

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 10-Q

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

For the quarterly period ended June 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: 000-50865

MannKind Corporation

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

1 Casper Street
Danbury, Connecticut
(Address of principal executive offices)

13-3607736
(I.R.S. Employer
Identification No.)

06810
(Zip Code)

(818) 661-5000

(Registrant's telephone number, including area code)

N/A

(Former name, former address and former fiscal year, if changed since last report)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value \$0.01 per share	MNKD	The Nasdaq Stock Market LLC

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

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

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

Large accelerated filer Accelerated filer
Non-accelerated filer Smaller reporting company
Emerging growth company

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

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

As of July 28, 2023, there were 268,355,182 shares of the registrant's common stock, \$0.01 par value per share, outstanding.

MANKIND CORPORATION
Form 10-Q
For the Quarterly Period Ended June 30, 2023
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PART 1: FINANCIAL INFORMATION
ITEM 1. FINANCIAL STATEMENTS
MANKIND CORPORATION AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
	(In thousands except per share data)			
Revenues:				
Net revenue – commercial product sales	\$ 18,345	\$ 12,722	\$ 35,907	\$ 22,548
Revenue – collaborations and services	11,211	5,868	22,597	8,034
Royalties – collaborations	19,055	304	30,733	304
Total revenues	<u>48,611</u>	<u>18,894</u>	<u>89,237</u>	<u>30,886</u>
Expenses:				
Cost of goods sold	5,224	4,617	10,754	6,901
Cost of revenue – collaborations and services	9,013	8,298	19,696	17,012
Research and development	6,453	4,893	12,058	8,429
Selling	14,002	15,868	27,312	28,596
General and administrative	11,947	10,175	22,489	18,144
Loss (gain) on foreign currency transaction	251	(4,503)	1,205	(6,486)
Total expenses	<u>46,890</u>	<u>39,348</u>	<u>93,514</u>	<u>72,596</u>
Income (loss) from operations	<u>1,721</u>	<u>(20,454)</u>	<u>(4,277)</u>	<u>(41,710)</u>
Other income (expense):				
Interest income, net	1,547	516	2,849	893
Interest expense on financing liability	(2,449)	(2,443)	(4,873)	(4,814)
Interest expense	(6,873)	(6,642)	(9,659)	(9,390)
Gain on available-for-sale securities	932	—	932	—
Other expense	(143)	—	(32)	—
Total other expense	<u>(6,986)</u>	<u>(8,569)</u>	<u>(10,783)</u>	<u>(13,311)</u>
Loss before income tax expense	<u>(5,265)</u>	<u>(29,023)</u>	<u>(15,060)</u>	<u>(55,021)</u>
Benefit from income taxes	—	—	—	—
Net loss	<u>\$ (5,265)</u>	<u>\$ (29,023)</u>	<u>\$ (15,060)</u>	<u>\$ (55,021)</u>
Net loss per share – basic and diluted	<u>\$ (0.02)</u>	<u>\$ (0.11)</u>	<u>\$ (0.06)</u>	<u>\$ (0.22)</u>
Weighted average shares used to compute net loss per share				
– basic and diluted	<u>265,626</u>	<u>253,644</u>	<u>264,802</u>	<u>252,775</u>

See notes to condensed consolidated financial statements.

MANKIND CORPORATION AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
	(In thousands)			
Net loss	\$ (5,265)	\$ (29,023)	\$ (15,060)	\$ (55,021)
Other comprehensive income (loss):				
Unrealized gain (loss) on available-for-sale securities	443	(130)	443	(1,206)
Comprehensive loss	\$ (4,822)	\$ (29,153)	\$ (14,617)	\$ (56,227)

See notes to condensed consolidated financial statements.

MANNKIND CORPORATION AND SUBSIDIARIES
CONDENSED CONSOLIDATED BALANCE SHEETS
(Unaudited)

	<u>June 30, 2023</u>	<u>December 31, 2022</u>
	(In thousands except share and per share data)	
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 86,184	\$ 69,767
Short-term investments	58,163	101,079
Accounts receivable, net	27,789	16,801
Inventory	25,290	21,772
Prepaid expenses and other current assets	32,807	25,477
Total current assets	<u>230,233</u>	<u>234,896</u>
Property and equipment, net	69,510	45,126
Goodwill	1,931	2,428
Other intangible asset	1,113	1,153
Long-term investments	2,282	1,961
Other assets	8,353	9,718
Total assets	<u>\$ 313,422</u>	<u>\$ 295,282</u>
LIABILITIES AND STOCKHOLDERS' DEFICIT		
Current liabilities:		
Accounts payable	\$ 17,127	\$ 11,052
Accrued expenses and other current liabilities	36,833	35,553
Financing liability – current	9,686	9,565
Midcap credit facility – current	16,667	—
Deferred revenue – current	3,489	1,733
Recognized loss on purchase commitments – current	13,164	9,393
Total current liabilities	<u>96,966</u>	<u>67,296</u>
Mann Group convertible note	8,829	8,829
Accrued interest – Mann Group convertible note	55	55
Financing liability – long term	94,395	94,512
Midcap credit facility – long term	22,811	39,264
Senior convertible notes	226,124	225,397
Recognized loss on purchase commitments – long term	56,063	62,916
Operating lease liability	4,646	5,343
Deferred revenue – long term	60,248	37,684
Milestone liabilities	3,772	4,524
Total liabilities	<u>573,909</u>	<u>545,820</u>
Commitments and contingencies (Note 15)		
Stockholders' deficit:		
Undesignated preferred stock, \$0.01 par value – 10,000,000 shares authorized; no shares issued or outstanding as of June 30, 2023 and December 31, 2022	—	—
Common stock, \$0.01 par value – 800,000,000 and 400,000,000 shares authorized as of June 30, 2023 and December 31, 2022, respectively, and 268,235,145 and 263,793,305 shares issued and outstanding as of June 30, 2023 and December 31, 2022, respectively	2,682	2,638
Additional paid-in capital	2,968,917	2,964,293
Accumulated other comprehensive income	443	—
Accumulated deficit	(3,232,529)	(3,217,469)
Total stockholders' deficit	<u>(260,487)</u>	<u>(250,538)</u>
Total liabilities and stockholders' deficit	<u>\$ 313,422</u>	<u>\$ 295,282</u>

See notes to condensed consolidated financial statements.

MANNKIND CORPORATION AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' DEFICIT
(Unaudited)

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total
	Shares	Amount				
	(In thousands)					
BALANCE, JANUARY 1, 2022	251,478	\$ 2,515	\$ 2,918,205	\$ —	\$ (3,130,069)	\$ (209,349)
Net issuance of common stock associated with stock options and restricted stock units	450	4	125	—	—	129
Issuance of common stock under the employee stock purchase plan	233	2	738	—	—	740
Stock-based compensation expense	—	—	2,806	—	—	2,806
Issuance of common stock from market price stock purchase plan	252	3	681	—	—	684
Cumulative loss on available-for-sale securities	—	—	—	(1,076)	—	(1,076)
Net loss	—	—	—	—	(25,998)	(25,998)
BALANCE, MARCH 31, 2022	<u>252,413</u>	<u>\$ 2,524</u>	<u>\$ 2,922,555</u>	<u>\$ (1,076)</u>	<u>\$ (3,156,067)</u>	<u>\$ (232,064)</u>
Issuance of common stock pursuant to conversion of Mann Group convertible note	3,838	39	9,557	—	—	9,596
Issuance of common stock pursuant to conversion of the Mann Group convertible note interest	193	2	518	—	—	520
Net issuance of common stock associated with stock options and restricted stock units	833	8	(385)	—	—	(377)
Stock-based compensation expense	—	—	4,422	—	—	4,422
Cumulative loss on available-for-sale securities	—	—	—	(130)	—	(130)
Net loss	—	—	—	—	(29,023)	(29,023)
BALANCE, JUNE 30, 2022	<u>257,277</u>	<u>\$ 2,573</u>	<u>\$ 2,936,667</u>	<u>\$ (1,206)</u>	<u>\$ (3,185,090)</u>	<u>\$ (247,056)</u>

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total
	Shares	Amount				
	(In thousands)					
BALANCE, JANUARY 1, 2023	263,793	\$ 2,638	\$ 2,964,293	\$ —	\$ (3,217,469)	\$ (250,538)
Issuance of common stock associated with at-the-market placement	269	3	1,196	—	—	1,199
Issuance costs associated with at-the-market placement	—	—	(24)	—	—	(24)
Net issuance of common stock associated with stock options and restricted stock units	206	2	50	—	—	52
Issuance of common stock pursuant to conversion of the Mann Group convertible note interest	11	—	55	—	—	55
Stock-based compensation expense	—	—	3,655	—	—	3,655
Net loss	—	—	—	—	(9,795)	(9,795)
BALANCE, MARCH 31, 2023	<u>264,279</u>	<u>\$ 2,643</u>	<u>\$ 2,969,225</u>	<u>\$ —</u>	<u>\$ (3,227,264)</u>	<u>\$ (255,396)</u>
Issuance of common stock associated at-the-market placement	362	4	1,579	—	—	1,583
Issuance costs associated with at-the-market placement	—	—	(17)	—	—	(17)
Issuance of common stock pursuant to conversion of the Mann Group convertible note interest	13	—	54	—	—	54
Net issuance of common stock associated with stock options and restricted stock units	3,279	32	(8,576)	—	—	(8,544)
Issuance of common stock under Employee Stock Purchase Plan	266	3	920	—	—	923
Stock-based compensation expense	—	—	5,580	—	—	5,580
Issuance of common stock from market price stock purchase plan	36	—	152	—	—	152
Cumulative gain on available-for-sale securities	—	—	—	443	—	443
Net loss	—	—	—	—	(5,265)	(5,265)
BALANCE, JUNE 30, 2023	<u>268,235</u>	<u>\$ 2,682</u>	<u>\$ 2,968,917</u>	<u>\$ 443</u>	<u>\$ (3,232,529)</u>	<u>\$ (260,487)</u>

See notes to condensed consolidated financial statements.

