrangement	Sale	Until August 31, 2024, unless earlier terminated by Ms. Kessler, or on the first date on which all trades under Ms. Kessler's plan have been executed or are expired	9,926

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Item 6. *Exhibits*

See the Exhibit Index on the following page of this Quarterly Report on Form 10-Q.

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EXHIBIT INDEX

Exhibit No:	Description
2.1	Transaction Agreement, dated May 21, 2023, by and between Ironwood Pharmaceuticals, Inc. and VectivBio Holding AG. Incorporated by reference to Exhibit 2.1 of Ironwood Pharmaceuticals, Inc.'s Current Report on Form 8-K, filed with the SEC on May 22, 2023.

2.2	Tender and Support Agreement, dated May 21, 2023, by and among Ironwood Pharmaceuticals, Inc. and certain shareholders of VectivBio Holding AG. Incorporated by reference to Exhibit 99.1 of Ironwood Pharmaceuticals, Inc.'s Current Report on Form 8-K, filed with the SEC on May 22, 2023.
3.1	Eleventh Amended and Restated Certificate of Incorporation. Incorporated by reference to Exhibit 3.1 of Ironwood Pharmaceuticals, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2009, filed with the SEC on March 30, 2010.
3.2	Certificate of Retirement. Incorporated by reference to Exhibit 3.2 of Ironwood Pharmaceuticals, Inc.'s Amendment No. 1 to Form 8-A, filed with the SEC on January 3, 2019.
3.3	Certificate of Amendment of Eleventh Amended and Restated Certificate of Incorporation. Incorporated by reference to Exhibit 3.1 of Ironwood Pharmaceuticals, Inc.'s Current Report on Form 8-K, filed with the SEC on May 31, 2019.
3.4	Fifth Amended and Restated Bylaws. Incorporated by reference to Exhibit 3.2 of Ironwood Pharmaceuticals, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2009, filed with the SEC on March 30, 2010.
10.1†	
10.1#*	Credit Form of Restricted Stock Unit Agreement dated May 21, 2023, by under the Amended and among Ironwood Pharmaceuticals, Inc., as borrower, Wells Fargo Bank, National Association, as administrative agent, collateral agent, a letter of credit issuer and a lender, and the other agents, lenders and letter of credit issuers parties thereto. Incorporated by reference to Exhibit 10.1 of Ironwood Pharmaceuticals, Inc.'s Current Report on Form 8-K, filed with the SEC on May 22, 2023. Restated 2019 Equity Incentive Plan.
10.2#	Amended and Restated 2019 Equity Incentive Plan. Incorporated by reference to Exhibit 10.1 of Ironwood Pharmaceuticals, Inc.'s Current Report on Form 8-K, filed with the SEC on June 22, 2023.
10.3†	Amended and Restated Exclusive License Agreement by and between Ferring International Center S.A. and GlyPharma Therapeutic Inc. dated as of December 6, 2016, as amended. Incorporated by reference to Exhibit 10.1 of VectivBio Holding AG's Registration Statement on Form F-1, filed with the SEC on March 19, 2021.

10.4†	Development and Commercialization Agreement by and between VectivBio AG and Asahi Kasei Pharma Corporation, dated as of March 30, 2022. Incorporated by reference to Exhibit 4.20 of VectivBio Holding AG's Annual Report on Form 20-F for the year ended December 31, 2022, filed with the SEC on April 19, 2023.
31.1*	Certification of Chief Executive Officer pursuant to Rules 13a-14 or 15d-14 of the Exchange Act.
31.2*	Certification of Chief Financial Officer pursuant to Rules 13a-14 or 15d-14 of the Exchange Act.