MANNKIND CORPORATION AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)

	Six Months Ended June 30,	
	2023	2022
	(In thousands)	
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net loss	\$ (15,060)	\$ (55,021)
Adjustments to reconcile net loss to net cash used in operating activities:		
Stock-based compensation expense	9,235	7,228
Interest expense on financing liability	4,873	4,814
Write-off of inventory	3,359	451
Depreciation and amortization	2,173	1,326
Loss (gain) on foreign currency transaction	1,205	(6,486)
Amortization of debt discount and issuance costs	941	940
Amortization of right-of-use assets	657	2,331
Interest expense on Mann Group convertible note	109	202
Gain on available-for-sale securities	(932)	—
Other, net	(245)	469
Interest on milestone right	—	3,912
Changes in operating assets and liabilities:		
Accounts receivable, net	(10,988)	(10,036)
Inventory	(6,877)	(2,720)
Prepaid expenses and other current assets	(5,231)	(235)
Other assets	(20)	(441)
Accounts payable	6,075	867
Accrued expenses and other current liabilities	(4,403)	(134)
Deferred revenue	24,320	11,059
Recognized loss on purchase commitments	(4,286)	(2,928)
Operating lease liabilities	(1,153)	(2,441)
Deposits from customer	—	(3,387)
Net cash provided by (used in) operating activities	3,752	(50,230)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Proceeds from maturity of debt securities	69,083	53,307
Purchase of held-to-maturity debt securities	(26,447)	(68,470)
Purchase of property and equipment	(25,180)	(2,222)
Acquisition of V-Go	—	(15,099)
Purchase of available-for-sale securities	—	(5,000)
Net cash provided by (used in) investing activities	17,456	(37,484)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Proceeds from at-the-market-offering	2,782	—
Issuance costs associated with at-the-market offering	(41)	—
Proceeds from market price stock purchase plan and employee stock purchase plan	1,075	684
Payments for taxes related to net issuance of common stock associated with restricted stock units and stock options	(8,492)	(248)
Payment on financing liability	(115)	(1,399)
Net cash used in financing activities	(4,791)	(963)
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	16,417	(88,677)
CASH AND CASH EQUIVALENTS, BEGINNING OF PERIOD	69,767	124,184
CASH AND CASH EQUIVALENTS, END OF PERIOD	\$ 86,184	\$ 35,507

	Six Months Ended June 30,	
	2023	2022
	(In thousands)	
SUPPLEMENTAL CASH FLOWS DISCLOSURES:		
Interest paid in cash	\$ 4,259	\$ 4,341
NON-CASH INVESTING AND FINANCING ACTIVITIES:		
Reclassification of Midcap credit facility from long-term to current	16,667	—
Reclassification of investments from long-term to current	2,623	52,236
Non-cash construction in progress, property and equipment	1,858	916
Right-of-use asset modification	728	3,794
Goodwill adjustment for a net reduction in liabilities	497	—
Payments on debt and interest through common stock issuance	109	10,116
Issuance of common stock under employee stock purchase plan	—	740
Addition of right-of-use-asset	—	1,812
UT owned property and equipment	—	1,563
Contingent milestone liability	—	610

See notes to condensed consolidated financial statements.

MANNKIND CORPORATION AND SUBSIDIARIES
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

1. Description of Business and Significant Accounting Policies

The unaudited condensed consolidated financial statements of MannKind Corporation and its subsidiaries (“MannKind,” the “Company,” “we” or “us”), have been prepared in accordance with generally accepted accounting principles in the United States of America (“GAAP”) for interim financial information and with the instructions to Form 10-Q and Article 10 of Regulation S-X of the Securities and Exchange Commission (the “SEC”). Accordingly, they do not include all of the information and footnotes required by GAAP for complete financial statements. The information included in this quarterly report on Form 10-Q should be read in conjunction with the audited consolidated financial statements and notes thereto included in the Company’s annual report on Form 10-K for the fiscal year ended December 31, 2022, filed with the SEC on February 23, 2023 (the “Annual Report”).

In the opinion of management, all adjustments, consisting only of normal, recurring adjustments, considered necessary for a fair presentation of the results of these interim periods have been included. The results of operations for the three and six months ended June 30, 2023 may not be indicative of the results that may be expected for the full year.

Financial Statement Estimates — The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ from those estimates or assumptions. Management considers many factors in selecting appropriate financial accounting policies, and in developing the estimates and assumptions that are used in the preparation of the financial statements. Management must apply significant judgment in this process. The more significant estimates include revenue recognition, including gross-to-net adjustments, stand-alone selling price considerations for recognition of collaboration revenue, assessing long-lived assets for impairment, clinical trial expenses, inventory costing and recoverability, recognized loss on purchase commitment, milestone rights liability, stock-based compensation and the determination of the provision for income taxes and corresponding deferred tax assets and liabilities, and the valuation allowance recorded against net deferred tax assets.

Business — MannKind is a biopharmaceutical company focused on the development and commercialization of innovative therapeutic products and devices to address serious unmet medical needs for those living with endocrine and orphan lung diseases. The Company’s signature technologies, Technosphere dry-powder formulations and Dreamboat inhalation devices, offer rapid and convenient delivery of medicines to the deep lung where they can exert an effect locally or enter the systemic circulation. The Company is currently commercializing Afrezza (insulin human) Inhalation Powder, an ultra rapid-acting inhaled insulin indicated to improve glycemic control in adults with diabetes, and the V-Go wearable insulin delivery device, which provides continuous subcutaneous infusion of insulin in adults that require insulin. The first product to come out of the orphan lung disease pipeline, Tyvaso DPI (treprostinil) inhalation powder, received approval from the U.S. Food and Drug Administration (“FDA”) in May 2022 for the treatment of pulmonary arterial hypertension (PAH) and for the treatment of pulmonary hypertension associated with interstitial lung disease (PH-ILD). The Company’s development and marketing partner, United Therapeutics (“UT”) began commercializing Tyvaso DPI in June 2022 and is obligated to pay the Company a royalty on net sales of the product. The Company also receives a margin on supplies of Tyvaso DPI that it manufactures for UT.

Basis of Presentation — The condensed consolidated financial statements have been prepared in accordance with GAAP.

Principles of Consolidation — The condensed consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries. Intercompany balances and transactions have been eliminated.

Reclassifications — Certain prior year reported amounts have been reclassified to conform with the current year presentation. Changes were made to the condensed consolidated statements of cash flows to present the amortization of debt discount and issuance costs separately and to disclose net investment accretion under other, net. In addition, changes were made to the condensed consolidated statements of operations to present selling expenses separately from general and administrative expenses.

Segment Information — Operating segments are identified as components of an enterprise about which separate discrete financial information is available for evaluation by the chief operating decision-maker in making decisions regarding resource allocation and assessing performance. To date, the Company has viewed its operations and manages its business as one segment operating in the United States of America.

Revenue Recognition — The Company recognizes revenue when its customers obtain control of promised goods or services, in an amount that reflects the consideration which the Company expects to be entitled in exchange for those goods or services.

To determine revenue recognition for arrangements that are within the scope of Accounting Standards Codification (“ASC”) 606, *Revenue from Contracts with Customers* (“ASC 606”), the Company performs the following five steps: (i) identify the contract(s) with a customer, (ii) identify the performance obligations in the contract, (iii) determine the transaction price, (iv) allocate the transaction price to the performance obligations in the contract, and (v) recognize revenue when (or as) the entity satisfies a performance obligation. The Company only applies the five-step model to arrangements that meet the definition of a contract under ASC 606, including when it is probable that the entity will collect the consideration to which it is entitled in exchange for the goods or services it transfers to the customer.

At contract inception, once the contract is determined to be within the scope of ASC 606, the Company assesses the goods or services promised within each contract, determines those that are performance obligations, and assesses whether each promised good or service is distinct. The Company has two types of contracts with customers: (i) contracts for commercial product sales with wholesale distributors, specialty and retail pharmacies and (ii) collaboration arrangements.

Revenue Recognition — Net Revenue – Commercial Product Sales — The Company sells its products to a limited number of wholesale distributors, specialty and retail pharmacies, and durable medical equipment suppliers (“DME”) in the U.S. (collectively, its “Customers”). Wholesale distributors subsequently resell the Company’s products to retail pharmacies and certain medical centers or hospitals. Specialty and retail pharmacies sell directly to patients. In addition to distribution agreements with Customers, the Company enters into arrangements with payers that provide for government mandated and/or privately negotiated rebates, chargebacks, and discounts with respect to the purchase of the Company’s products.

The Company recognizes revenue on product sales when the Customer obtains control of the Company’s product, which occurs at delivery for wholesale distributors and generally at delivery for specialty pharmacies. The Company recognizes revenue on product sales to a retail pharmacy as the product is dispensed to patients. Product revenues are recorded net of applicable reserves, including discounts, allowances, rebates, returns and other incentives. See *Reserves for Variable Consideration* below.

Free Goods Program — From time to time, the Company offers programs to potential new patients that allow them to obtain free goods (prescription fills) from a pharmacy. The Company excludes such amounts related to these programs from both gross and net revenue. The cost of product associated with the free goods program is recognized as cost of goods sold in the condensed consolidated statements of operations.

Reserves for Variable Consideration — Revenues from product sales are recorded at the net sales price (transaction price), which includes estimates of variable consideration for which reserves are established. Components of variable consideration include trade discounts and allowances, product returns, provider chargebacks and discounts, government rebates, payer rebates, and other incentives, such as voluntary patient assistance, and other allowances that are offered within contracts between the Company and its Customers, payers, and other indirect customers relating to the Company’s sale of its products. These reserves, as further detailed below, are based on the amounts earned, or to be claimed on the related sales, and result in a reduction of accounts receivable or establishment of a current liability. Significant judgment is required in estimating gross-to-net adjustments, including historical experience, payer channel mix, current contract prices under applicable programs, unbilled claims, claim submission time lags and inventory levels in the distribution channel.

Where appropriate, these estimates take into consideration a range of possible outcomes, which are probability-weighted in accordance with the expected value method in ASC 606 for relevant factors such as current contractual and statutory requirements, specific known market events and trends, industry data, and forecasted customer buying and payment patterns. Overall, these reserves reduce recognized revenue to the Company’s best estimates of the amount of consideration to which it is entitled based on the terms of the respective underlying contracts.

The amount of variable consideration that is included in the transaction price may be constrained and is included in the net sales price only to the extent that it is probable that a significant reversal in the amount of the cumulative revenue recognized under the contract will not occur in a future period. The Company’s analysis also contemplates application of the constraint in accordance with the guidance, under which it determined a material reversal of revenue would not occur in a future period for the current period estimates of gross-to-net adjustments and, therefore, the transaction price was not reduced further during the current period. Actual amounts of consideration ultimately received may differ from the Company’s estimates. If actual results in the future vary from the Company’s

estimates, the Company will adjust these estimates, which would affect net revenue from commercial product sales and earnings in the period such variances become known.

Trade Discounts and Allowances — The Company generally provides Customers with discounts which include incentives, such as prompt pay discounts, that are explicitly stated in the Company's contracts and are recorded as a reduction of revenue in the period the related product revenue is recognized. In addition, the Company compensates (through trade discounts and allowances) its Customers for sales order management, data, and distribution services. However, the Company has determined such services received to date are not distinct from the Company's sale of products to the Customer and, therefore, these payments have been recorded as a reduction of revenue and as a reduction to accounts receivable, net.

Product Returns — Consistent with industry practice, the Company generally offers Customers a right of return for unopened product that has been purchased from the Company for a period beginning six months prior to and ending 12 months after its expiration date, which lapses upon shipment to a patient. The Company estimates the amount of its product sales that may be returned by its Customers and records this estimate as a reduction of revenue in the period the related product revenue is recognized, as well as reductions to accounts receivable, net. The Company currently estimates product returns using available industry data and its own sales information, including its visibility into the inventory remaining in the distribution channel. The Company's current return reserve percentage is estimated to be in the single digits. Adjustments to the returns reserve have been made in the past and may be necessary in the future based on revised estimates to the Company's assumptions.

Provider Chargebacks and Discounts — Chargebacks for fees and discounts to providers represent the estimated obligations resulting from contractual commitments to sell products to qualified healthcare providers at prices lower than the list prices charged to Customers who directly purchase products from the Company. Customers charge the Company for the difference between what they pay for products and the ultimate selling price to the qualified healthcare providers. These reserves are established in the same period that the related revenue is recognized, resulting in a reduction of product revenue and the establishment of a current liability that is recorded in accrued expenses and other current liabilities. Chargeback amounts are generally determined at the time of resale to the qualified healthcare provider by Customers, and the Company generally issues credits for such amounts within a few weeks of the Customer's notification to the Company of the resale. Reserves for chargebacks consist of credits that the Company expects to issue for units that remain in the distribution channel inventories at each reporting period-end that the Company expects will be sold to qualified healthcare providers, and chargebacks that Customers have claimed, but for which the Company has not yet issued a credit.

Government Rebates — The Company is subject to discount obligations under Medicare and state Medicaid programs. These reserves are recorded in the same period the related revenue is recognized, resulting in a reduction of product revenue and the establishment of a current liability that is included in accrued expenses and other current liabilities. Estimates around Medicaid have historically required significant judgment due to timing lags in receiving invoices for claims from states. For Afrezza, the Company also estimates the number of patients in the prescription drug coverage gap for whom the Company will owe an additional liability under the Medicare Part D program. The Company's liability for these rebates consists of invoices received for claims from prior quarters that have not been paid or for which an invoice has not yet been received, estimates of claims for the current quarter, and estimated future claims that will be made for products that have been recognized as revenue, but which remains in the distribution channel inventories at the end of each reporting period. The Company's estimates include consideration of historical claims experience, payer channel mix, current contract prices, unbilled claims, claim submission time lags and inventory in the distribution channel.

Payer Rebates — The Company contracts with certain private payer organizations, primarily insurance companies and pharmacy benefit managers, for the payment of rebates with respect to utilization of its products. The Company estimates these rebates, including estimates for product that has been recognized as revenue, but which remains in the distribution channel, and records such estimates in the same period the related revenue is recognized, resulting in a reduction of product revenue and the establishment of a current liability which is included in accrued expenses and other current liabilities. The Company's estimates include consideration of historical claims experience, payer channel mix, current contract prices, unbilled claims, claim submission time lags and inventory in the distribution channel.

Other Incentives — Other incentives which the Company offers include voluntary patient support programs, such as the Company's co-pay assistance program, which are intended to provide financial assistance to qualified commercially-insured patients with co-payments required by payers. The calculation of the accrual for co-pay assistance is based on an estimate of claims and the cost per claim that the Company expects to receive associated with the products that have been recognized as revenue but remains in the distribution channel inventories at the end of each reporting period. The adjustments are recorded in the same period the related revenue is recognized, resulting in a reduction of product revenue and the establishment of a current liability that is included in accrued expenses and other current liabilities.

Revenue Recognition — Revenue – Collaborations and Services — The Company enters into licensing, research or other agreements under which the Company licenses certain rights to its product candidates to third parties, conducts research or provides other services to third parties. The terms of these arrangements may include but are not limited to payment to the Company of one or more of the following: up-front license fees; development, regulatory, and commercial milestone payments; payments for commercial manufacturing and clinical supply services the Company provides; and royalties on net sales of licensed products and sublicenses of the rights. As part of the accounting for these arrangements, the Company must develop assumptions that require judgment such as determining the performance obligation in the contract and determining the stand-alone selling price for each performance obligation identified in the contract. With respect to the Company's significant collaboration and service agreement with UT that includes a long-term commercial supply agreement (as amended, the "CSA"), the Company has identified three distinct performance obligations: (1) the license, supply of product to be used in clinical development, and continued development and approval support for Tyvaso DPI ("R&D Services and License"); (2) development activities for the next generation of the product ("Next-Gen R&D Services"); and (3) a material right associated with current and future manufacturing and supply of product ("Manufacturing Services"). Pre-production activities under the CSA, such as facility expansion services and other administrative services, were considered bundled services under the Manufacturing Services performance obligation as required by ASC 606. Following the FDA's approval of Tyvaso DPI, UT began issuing purchase orders for the supply of product, which represents distinct contracts and performance obligations under ASC 606. Revenue is recognized for the supply of product at a point in time, once control is transferred to UT. See Note 10 – *Collaboration, Licensing and Other Arrangements*.