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32.1‡	Certification of Chief Executive Officer pursuant to Rules 13a-14(b) or 15d-14(b) of the Exchange Act and 18 U.S.C. Section 1350.
32.2‡	Certification of Chief Financial Officer pursuant to Rules 13a-14(b) or 15d-14(b) of the Exchange Act and 18 U.S.C. Section 1350.
101.INS*	XBRL Instance Document – The Instance Document does not appear in the Interactive Data Files because its XBRL tags are embedded within the Inline XBRL document.
101.SCH*	XBRL Taxonomy Extension Schema Document.
101.CAL*	XBRL Taxonomy Extension Calculation Linkbase Document.
101.LAB*	XBRL Taxonomy Extension Label Linkbase Database
101.PRE*	XBRL Taxonomy Extension Presentation Linkbase Document

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101.DEF*	XBRL Taxonomy Extension Definition Linkbase Document
104*	The cover page from this Quarterly Report on Form 10-Q formatted in Inline XBRL.

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* Filed herewith.

‡ Furnished herewith.

Management contract or compensatory plan, contract, or arrangement.

† Schedules and exhibits have been omitted pursuant to Item 601(b)(2) of Regulation S-K. Ironwood will furnish copies of any such schedules and exhibits to the SEC upon request.

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SIGNATURES

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

Ironwood Pharmaceuticals, Inc.

Date: August 9, 2023 November 9, 2023

By: /s/ THOMAS MCCOURT
Thomas McCourt
Chief Executive Officer
(Principal Executive Officer)

Date: August 9, 2023 November 9, 2023

By: /s/ RONALD SILVER
Ronald Silver
Vice President, Corporate Controller
(Principal Accounting Officer)

IRONWOOD PHARMACEUTICALS, INC.
AMENDED AND RESTATED 2019 EQUITY INCENTIVE PLAN

RESTRICTED STOCK UNIT AWARD AGREEMENT

Name of Participant:	
Grant Number:	
Date of Grant:	
Plan:	Amended and Restated 2019 Equity Incentive Plan

Total Number of Restricted Stock Units Subject to this Award (the "Restricted Stock Units"):	
Vesting Commencement Date:	
Vest Dates:	

This agreement (this "**Restricted Stock Unit Award Agreement**"), including any additional terms and conditions for the Participant's country set forth in the appendix attached hereto (the "**Appendix**" and together with the Restricted Stock Unit Award Agreement, the "**Agreement**"), evidences an award (the "**Award**") of restricted stock units granted by Ironwood Pharmaceuticals, Inc. (the "**Company**") to the individual named above (the "**Participant**"), pursuant to and subject to the terms of the Ironwood Pharmaceuticals, Inc. Amended and Restated 2019 Equity Incentive Plan (as amended from time to time, the "**Plan**"). Except as otherwise defined herein, all capitalized terms used herein have the same meaning as in the Plan.

1. Grant of Restricted Stock Unit Award. The Company grants to the Participant on the date set forth above (the "**Date of Grant**") the number of restricted stock units (the "**Restricted Stock Units**") set forth above giving the Participant the conditional right to receive, without payment and pursuant to and subject to the terms set forth in this Agreement and in the Plan, one share of Stock (a "**Share**") with respect to each Restricted Stock Unit forming part of the Award, subject to adjustment pursuant to Section 7 of the Plan in respect of transactions occurring after the date hereof.

2. Vesting; Cessation of Employment.

(a) Vesting. The term "vest" as used herein with respect to any Restricted Stock Units means the lapsing of the restrictions described below with respect to such units, entitling the Participant to have Shares delivered with respect to such units. Unless earlier terminated, forfeited, relinquished or expired, the Restricted Stock Units will vest as provided above, subject to the Participant remaining in continuous Employment from the Date of Grant through such vesting date.

Notwithstanding the foregoing, in the event that the Participant's Employment is terminated due to the Participant's death, any portion of the Restricted Stock Units, to the extent then outstanding, that is not vested as of such date will accelerate and vest in full as of such date.

(b) Cessation of Employment. Except as expressly provided for in a written agreement between the Participant and the Company that is in effect at the time of the Participant's termination of Employment, automatically and immediately upon the cessation of the Participant's Employment the unvested portion of this Award will terminate and be forfeited for no consideration.