If an arrangement has multiple performance obligations, the allocation of the transaction price is determined from observable market inputs, and the Company uses key assumptions to determine the stand-alone selling price, which may include development timelines, reimbursement rates for personnel costs, discount rates, and probabilities of technical and regulatory success. Revenue is recognized based on the measurement of progress as the performance obligation is satisfied and consideration received that does not meet the requirements to satisfy the revenue recognition criteria is recorded as deferred revenue. Current deferred revenue consists of amounts that are expected to be recognized as revenue in the next 12 months. Amounts that the Company expects will not be recognized within the next 12 months are classified as long-term deferred revenue. For further information, see Note 10 – *Collaboration, Licensing and Other Arrangements*.

The Company recognizes upfront license payments as revenue upon delivery of the license only if the license is determined to be a separate unit of accounting from the other undelivered performance obligations. The undelivered performance obligations typically include manufacturing or development services or research and/or steering committee services. If the license is not considered as a distinct performance obligation, then the license and other undelivered performance obligations would be evaluated to determine if such should be accounted for as a single unit of accounting. If concluded to be a single performance obligation, the transaction price for the single performance obligation is recognized as revenue over the estimated period of when the performance obligation is satisfied. If the license is considered to be a distinct performance obligation, then the estimated revenue is included in the transaction price for the contract, which is then allocated to each performance obligation based on the respective standalone selling prices.

Whenever the Company determines that an arrangement should be accounted for over time, the Company determines the period over which the performance obligations will be performed, and revenue will be recognized over the period the Company is expected to complete its performance obligations. Significant management judgment is required in determining the level of effort required under an arrangement and the period over which the Company is expected to complete its performance obligations under an arrangement.

The Company's collaboration agreements typically entitle the Company to additional payments upon the achievement of development, regulatory and sales milestones. If the achievement of a milestone is considered probable at the inception of the collaboration, the related milestone payment is included with other collaboration consideration, such as upfront fees and research funding, in the Company's revenue calculation. If these milestones are not considered probable at the inception of the collaboration, the milestones will typically be recognized in one of two ways depending on the timing of when the milestone is achieved. If the milestone is improbable at inception and subsequently deemed probable of achievement, such will be added to the transaction price, resulting in a cumulative adjustment to revenue. If the milestone is achieved after the performance period has been completed and all performance obligations have been delivered, the Company will recognize the milestone payment as revenue in its entirety in the period the milestone was achieved.

The Company's collaborative agreements, for accounting purposes, represent contracts with customers and therefore are not subject to accounting literature on collaborative agreements. The Company grants licenses to its intellectual property, supplies raw materials, semi-finished goods or finished goods, provides research and development services and offers sales support for the co-promotion of products, all of which are outputs of the Company's ongoing activities, in exchange for consideration. Accordingly, the Company concluded that its collaborative agreements must generally be accounted for pursuant to ASC 606.

For collaboration agreements that allow collaboration partners to select additional optioned products or services, the Company evaluates whether such options contain material rights (i.e., have exercise prices that are discounted compared to what the Company would charge for a similar product or service to a new collaboration partner). The exercise price of these options includes a

combination of licensing fees, event-based milestone payments and royalties. When these amounts in aggregate are not offered at a discount that exceeds discounts available to other customers, the Company concludes the option does not contain a material right, and therefore is not included in the transaction price at contract inception. The Company assessed the CSA agreement with UT and determined that a material right existed for the manufacturing services performance obligation. The transaction price is allocated to the material right as well as the remaining performance obligations in accordance with ASC 606. The Company also evaluates grants of additional licensing rights upon option exercises to determine whether such should be accounted for as separate contracts.

Revenue Recognition – Royalties — The Company recognizes royalty revenue for a sales-based or usage-based royalty if it is promised in exchange for an intellectual property license. The royalty revenue is recognized as the latter of the subsequent sale of the product occurs or if the performance obligation to which the royalty has been allocated has been satisfied or partially satisfied. The Company’s collaborative agreement with UT entitles it to receive low double-digit royalties on net sales of Tyvaso DPI for the license of the Company’s IP that was considered to be interdependent with the development activities that supported the approval of Tyvaso DPI.

The Company’s net revenue and cost of revenue and goods sold as shown on the condensed consolidated statement of operations is comprised of revenue generated from product sales, services and royalties as shown below (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Net revenue:				
Product sales ⁽¹⁾	\$ 29,278	\$ 17,417	\$ 58,004	\$ 28,427
Services ⁽²⁾	278	1,173	500	2,155
Royalties ⁽³⁾	19,055	304	30,733	304
Total net revenue	\$ 48,611	\$ 18,894	\$ 89,237	\$ 30,886

(1) Amounts represent the net sales of Afrezza and V-Go to wholesalers and specialty pharmacies and Tyvaso DPI to UT.

(2) Amounts represent revenue generated from the Company’s collaboration arrangements, including Next-Gen R&D Services (as defined in Note 10) for UT as well as arrangements with other collaboration partners. See Note 10 – *Collaboration, Licensing and Other Arrangements*.

(3) Amounts represent royalties on UT’s net sales of Tyvaso DPI.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Cost of goods sold and cost of revenue:				
Product sales	\$ 13,995	\$ 12,481	\$ 30,023	\$ 22,967
Services	242	434	427	946
Total cost of goods sold and cost of revenue	\$ 14,237	\$ 12,915	\$ 30,450	\$ 23,913

The Company follows detailed accounting guidance in measuring revenue and certain judgments affect the application of its revenue policy. For example, in connection with its existing collaboration agreements, the Company has recorded on its condensed consolidated balance sheets short-term and long-term deferred revenue based on its best estimate of when such revenue will be recognized. Short-term deferred revenue consists of amounts that are expected to be recognized as revenue in the next 12 months. Amounts that the Company expects will not be recognized within the next 12 months are classified as long-term deferred revenue. However, this estimate is based on the Company’s current project development plan and, if the development plan should change in the future, the Company may recognize a different amount of deferred revenue over the next 12-month period.

Milestone Payments — At the inception of each arrangement that includes development milestone payments, the Company evaluates whether the milestones are considered probable of being reached and estimates the amount to be included in the transaction price using the most likely amount method. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within the control of the Company or the customer, such as regulatory approvals, are not considered probable of being achieved until those approvals are received. The transaction price is then allocated to each performance obligation on a relative stand-alone selling price basis, for which the Company recognizes revenue as, or when, the performance obligations under the contract are satisfied. At the end of each subsequent reporting period, the Company will re-evaluate the probability of achievement of such development milestones and any related constraint, and if necessary, adjusts its estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which would affect license, collaboration, other revenue, and earnings in the period of adjustment.

Cost of Goods Sold — Cost of goods sold includes material, labor costs and manufacturing overhead. Cost of goods sold also includes a component of current period manufacturing costs in excess of costs capitalized into inventory (“excess capacity costs”). These costs, in addition to the impact of the revaluation of inventory for standard costing, and write-offs of inventory are recorded as expenses in

the period in which they are incurred, rather than as a portion of inventory costs. Cost of goods sold excludes the cost of insulin purchased under the Company's Insulin Supply Agreement (the "Insulin Supply Agreement") with Amphastar Pharmaceuticals, Inc. ("Amphastar"). All insulin inventory on hand was written off and the full purchase commitment contract to purchase future insulin was accrued as a recognized loss on purchase commitments as of the end of 2016.

Cost of Revenues – Collaborations and Services — Cost of revenues for collaborations and services includes material, labor costs, manufacturing overhead, and excess capacity costs. These costs, in addition to the write-offs of inventory, are recorded as expenses in the period in which they are incurred, rather than as a portion of inventory costs. Cost of revenues for collaborations and services also includes the cost of product development.

Research and Development ("R&D") — Clinical trial expenses result from obligations under contracts with vendors, consultants and clinical site agreements in addition to internal costs associated with conducting clinical trials. R&D costs are expensed as incurred. Clinical study and certain research costs are recognized over the service periods specified in the contracts and adjusted as necessary based upon an ongoing review of the level of effort and costs actually incurred. Nonrefundable advance payments for services to be received in the future for use in R&D activities are recorded as prepaid assets and expensed in the period when the services are performed.

Cash and Cash Equivalents — The Company considers all highly liquid investments with original or remaining maturities of 90 days or less at the time of purchase, that are readily convertible into cash to be cash equivalents. As of June 30, 2023 and December 31, 2022, cash equivalents were comprised of money market funds, corporate bonds and commercial paper with original maturities less than 90 days from the date of purchase.

Held-to-Maturity Investments — The Company's investments generally consist of commercial paper, corporate notes or bonds and U.S. Treasury securities. As of June 30, 2023 and December 31, 2022, the Company held short-term and long-term investments of debt securities, including commercial paper and bonds. The Company assesses whether it has any intention to sell the investment before maturity, whether any declines in fair value are the result of credit losses, as well as whether there were other-than-temporary impairments associated with the available for sale investment. The Company intends to hold its investments until maturity; therefore, these investments are stated at amortized cost. The investments with maturities less than 12 months are included in short-term investments and investments with maturities in excess of twelve months are included in long-term investments in the condensed consolidated balance sheets. The amortization or accretion of the Company's investments is recognized as interest income in the condensed consolidated statements of operations.

Available-for-Sale Investment — In June 2021, the Company purchased a \$3.0 million convertible promissory note (the "Thirona convertible note") issued by Thirona Bio, Inc. ("Thirona"). In January 2022, the Company purchased an additional \$5.0 million convertible promissory note issued by Thirona. Unless earlier converted into conversion shares pursuant to the note purchase agreement, the principal and accrued interest shall be due and payable by Thirona on demand by the Company at any time after the maturity date. The Thirona convertible notes were amended in February 2023, which extended the maturity date from December 31, 2022 to June 30, 2024. The Thirona convertible notes are general unsecured obligations of Thirona and accrue interest at a rate of 6% per annum. The Thirona convertible notes are classified as available-for-sale securities and are included in prepaid expenses and other current assets in the condensed consolidated balance sheets. The Company assesses whether it has any intention to sell the investment, determines fair value of its available-for-sale investments using level 3 inputs as well as assesses whether there were other-than-temporary impairments associated with the available-for-sale investment. Unrealized holding gains and losses are excluded from earnings and reported in other comprehensive income until realized. In June 2021, the Company and Thirona also entered into a collaboration agreement to develop a compound for the treatment of fibrotic lung diseases. See Note 10 – *Collaboration, Licensing and Other Arrangements*.

Concentration of Credit Risk — Financial instruments that potentially subject the Company to concentration of credit risk consist of cash and cash equivalents and investments. Cash and cash equivalents are held in high credit quality institutions. Cash equivalents consist of interest-bearing money market funds and U.S. Treasury securities with original or remaining maturities of 90 days or less at the time of purchase. Investments generally consist of commercial paper, corporate notes or bonds and U.S. Treasury securities. The cash equivalents and investments are regularly monitored by management.

Accounts Receivable and Allowance for Credit Losses — Accounts receivable are recorded at the invoiced amount and are not interest bearing. Accounts receivable are presented net of an allowance for credit losses if there are estimated losses resulting from the inability of its customers to make required payments. The Company makes ongoing assumptions relating to the collectability of its accounts receivable in its calculation of the allowance for credit losses. The allowance for expected credit losses is based primarily on past collections experience relative to the length of time receivables are past due. However, when available evidence reasonably supports an assumption that future economic conditions will differ from current and historical payment collections, an adjustment is reflected in the allowance for expected credit losses. Accounts receivable are also presented net of an allowance for product returns and trade discounts and allowances because the Company's customers have the right of setoff for these amounts against the related accounts receivable.

Pre-Launch Inventory — An improvement to the manufacturing process for the Company’s primary excipient, fumaryl diketopiperazine (“FDKP”) was demonstrated to be viable and management expects to realize an economic benefit in the future as a result of such process improvement. Accordingly, the Company is required to assess whether to capitalize inventory costs related to such excipient prior to regulatory approval of the new supplier and the improved manufacturing process. In doing so, management must consider a number of factors in order to determine the amount of inventory to be capitalized, including the historical experience of achieving regulatory approvals for the Company’s manufacturing process, feedback from regulatory agencies on the changes being effected and the amount of inventory that is likely to be used in commercial production. The shelf life of the excipient will be determined as part of the regulatory approval process; in the interim, the Company must assess the available stability data to determine whether there is likely to be adequate shelf life to support anticipated future sales occurring beyond the expected approval date of the new raw material. If management is aware of any specific material risks or contingencies other than the normal regulatory review and approval process, or if the criteria for capitalizing inventory produced prior to regulatory approval are otherwise not met, the Company would not capitalize such inventory costs, choosing instead to recognize such costs as R&D expense in the period incurred.

Inventories — Inventories are stated at the lower of cost or net realizable value. The Company determines the cost of inventory using the first-in, first-out, or FIFO, method. The Company capitalizes inventory costs associated with the Company’s products based on management’s judgment that future economic benefits are expected to be realized; otherwise, such costs are expensed as incurred as cost of goods sold. The Company uses a contract manufacturing organization outside of the U.S. for certain stages of V-Go inventory.

The Company periodically analyzes its inventory levels to identify inventory that may expire or has a cost basis in excess of its estimated realizable value and writes down such inventories, as appropriate. In addition, the Company’s products are subject to strict quality control and monitoring which the Company performs throughout the manufacturing process. If certain batches or units of product no longer meet quality specifications or may become obsolete or are forecasted to become obsolete due to expiration, the Company will record a charge to write down such unmarketable inventory to its estimated net realizable value. The Company analyzes its inventory levels to identify inventory that may expire or has a cost basis in excess of its estimated realizable value. The Company performs an assessment of projected sales and evaluates the lower of cost or net realizable value and the potential excess inventory on hand at the end of each reporting period.

Property and Equipment — Property and equipment is recorded at historical cost, net of accumulated depreciation. Depreciation expense is recorded over the assets’ useful lives on a straight-line basis. See Note 6 – *Property and Equipment*.

Impairment of Long-Lived Assets — Long-lived assets include property and equipment, operating lease right-of-use assets and other intangible assets. The Company evaluates long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying value of an asset may not be recoverable. Assets are considered to be impaired if the carrying value is considered to be unrecoverable.

If the Company believes an asset to be impaired, the impairment recognized is the amount by which the carrying value of the asset exceeds the fair value of the asset. Fair value is determined using the market, income or cost approaches as appropriate for the asset. Any write-downs are treated as permanent reductions in the carrying amount of the asset and recognized as an operating loss.

Acquisitions — The Company first determines whether a set of assets acquired constitute a business and should be accounted for as a business combination. If the assets acquired do not constitute a business, the Company accounts for the transaction as an asset acquisition. Business combinations are accounted for by means of the acquisition method of accounting. Under the acquisition method, assets acquired, including in-process R&D (“IPR&D”) projects, and liabilities assumed are recorded at their respective fair values as of the acquisition date in the Company’s condensed consolidated financial statements. The excess of the fair value of consideration transferred over the fair value of the net assets acquired is recorded as goodwill. Contingent consideration obligations incurred in connection with a business combination (including the assumption of an acquiree’s liability arising from an acquisition it consummated prior to the Company’s acquisition) are recorded at their fair values on the acquisition date and remeasured at their fair values each subsequent reporting period until the related contingencies have been resolved. The resulting changes in fair values are recorded in earnings. In contrast, asset acquisitions are accounted for by using a cost accumulation and allocation model. Under this model, the cost of the acquisition is allocated to the assets acquired and liabilities assumed. IPR&D projects with no alternative future use are recorded in R&D expense upon acquisition, and contingent consideration obligations incurred in connection with an asset acquisition are recorded when it is probable that they will occur and they can be reasonably estimated. See Note 2 – *Acquisition*.

Goodwill and Other Intangible Assets — The fair value of acquired intangible assets is determined using an income-based approach referred to as the excess earnings method utilizing Level 3 fair value inputs. Market participant valuations assume a global view considering all potential jurisdictions and indications based on discounted after-tax cash flow projections, risk adjusted for estimated probability of technical and regulatory success.

The Company tests for impairment annually on a reporting unit basis, at the beginning of the Company’s fourth fiscal quarter and between annual tests if events and circumstances indicate it is more likely than not that the fair value of a reporting unit is less than its carrying amount. To the extent the carrying amount of a reporting unit is less than its estimated fair value, an impairment charge will be recorded.

Finite-lived intangible assets are amortized on a straight-line basis over the estimated useful life. Estimated useful lives are determined considering the period assets are expected to contribute to future cash flows. Finite-lived intangible assets are tested for impairment when facts or circumstances suggest that the carrying value of the asset may not be recoverable. If the carrying value exceeds the projected undiscounted pretax cash flows of the intangible asset, an impairment loss equal to the excess of the carrying value over the estimated fair value (discounted after-tax cash flows) is recognized.

Recognized Loss on Purchase Commitments — The Company assesses whether losses on long-term purchase commitments should be accrued. Losses that are expected to arise from firm, non-cancellable, commitments for the future purchases are recognized unless recoverable. When making the assessment, the Company also considers whether it is able to renegotiate with its vendors. The recognized loss on purchase commitments is reduced as inventory items are received. If, subsequent to an accrual, a purchase commitment is successfully renegotiated, the gain is recognized in the Company's condensed consolidated statements of operations.