3. Delivery of Shares. Subject to Section 4 below, the Company shall, as soon as practicable upon the vesting of any portion of the Award (but in no event later than 30 days following the date on which such Restricted Stock Units vest), effect delivery of the Shares with respect to such vested Restricted Stock Units to the Participant (or, in the event of the Participant's death, to the person to whom the Award has passed by will or the laws of descent and distribution). No Shares will be issued pursuant to this Award unless and until all legal requirements applicable to the issuance or transfer of such Shares have been complied with to the satisfaction of the Administrator.

4. Forfeiture; Recovery of Compensation.

(a) The Administrator may cancel, rescind, withhold or otherwise limit or restrict this Award at any time if the Participant is not in compliance with all applicable provisions of this Agreement and the Plan.

(b) By accepting, or being deemed to have accepted, this Award, the Participant expressly acknowledges and agrees that his or her rights, and those of any permitted transferee of this Award, under this Award, including the right to any Shares acquired under this Award or proceeds from the disposition thereof, are subject to Section 6(a)(5) of the Plan (including any successor provision). Nothing in the preceding sentence may be construed as limiting the general application of Section 10 of this Agreement.

5. Dividends; Other Rights. This Award may not be interpreted to bestow upon the Participant any equity interest or ownership in the Company or any subsidiary prior to the date on which the Company delivers Shares to the Participant. The Participant is not entitled to vote any Shares by reason of the

granting of this Award or to receive or be credited with any dividends declared and payable on any Share prior to the date on which any such Share is delivered to the Participant hereunder. The Participant will have the rights of a shareholder only as to those Shares, if any, that are actually delivered under this Award.

6. Nontransferability. This Award may not be transferred except as expressly permitted under Section 6(a)(3) of the Plan.

7. Taxes; Sell to Cover.

(a) To the extent the Participant is an Employee, the Participant expressly acknowledges that the vesting or settlement of the Restricted Stock Units acquired hereunder may give rise to "wages" subject to withholding. No Shares will be delivered pursuant to this Award unless and until the Participant has remitted to the Company an amount sufficient to satisfy all taxes required to be withheld in connection with such vesting or settlement. The Participant authorizes the Company and its subsidiaries to withhold any amounts due in respect of any required tax withholdings or payments from any amounts otherwise owed to the

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Participant, but nothing in this sentence may be construed as relieving the Participant of any liability for satisfying his or her obligation under the preceding provisions of this Section 7.

(i) To the extent the Participant is an Employee, by accepting this Award, the Participant hereby acknowledges and agrees that he or she shall be required to sell Shares issued on settlement of the Award and to allow the Agent (as defined below) to remit the cash proceeds of such sale to the Company ("**Sell to Cover**") to satisfy the withholding obligations relating to the Award (the "**Withholding Obligation**").

(ii) If the Withholding Obligation is satisfied through a Sell to Cover, the Participant hereby irrevocably appoints E*Trade, or such other registered broker-dealer that is a member of the Financial Industry Regulatory Authority as the Company may select, as the Participant's agent (the "**Agent**"), and the Participant authorizes and directs the Agent to (A) sell on the open market at the then-prevailing market price(s), on the Participant's behalf, as soon as practicable on or after the date on which the Shares are delivered to the Participant pursuant to Section 3 in connection with the vesting of the Restricted Stock Units, the number (rounded up to the nearest whole number) of Shares sufficient to cover (x) the satisfaction of the Withholding Obligation arising from the vesting of the Restricted Stock Units and the related issuance and delivery of Shares to the Participant and (y) all applicable fees and commissions due, or required to be collected by, the Agent with respect thereto; (B) remit directly to the Company the proceeds from the sale of the Shares referred to in clause (A) above necessary to satisfy the Withholding Obligation; (C) retain the amount required to cover all applicable fees and commissions due to, or required to be collected by, the Agent, relating directly to the sale of the Shares referred to in clause (A) above; and (D) maintain any remaining funds from the sale of the Shares referred to in clause (A) above in the Participant's account with the Agent. The Participant hereby authorizes the Company and the Agent to cooperate and communicate with one another to determine the number of Shares that must be sold to satisfy the Participant's obligations hereunder and to otherwise effect the purpose and intent of this Agreement and satisfy the rights and obligations hereunder.