Milestone Rights Liability — In July 2013, in conjunction with the execution of a (now repaid) loan agreement with Deerfield Private Design Fund II, L.P. and Deerfield Private Design International II, L.P. (collectively, "Deerfield"), the Company entered into a Milestone Rights Purchase Agreement (the "Milestone Rights Agreement") pursuant to which the Company issued certain milestone rights to Deerfield Private Design Fund II, L.P. and Horizon Santé FLML SÁRL (the "Original Milestone Purchasers"). The foregoing milestone rights provided the Original Milestone Purchasers certain rights to receive payments of up to \$90.0 million upon the occurrence of specified strategic and Afrezza sales milestones, \$60.0 million of which remains payable as of June 30, 2023 upon achievement of such milestones (collectively, the "Milestone Rights"). In December 2021, the Milestone Rights were purchased by Barings Global Special Situations Credit Fund 4 (Delaware), L.P. and Barings Global Special Situations Credit 4 (LUX) S.ar.l. (together the "Milestone Purchasers"). As a result, the Milestone Purchasers have assumed the obligations of the Original Milestone Purchasers and are now entitled to all rights under the Milestone Rights Agreement. The Milestone Rights liability is reported at fair value at the date of the agreement which is periodically offset against payments. See Note 11 – *Fair Value of Financial Instruments*.

The initial fair value estimate of the Milestone Rights was calculated using the income approach in which the cash flows associated with the specified contractual payments were adjusted for both the expected timing and the probability of achieving the milestones and discounted to present value using a selected market discount rate. The expected timing and probability of achieving the milestones was developed with consideration given to both internal data, such as progress made to date and assessment of criteria required for achievement, and external data, such as market research studies. The discount rate was selected based on an estimation of required rate of returns for similar investment opportunities using available market data. The Milestone Rights liability will be remeasured as the specified milestone events are achieved. Specifically, as each milestone event is achieved, the portion of the initially recorded Milestone Rights liability that pertains to the milestone event being achieved will be remeasured to the amount of the specified related milestone payment. The resulting change in the balance of the Milestone Rights liability due to remeasurement will be recorded in the Company's condensed consolidated statements of operations as interest expense. Furthermore, the Milestone Rights liability will be reduced upon the settlement of each milestone payment. As a result, each milestone payment would be effectively allocated between a reduction of the recorded Milestone Rights liability and an expense representing a return on a portion of the Milestone Rights liability paid to the investor for the achievement of the related milestone event. As of June 30, 2023, a \$5.0 million milestone rights payment was included in accrued expenses and other current liabilities in our condensed consolidated balance sheets, which will be paid in the third quarter of 2023. (See Note 8 – *Accrued Expenses and Other Current Liabilities* and Note 9 – *Borrowings*.)

Fair Value of Financial Instruments — The Company applies various valuation approaches in determining the fair value of its financial assets and liabilities within a hierarchy that maximizes the use of observable inputs and minimizes the use of unobservable inputs by requiring that observable inputs be used when available. Observable inputs are inputs that market participants would use in pricing the asset or liability based on market data obtained from sources independent of the Company. Unobservable inputs are inputs that reflect the Company's assumptions about the inputs that market participants would use in pricing the asset or liability and are developed based on the best information available in the circumstances. The fair value hierarchy is broken down into three levels based on the source of inputs as follows:

Level 1 — Quoted prices for identical instruments in active markets.

Level 2 — Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations whose inputs are observable or whose significant value drivers are observable.

Level 3 — Significant inputs to the valuation model are unobservable.

Income Taxes — The provisions for federal, foreign, state and local income taxes are calculated on pre-tax income based on current tax law and include the cumulative effect of any changes in tax rates from those used previously in determining deferred tax assets and liabilities. Deferred income tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the year in which the temporary differences are expected to be recovered or settled. A valuation allowance is recorded to reduce net deferred income tax assets to amounts that are more likely than not to be realized.

For uncertain tax positions, the Company determines whether it is “more likely than not” that a tax position will be sustained upon examination by the appropriate taxing authorities before any part of the benefit can be recorded in the financial statements. For those tax positions where it is “not more likely than not” that a tax benefit will be sustained, no tax benefit is recognized. Penalties, if probable and reasonably estimable, are recognized as a component of income tax expense. The Company has reduced its deferred tax assets for uncertain tax positions but has not recorded liabilities for income tax expense, penalties, or interest.

Contingencies — The Company records a loss contingency for a liability when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. These accruals represent management’s best estimate of probable loss. Disclosure also is provided when it is reasonably possible that a loss will be incurred or when it is reasonably possible that the amount of a loss will exceed the recorded provision. On a quarterly basis, the Company reviews the status of each significant matter and assesses its potential financial exposure. Significant judgment is required in both the determination of probability and the determination as to whether an exposure is reasonably estimable. Because of uncertainties related to these matters, accruals are based only on the best information available at the time. As additional information becomes available, the Company reassesses the potential liability related to pending claims and litigation and may revise its estimates.

Stock-Based Compensation — Share-based payments to employees, including grants of restricted stock units (“RSUs,”) performance-based non-qualified stock options awards (“PNQs”), restricted stock units with market conditions (“Market RSUs”), options and the compensatory elements of employee stock purchase plans, are recognized in the condensed consolidated statements of operations based upon the fair value of the awards at the grant date. RSUs are valued based on the market price on the grant date. Market RSUs are valued using a Monte Carlo valuation model and RSUs with performance conditions are evaluated for the probability that the performance conditions will be met and estimates the date at which the performance conditions will be met in order to properly recognize stock-based compensation expense over the requisite service period. The Company uses the Black-Scholes option valuation model to estimate the grant date fair value of employee stock options and the compensatory elements of employee stock purchase plans.

Net Income (Loss) Per Share of Common Stock — Basic net income or loss per share excludes dilution for potentially dilutive securities and is computed by dividing net income or loss by the weighted average number of common shares outstanding during the period. Diluted net income or loss per share reflects the potential dilution under the treasury method that could occur if securities or other contracts to issue common stock were exercised or converted into common stock. For periods where the Company has presented a net loss, potentially dilutive securities are excluded from the computation of diluted net loss per share as they would be anti-dilutive.

Recently Issued Accounting Standards — From time to time, new accounting pronouncements are issued by the FASB or other standard setting bodies that are adopted by the Company as of the specified effective date. Unless otherwise discussed, the Company believes that the impact of recently issued standards that are not yet effective will not have a material impact on the Company’s condensed consolidated financial position or results of operations upon adoption.

2. Acquisition

In May 2022, the Company purchased certain assets and assumed certain liabilities associated with the V-Go wearable insulin delivery device from Zealand Pharma A/S and Zealand Pharma US, Inc. (together “Zealand”).

Under the terms of the agreement with Zealand, the Company paid up-front consideration of \$15.3 million for certain assets and assumed liabilities related to V-Go. In addition, the Company will be obligated to make one-time sales-based milestone payments to Zealand totaling up to a maximum of \$10.0 million upon the achievement of specified annual revenue milestones between \$40 million and \$100 million.

The total purchase consideration for V-Go was as follows (in thousands):

Fair value of consideration:	Amount
Cash consideration	\$ 15,341
Fair value of contingent consideration ⁽¹⁾	610
Total	\$ 15,951

(1) Subsequent changes in the fair value are reported in general and administrative expenses. As of June 30, 2023, the fair value of the contingent milestone liability was \$0.6 million. The fair value of the contingent milestone liability as of December 31, 2022 was consistent with the fair value on the acquisition date.

The fair value of the contingent milestone liability was estimated using the Monte Carlo simulation method for the calculation of the potential payment and the Geometric Brownian Motion forecasting model to estimate the underlying revenue. Market based inputs and other level 3 inputs were used to forecast future revenue. The key inputs used included a risk-free rate of 3.92%, dividend yield of 0%, volatility of 43%, period of 15 years and credit risk of 17%.

The transaction was accounted for using the acquisition method of accounting, which requires, among other things, the assets acquired and liabilities assumed to be recognized at their respective fair values as of the acquisition date. The excess of the purchase price over those fair values was recorded as goodwill, which will be amortized over a period of 15 years for tax purposes. The estimates and assumptions used include the projected timing and amount of future cash flows and discount rates to reflect the risk inherent in the future cash flows. In May 2023, the Company finalized the fair value for assets acquired and liabilities assumed for V-Go.

Inventory of \$11.2 million consisted of raw materials, semi-finished goods and finished goods. The fair value of the inventory was determined based on the estimated selling price to be generated from the finished goods, less costs to sell, including a reasonable margin, which are level 3 inputs not observable in the market. Property and equipment and assumed liabilities were recorded at their carrying amounts which were deemed to approximate their fair values based on level 3 unobservable inputs. The fair values of the right-of-use assets and lease liabilities for assumed operating leases were assessed in accordance with ASC 842, *Leases*, based on discounted cash flow from lease payments, utilizing the Company's incremental borrowing rate of 7.25%.

The fair value of the intangible asset was determined by applying the income approach based on significant level 3 unobservable inputs. The income approach estimates fair value based on the present value of cash flow that the assets could be expected to generate in the future. The Company developed internal estimates for expected cash flows in the present value calculation using inputs and significant assumptions that include historical revenues and earnings, long-term growth rate, discount rate, contributory asset charges and future tax rates, among others.

The information below reflects the amounts of identifiable assets acquired and liabilities assumed as of May 31, 2023 (in thousands):

	Amount
Assets:	
Inventory ⁽¹⁾	\$ 11,152
Property and equipment	2,921
Goodwill ⁽¹⁾	1,931
Intangible asset - Developed technology	1,200
Operating lease right-of-use assets	1,812
Total assets	19,016
Liabilities:	
Liabilities assumed ⁽¹⁾	1,253
Operating lease liability	1,812
Total liabilities	3,065
Net assets acquired	\$ 15,951

(1) Through May 2023, goodwill related to the acquisition of V-Go was adjusted for a reduction in rebate-related liabilities partially offset by a reserve for inventory obsolescence.

There were no acquisition-related costs incurred during the three and six months ended June 30, 2023.

Supplemental Pro Forma Information (unaudited)

For the three and six months ended June 30, 2023, net revenue for V-Go was \$4.8 million and \$10.0 million, respectively, and loss from operations was \$0.5 million and \$1.5 million, respectively. For each of the three and six month periods ended June 30, 2022, net revenue and loss from operations for V-Go was \$2.1 million and \$0.3 million, respectively.

The following unaudited pro forma summary presents consolidated information of the Company as if the acquisition had occurred on January 1, 2022 (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Net revenue	\$ 48,611	\$ 24,992	\$ 89,237	\$ 43,082
Net loss	(5,265)	(28,763)	(15,060)	(54,505)
Net loss per share - basic and diluted	(0.02)	(0.11)	(0.06)	(0.22)

These pro forma amounts have been calculated by applying the Company's accounting policies assuming transaction costs had been incurred beginning January 1, 2022. The Company did not have any other material nonrecurring pro forma adjustments directly attributable to the acquisition included in the reported pro forma revenue and loss.

3. Investments

Cash Equivalents — Cash equivalents consist of highly liquid investments with original or remaining maturities of 90 days or less at the time of purchase that are readily convertible into cash.

Available-for-Sale Investment — The Thirona convertible notes are classified as available-for-sale securities and are included in prepaid expenses and other current assets in the condensed consolidated balance sheets. Available-for-sale investments are subsequently measured at fair value with realized gains and losses reported in other income (expense) in the condensed consolidated statements of operations. Unrealized holding gains and losses are excluded from earnings and reported in other comprehensive income until realized. The Company determines fair value of its available-for-sale investments using level 3 inputs. The Company evaluates the fair value of its investment in Thirona by applying a Monte Carlo simulation model. For the three and six months ended June 30, 2023, the Company recognized \$0.1 million and \$0.2 million, respectively, of interest income on investment and \$0.1 million and \$0.2 million of interest income on investment, respectively, for the three and six months ended June 30, 2022. As of June 30, 2023 and December 31, 2022, the fair value of the Company's investment in Thirona was \$8.4 million and \$7.1 million, respectively. For the three and six months ended June 30, 2023, the Company recognized a gain of \$0.9 million on its investment in Thirona as a result of the recovery of a temporary impairment, as well as an unrealized holding gain of \$0.4 million.

Held-to-Maturity Investments — Investments consist of highly liquid investments that are intended to facilitate liquidity and capital preservation. The amortization or accretion of the Company's investments is recognized as interest income in the condensed consolidated statements of operations. For the three and six months ended June 30, 2023, the Company recognized \$1.0 million and \$2.2 million, respectively, of interest income on investments and \$0.4 million, for each respective period, of amortization on certain investments. For the three and six months ended June 30, 2022, the Company recognized \$0.5 million and \$0.9 million, respectively, of interest income on investments, and \$0.2 million and \$0.5 million, respectively, of amortization on certain investments. No allowance for credit losses on held-to-maturity securities was required as of June 30, 2023.

The contractual maturities of the Company's held to maturity investments are summarized below (in thousands):

	June 30, 2023		December 31, 2022	
	Amortized Cost Basis	Aggregate Fair Value	Amortized Cost Basis	Aggregate Fair Value
Due in one year or less ⁽¹⁾	\$ 133,088	\$ 132,864	\$ 152,862	\$ 156,976
Due after one year through five years	2,282	2,258	1,961	1,948
Total	\$ 135,370	\$ 135,122	\$ 154,823	\$ 158,924

(1) The investments due in one year or less include cash equivalents of \$74.9 million as of June 30, 2023 and \$51.8 million as of December 31, 2022.

The fair value of the cash equivalents, long-term and short-term investments are disclosed below (dollars in thousands).

June 30, 2023				
	Investment Level	Amortized Cost (Carrying Value)	Gross Unrealized Holding Gains (Losses)	Estimated Fair Value
Commercial bonds and paper	Level 2	\$ 46,369	\$ (108)	\$ 46,261
Money market funds	Level 1	73,479	6	73,485
U.S. Treasuries	Level 2	15,522	(146)	15,376
Total cash equivalents and investments		135,370	(248)	135,122
Less: cash equivalents		74,925	—	74,925
Total Investments		<u>\$ 60,445</u>	<u>\$ (248)</u>	<u>\$ 60,197</u>

December 31, 2022				
	Investment Level	Amortized Cost (Carrying Value)	Gross Unrealized Holding Gains (Losses)	Estimated Fair Value
Commercial bonds and paper	Level 2	\$ 66,762	\$ (594)	\$ 66,168
Money market funds	Level 1	51,783	—	51,783
U.S. Treasuries	Level 2	36,278	(587)	35,691
Total cash equivalents and investments		154,823	(1,181)	153,642
Less: cash equivalents		51,783	—	51,783
Total Investments		<u>\$ 103,040</u>	<u>\$ (1,181)</u>	<u>\$ 101,859</u>

As of June 30, 2023, there was \$0.2 million of amounts receivable included in our condensed consolidated balance sheets as prepaid expenses and other current assets, which consisted of a *de minimis* amount of accrued interest receivable and \$0.2 million of amount receivable on matured investment. As of December 31, 2022, there was \$0.6 million of accrued interest receivable and \$5.1 million of amount receivable on matured investment.

4. Accounts Receivable

Accounts receivable, net consists of the following (in thousands):

	June 30, 2023	December 31, 2022
Accounts receivable – commercial		
Accounts receivable, gross	\$ 20,078	\$ 19,359
Wholesaler distribution fees and prompt pay discounts	(3,319)	(2,536)
Reserve for returns	(4,316)	(4,108)
Total accounts receivable – commercial, net	12,443	12,715
Accounts receivable – collaborations and services	15,346	4,086
Total accounts receivable, net	<u>\$ 27,789</u>	<u>\$ 16,801</u>

As of June 30, 2023 and December 31, 2022, the allowance for doubtful accounts for commercial accounts receivable was *de minimis*. The Company had three wholesale distributors representing approximately 78% of commercial accounts receivable as of June 30, 2023 and approximately 71% of gross sales for each of the three and six months ended June 30, 2023. As of December 31, 2022, the Company had three wholesale distributors representing approximately 79% of commercial accounts receivables.

As of June 30, 2023 and December 31, 2022, there was no allowance for credit losses for accounts receivable for collaborations and services. The Company had one collaboration partner, UT, that comprised 100% of the collaboration and services net accounts receivable as of June 30, 2023 and December 31, 2022 and approximately 100% of gross revenue from collaborations and services for the three and six months ended June 30, 2023.

5. Inventories

Inventories consist of the following (in thousands):

	June 30, 2023	December 31, 2022
Raw materials	\$ 5,859	\$ 5,739
Work-in-process	10,698	13,815
Finished goods	8,733	2,218
Total inventory	<u>\$ 25,290</u>	<u>\$ 21,772</u>

Work-in-process and finished goods as of June 30, 2023 and December 31, 2022 include conversion costs and exclude the cost of insulin. All insulin inventory on hand was written off and the projected loss on the purchase commitment contract to purchase future insulin was accrued as of the end of 2016. Raw materials inventory included \$0.8 million of pre-launch inventory as of June 30, 2023 and December 31, 2022, which consisted of FDKP received in November 2019. The Company expects to request approval from the FDA for the new source of FDKP in 2024.

The Company analyzed its inventory levels to identify inventory that may expire or has a cost basis in excess of its estimated realizable value. The Company also performed an assessment of projected sales and evaluated the lower of cost or net realizable value and the potential excess inventory on hand as of June 30, 2023 and December 31, 2022. Inventory that was forecasted to become obsolete due to expiration as well as inventory that does not meet acceptable standards is recorded in costs of goods sold in the condensed consolidated statements of operations. As a result of this assessment, there was an inventory write-off of \$1.0 million and \$3.4 million for the three and six months ended June 30, 2023, respectively. For the three and six months ended June 30, 2022, there was an inventory write-off of \$0.5 million as a result of this assessment.