(iii) The Participant acknowledges that the Agent is under no obligation to arrange for the sale of Shares at any particular price under a Sell to Cover and that the Agent may affect sales under any Sell to Cover in one or more sales and that the average price for executions resulting from bunched orders may be assigned to the Participant's account. The Participant further acknowledges that he or she will be responsible for all brokerage fees and other costs of sale associated with any Sell to Cover or transaction contemplated by this Section 7 and agrees to indemnify and hold the Company harmless from any losses, costs, damages, or expenses relating to any such sale. In addition, the Participant acknowledges that it may not be possible to sell Shares as provided for in this Section 7 due to various circumstances. If it is not

possible to sell Shares in a Sell to Cover, the Company will assist the Participant in determining alternatives available to the Participant. In the event of the Agent's inability to sell Shares, the Participant will continue to be responsible for the timely payment to the Company of all federal, state, local and foreign taxes that are required by applicable laws and regulations to be paid or withheld with respect to the Restricted Stock Units or the Award. In such event, or in the event that the Company determines that the cash proceeds from a Sell to Cover are insufficient to meet the Withholding Obligation, the Participant authorizes the Company and its subsidiaries to withhold such amounts from any amounts otherwise owed to the Participant, but nothing in this

sentence shall be construed as relieving the Participant of any liability for satisfying his or her obligations under the preceding provisions of this Section 7.

(iv) The Participant hereby agrees to execute and deliver to the Agent or the Company any other agreements or documents as the Agent or the Company reasonably deem necessary or appropriate to carry out the purposes and intent of this Agreement, including without limitation, any agreement intended to ensure the Sell to Cover and the corresponding authorization and instruction to the Agent set forth in this Section 7 to sell Common Stock to satisfy the Withholding Obligation comply with the requirements of Rule 10b5-1(c) under the Exchange Act. The Agent is a third-party beneficiary of this Section 7.

(v) The Participant's election to Sell to Cover to satisfy the Withholding Obligation is irrevocable. Upon acceptance of the Award, the Participant has elected to Sell to Cover to satisfy the Withholding Obligation, and the Participant acknowledges that he or she may not change this election at any time in the future.

(vi) In no event will the Company have any liability relating to the failure or alleged failure of any payment or benefit under this Agreement to comply with, or be exempt from, the requirements of Section 409A.

(b) To the extent the Participant is not an Employee, the Participant is responsible for satisfying and paying all taxes arising from or due in connection with the Award, or the delivery of Shares pursuant to the Award. The Company will have no liability or obligation related to the foregoing.

8. Effect on Employment. Neither the grant of this Award, nor the issuance of Shares upon the vesting of this Award, will give the Participant any right to be retained in the employ or service of the Company or any of its subsidiaries, affect the right of the Company or any of its subsidiaries to discharge the Participant at any time, or affect any right of the Participant to terminate his or her Employment at any time. The Participant acknowledges and agrees that the grant of the Award is of a one-time, exceptional nature and is limited by the terms set forth herein and, except to the extent required by applicable law, shall not be considered as part of the Participant's employment compensation, wages, entitlements or other compensation or benefits for any purpose. Eligibility for Awards under the Plan is determined by the Administrator in its sole discretion and eligibility for, or receipt of, an Award in a certain fiscal year does not imply or guarantee entitlement to an Award in any future fiscal years. The receipt of the Award does not create a right for the Participant to obtain further awards under the Plan or any other plans that may be implemented by the Company or any of its affiliates.

9. Appendix. Notwithstanding any provision of this Restricted Stock Unit Award Agreement, if the Participant resides in a country outside the United States or is otherwise subject to the laws of a country other than the United States, the Restricted Stock Units shall be subject to the additional terms and conditions set forth in Appendix A for the Participant's country, if any. Moreover, if the Participant relocates to one of the countries included in the Appendix during the term of the Restricted Stock Units, the terms

and conditions for such country shall apply to the Participant, to the extent the Company determines that the application

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of such terms and conditions is necessary or advisable for legal or administrative reasons. The Appendix forms part of this Agreement.

10. Provisions of the Plan. This Agreement is subject in its entirety to the provisions of the Plan, which are incorporated herein by reference. A copy of the Plan as in effect on the Date of Grant has been furnished to the Participant. By accepting, or being deemed to have accepted, all or any portion of the Award, the Participant agrees to be bound by the terms of the Plan and this Agreement. In the event of any conflict between the terms of this Agreement and the Plan, the terms of the Plan will control.

11. Form S-8 Prospectus. The Participant acknowledges that the Participant has received and reviewed a copy of the prospectus required by Part I of Form S-8 relating to shares of Stock that may be issued under the Plan.

12. Jurisdiction. By accepting (or being deemed to have accepted) the Award, the Participant agrees to (i) submit irrevocably and unconditionally to the jurisdiction of the federal and state courts located within the geographic boundaries of the United States District Court for the District of Delaware for the purpose of any suit, action or other proceeding arising out of or based upon the Plan or this Agreement; (ii) not commence any suit, action or other proceeding arising out of or based upon the Plan or this Agreement, except in the federal and state courts located within the geographic boundaries of the United States District Court for the District of Delaware; and (iii) waive, and not assert, by way of motion as a defense or otherwise, in any such suit, action or proceeding, any claim that he or she is not subject personally to the jurisdiction of the above-named courts that his or her property is exempt or immune from attachment or execution, that the suit, action or proceeding is brought in an inconvenient forum, that the venue of the suit, action or proceeding is improper or that the Plan or this Agreement or the subject matter thereof may not be enforced in or by such court.

13. Acknowledgements. The Participant acknowledges and agrees that (a) this Agreement may be executed in two or more counterparts, each of which will be an original and all of which together will constitute one and the same instrument, (b) this Agreement may be executed and exchanged using facsimile, portable document format (PDF) or electronic signature, which, in each case, will constitute an original signature for all purposes hereunder, and (c) such signature by the Company will be binding against the Company and will create a legally binding agreement when this Agreement is countersigned by the Participant.

[Signature page follows.]

The Company, by its duly authorized officer, and the Participant have executed this Agreement as of the date first set forth above.

IRONWOOD PHARMACEUTICALS, INC.

By: /s/ Thomas McCourt
Name: Thomas McCourt
Title: Chief Executive Officer

Agreed and Accepted:

By_____

[Participant's Name]

Signature Page to Restricted Stock Unit Award Agreement

APPENDIX A

IRONWOOD PHARMACEUTICALS, INC.
AMENDED AND RESTATED 2019 EQUITY INCENTIVE PLAN
RESTRICTED STOCK UNIT AWARD AGREEMENT

ADDITIONAL TERMS AND CONDITIONS FOR NON-U.S. PARTICIPANTS

Capitalized terms used but not defined in this Appendix have the meanings set forth in the Plan and/or in the Restricted Stock Unit Award Agreement.

TERMS AND CONDITIONS

This Appendix forms part of the Agreement and includes additional terms and conditions that govern the Award granted to you under the Plan if you reside and/or work in one of the jurisdictions listed below. Capitalized terms used but not defined in this Appendix have the meanings set forth in the Plan and/or in the Restricted Stock Unit Award Agreement.

If you are a citizen or resident (or are considered as such for local law purposes) of a country other than the country in which you are currently residing and/or working, or if you relocate to another country after the grant of the Award, the Company shall, in its discretion, determine to what extent the additional terms and conditions contained herein shall be applicable to you.

NOTIFICATIONS

This Appendix may also include information regarding exchange controls and certain other issues of which you should be aware with respect to participation in the Plan. The information is based on the securities, exchange control, and other laws in effect in the respective countries as of July 2023. Such laws are often complex and change frequently. As a result, you should not rely on the information in this Appendix as the only source of information relating to the consequences of your participation in the Plan because the information may be out of date at the time you vest in the Restricted Share Units, acquire Shares, or sell Shares acquired under the Plan.

In addition, the information contained below is general in nature and may not apply to your particular situation. You should seek appropriate professional advice as to how the relevant laws in your country may apply to your situation.

If you are a citizen or resident (or are considered as such for local law purposes) of a country other than the country in which you are currently residing and/or working, or if you relocate to another country after the grant of the Award, the notifications herein may not apply to you in the same manner.

DATA PRIVACY AND DATA PROTECTION

1. Data Collection and Processing. The Company and its affiliates collect, disclose, maintain, and use (collectively, "**Process**") personally-identifiable information or personal data about the Participant including the Participant's home address, work address, personal email address, work email address, personal telephone number, work telephone number, date of birth, social security, passport or other identification number, salary and related compensation information, citizenship, job title, any shares or directorships held in the Company, and details of all Restricted Stock Units or any other equity awards granted, canceled, exercised, vested, or outstanding in the Participant's favor (collectively, "**Data**"), which the Company and its affiliates generate themselves, receive from the Participant directly or from third parties about the Participant for purposes of allocating Restricted Stock Units and implementing, administering and managing the Plan.

2. The Company and its affiliates Process the Participant's Data for the Company's and affiliates' legitimate business purposes in relation to the Plan, administering employee equity awards and as further reasonably necessary for all purposes relating to the operation and performance of the Plan. These

purposes may also include: (i) administering and maintaining Participant's records which include Participant's Data; (ii) providing the services described in the Plan and the contractual obligations under the terms of this Agreement; (iii) providing information to future purchasers or merger partners of the Company or any affiliate, or the business in which the Participant works; and (iv) responding to public authorities, court orders and legal investigations, as applicable.

3. Data Sharing. The Company and its affiliates may share the Participant's Data with third parties, including in particular (i) affiliates, (ii) trustees of any employee benefit trust, (iii) registrars, (iv) brokers, (v) third party administrators, (vi) service providers retained by the Company or any affiliate, or (vii) regulators and others, as required by applicable law.

The Company is contracted with E*TRADE Securities LLC (including any of its affiliates and successors) (collectively, "**E*TRADE**"), an independent service provider based in the United States, who assists the Company with the implementation, administration and management of the Plan. The Company retains the right to select a different service provider and share the Participant's Data with another company that serves in a similar manner.

E*TRADE will open an account for the Participant to receive and trade Shares acquired under the Plan. The Participant will be asked to agree to separate data privacy and data protection terms for the data processing practices of E*TRADE which is a condition to the Participant's ability to participate in the Plan.

4. Data Transfers. If necessary, the Company and any affiliates may transfer Participant's Data to any of the parties mentioned above in any country or territory in the world that may not provide the same level of protection for the Data as Participant's home country. Any transfer of the Participant's Data from Switzerland or a country within the European Union ("**EU**") or the European Economic Area to a third country is subject to appropriate safeguards in the form of

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EU standard contractual clauses or applicable derogations/exceptions provided for under applicable law.

5. Data Retention. The Company and its affiliates will keep Participant's Data for as long as necessary to: operate the Plan, comply with the terms of this Agreement, comply with any legal or regulatory requirements, exercise or use in defense of Company's legal rights, and archiving, back-up and deletion processes. This means the Company and its affiliates may retain Participant's Data after the Participant's employment relationship has terminated. When the Company no longer needs Participant's Data, the Company and its affiliates will remove it from its systems to the fullest extent practicable. If the Company or its affiliates keeps the Participant's Data longer, it would be to satisfy legal or regulatory obligations and the Company's legal basis would be for compliance with relevant laws or regulations.

6. Participant's Rights. To the extent provided by applicable law, Participant has the right to:

(a) Request access to and obtain a copy of your Participant's Data.

(b) Request rectification (or correction) of Participant's Data that is inaccurate.

(c) Request erasure (or deletion) of Participant's Data that is no longer necessary to fulfill the purposes for which it was collected, or does not need to be retained by the Company or any of its affiliates for other legitimate purposes.

(d) Restrict or object to the processing of Participant's Data.

(e) If applicable, request Participant's Data be ported (transferred) to another company.

Subject to applicable law, application of the above rights may vary depending on the type of Data involved, and the Company's or its affiliates' particular basis for Processing the Data.

To make a request to exercise one of the above rights, the Participant may contact Company's Data Protection Officer at privacy@ironwoodpharma.com. The Company will consider and act upon any requests in accordance with the applicable law. The Company or its affiliates may request specific information from Participant to enable it to confirm Participant's identity and right to access, as well as to search for and provide Participant with the Data held about Participant by Company or its affiliates.

7. Additional Privacy Practices Information. Further details pertaining to the Processing of Participant's Data by the Company or its affiliates may be included in privacy policies and similar documents, as may be published or otherwise updated by Company and made available by Company or any of its affiliates from time to time.

SWITZERLAND

For the avoidance of doubt, the term "taxes" shall include all applicable social security contributions.

For the purposes of the Swiss Federal Act on Data Protection and its implementing ordinances as amended from time to time ("**FADP**"):

- The data controller within the meaning of the FADP is Ironwood Pharmaceuticals, Inc., Attn: Head of Legal, 100 Summer Street, Suite 2300, Boston, MA 02110, +1-617-621-7722; privacy@ironwoodpharma.com; and
- Participant has the right to lodge a complaint with the Swiss Federal Data Protection and Information Commissioner (http://www.edoeb.admin.ch).

EXHIBIT 31.1

CERTIFICATION PURSUANT
TO RULES 13a-14(a) OR 15d-14(a) UNDER
THE SECURITIES EXCHANGE ACT OF 1934

I, Thomas McCourt, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Ironwood Pharmaceuticals, Inc. (the "registrant");

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 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 and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

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

Date: August 9, 2023 November 9, 2023

/s/ THOMAS MCCOURT

Thomas McCourt

Chief Executive Officer

EXHIBIT 31.2

CERTIFICATION PURSUANT
TO RULES 13a-14(a) OR 15d-14(a) UNDER
THE SECURITIES EXCHANGE ACT OF 1934

I, Sravan K. Emany, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Ironwood Pharmaceuticals, Inc. (the "registrant");

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 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 and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

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

Date: August 9, 2023 November 9, 2023

/s/ SRAVAN K. EMANY

Sravan K. Emany

Chief Financial Officer

EXHIBIT 32.1

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

In connection with the Quarterly Report of Ironwood Pharmaceuticals, Inc. (the "Company") on Form 10-Q for the period ended June 30, 2023 September 30, 2023 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Thomas McCourt, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, to my knowledge that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ THOMAS MCCOURT

Thomas McCourt

Chief Executive Officer

August November 9, 2023

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

EXHIBIT 32.2

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 Ironwood Pharmaceuticals, Inc. (the "Company") on Form 10-Q for the period ended June 30, 2023 September 30, 2023 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Sravan K. Emany, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, to my knowledge that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ SRAVAN K. EMANY
Sravan K. Emany
Chief Financial Officer

August November 9, 2023

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

DISCLAIMER

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