6. Property and Equipment

Property and equipment consists of the following (dollars in thousands):

	Estimated Useful	June 30, 2023	December 31, 2022
	Life (Years)		
Land	—	\$ 875	\$ 875
Buildings	39-40	17,389	17,389
Building improvements	5-40	43,527	38,952
Machinery and equipment	3-15	58,905	58,542
Furniture, fixtures and office equipment	5-10	2,976	2,976
Computer equipment and software	3	8,646	8,246
Construction in progress	—	37,412	16,706
Total property and equipment		169,730	143,686
Less accumulated depreciation		(100,220)	(98,560)
Total property and equipment, net		<u>\$ 69,510</u>	<u>\$ 45,126</u>

Depreciation expense related to property and equipment was as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Depreciation Expense	\$ 1,095	\$ 727	\$ 2,133	\$ 1,326

In November 2021, the Company sold certain land, building and improvements located in Danbury, CT (the "Property") to an affiliate of Creative Manufacturing Properties (the "Purchaser") for a sales price of \$102.3 million, subject to terms and conditions contained in a purchase and sale agreement. Effective with the closing of this transaction, the Company entered into a 20-year lease agreement with the Purchaser (the "Sale-Leaseback Transaction"). The sale of the Property and subsequent lease did not result in the transfer of control of the Property to the Purchaser; therefore, the Sale-Leaseback Transaction qualified as a failed sale leaseback transaction whereby the lease is accounted for as a finance lease and the Property remains as a long-lived asset of the Company and is depreciated at its remaining useful life of 20 years or less. See Note 15 – *Commitments and Contingencies*.

7. Goodwill and Other Intangible Asset

Goodwill — Goodwill represents the excess of the purchase price over the identifiable tangible and intangible assets acquired plus liabilities assumed arising from business combinations. The balance of goodwill was approximately \$1.9 million and \$2.4 million as of June 30, 2023 and December 31, 2022, respectively, as a result of the Company's acquisition of V-Go in May 2022. Through May 2023, goodwill related to the acquisition of V-Go was adjusted for a reduction in rebate-related liabilities partially offset by a reserve for inventory obsolescence. Goodwill is tested at least annually for impairment by assessing qualitative factors in determining whether it is more likely than not that the fair value of net assets is below their carrying amounts. See Note 1 – *Description of Business and Significant Accounting Policies*.

Other Intangible Asset — Other intangible asset consisted of the following (dollars in thousands):

	Estimated Useful Life (Years)	June 30, 2023			December 31, 2022		
		Cost	Accumulated Amortization	Net Book Value	Cost	Accumulated Amortization	Net Book Value
Developed technology	15	\$ 1,200	\$ (87)	\$ 1,113	\$ 1,200	\$ (47)	\$ 1,153

Amortization expense related to the other intangible asset was *de minimis* for the six months ended June 30, 2023.

The estimated annual amortization expense for the other intangible asset for the years ended December 31, 2023 through 2027 will be approximately \$0.1 million per year and \$0.6 million, thereafter.

The Company evaluates its other intangible asset for potential impairment when events or changes in circumstances indicate that the carrying amount of an asset or asset group may not be recoverable. See Note 1 – *Description of Business and Significant Accounting Policies*.

8. Accrued Expenses and Other Current Liabilities

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

	June 30, 2023	December 31, 2022
Salary and related expenses	\$ 12,140	\$ 14,906
Discounts and allowances for commercial product sales	10,153	8,504
Accrued interest ⁽¹⁾	6,267	2,201
Current portion of milestone rights liability ⁽²⁾	1,676	924
Deferred lease liability	944	1,304
Professional fees	818	1,136
Returns reserve for acquired product	633	1,013
Danbury facility buildout	93	846
Other	4,109	4,719
Accrued expenses and other current liabilities	\$ 36,833	\$ 35,553

(1) As of June 30, 2023, accrued interest includes \$4.1 million related to a milestone payment of \$5.0 million to be paid in the third quarter of 2023.

(2) As of June 30, 2023, the current portion of milestone rights liability includes \$0.9 million to be paid in the third quarter of 2023 and \$0.8 million reclassified from long-term to short-term milestone right liability.

9. Borrowings

Carrying amount of the Company's borrowings consist of the following (in thousands):

	June 30, 2023	December 31, 2022
Senior convertible notes	\$ 226,124	\$ 225,397
MidCap credit facility	39,478	39,264
Mann Group convertible note	8,829	8,829
Total debt – net carrying amount	\$ 274,431	\$ 273,490

The following table provides a summary of the Company’s principal balance of debt and key terms:

	Amount Due		Annual Interest Rate	Terms	
	June 30, 2023	December 31, 2022		Maturity Date	Conversion Price
Senior convertible notes	\$230.0 million	\$230.0 million	2.50%	March 2026	\$5.21 per share
MidCap credit facility ⁽¹⁾	\$40.0 million	\$40.0 million	one-month SOFR (1% floor) plus 6.25%; cap of 8.25%	(1) August 2025 (1)	N/A
Mann Group convertible note	\$8.8 million	\$8.8 million	2.50%	December 2025	\$2.50 per share

(1) In August 2022, the Company amended the MidCap credit facility and transitioned the benchmark interest rate from LIBOR to the Secured Overnight Financing Rate (“SOFR”).

The maturities of the Company’s borrowings as of June 30, 2023 are as follows (in thousands):

	Amounts
2023	\$ 6,667
2024	20,000
2025	22,163
2026	230,000
Total principal payments	278,830
Unamortized discount	(521)
Debt issuance costs	(3,878)
Total debt	\$ 274,431

Senior convertible notes – In March 2021, the Company issued \$230.0 million aggregate principal amount of Senior convertible notes in a private offering. The Senior convertible notes were issued pursuant to an indenture, dated March 4, 2021 (the “Indenture”), between the Company and U.S. Bank National Association, as trustee.

The Senior convertible notes are general unsecured obligations of the Company and will mature on March 1, 2026, unless earlier converted, redeemed or repurchased. The Senior convertible notes will bear cash interest from March 4, 2021 at an annual rate of 2.50% payable semi-annually in arrears on March 1 and September 1 of each year, beginning on September 1, 2021. The Senior convertible notes are convertible at the option of the holders at any time prior to the close of business on the business day immediately preceding December 1, 2025, only under the following circumstances: (1) during any calendar quarter commencing after the calendar quarter ending on June 30, 2021 (and only during such calendar quarter), if the last reported sale price of the Company’s common stock, par value \$0.01 per share, for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price for the Senior convertible notes on each applicable trading day; (2) during the five business day period after any ten consecutive trading day period in which the trading price (as defined in the Indenture) per \$1,000 principal amount of the Senior convertible notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of the common stock and the conversion rate on each such trading day; (3) if the Company calls such Notes for redemption, at any time prior to the close of business on the scheduled trading day immediately preceding the redemption date, but only with respect to the Senior convertible notes called (or deemed called) for redemption; or (4) upon the occurrence of specified corporate events as set forth in the Indenture. On or after December 1, 2025 until the close of business on the business day immediately preceding the maturity date, holders may convert all or any portion of their Notes at any time, regardless of the foregoing circumstances. Upon conversion, the Company will pay or deliver, as the case may be, cash, shares of common stock or a combination of cash and shares of common stock, at the Company’s election, in the manner and subject to the terms and conditions provided in the Indenture.

The initial conversion rate is 191.8281 shares of common stock per \$1,000 principal amount of Notes (equivalent to an initial conversion price of approximately \$5.21 per share of common stock). The initial conversion price of the Senior convertible notes represents a premium of approximately 30% to the last reported sale price of the common stock on the Nasdaq Global Market on March 1, 2021. The conversion rate for the Senior convertible notes is subject to adjustment under certain circumstances in accordance with the terms of the Indenture, but will not be adjusted for any accrued and unpaid interest. In addition, following certain corporate events that occur prior to the maturity date of the Senior convertible notes or if the Company delivers a notice of redemption in respect of the Senior convertible notes, the Company will, in certain circumstances, increase the conversion rate of the Senior

convertible notes for a holder who elects to convert its Senior convertible notes in connection with such a corporate event or convert its Notes called for redemption during the related redemption period (as defined in the Indenture), as the case may be.

The Company may not redeem the Senior convertible notes prior to March 6, 2024. The Company may redeem for cash all or any portion of the Senior convertible notes, at its option, on or after March 6, 2024 and prior to the 36th scheduled trading day immediately preceding the maturity date, if the last reported sale price of common stock has been at least 130% of the conversion price for the Senior convertible notes then in effect for at least 20 trading days (whether or not consecutive) during any 30 consecutive trading day period (including the last trading day of such period) ending on, and including, the trading day immediately preceding the date on which the Company provides notice of redemption at a redemption price equal to 100% of the principal amount of the Senior convertible notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date. If the Company elects to redeem less than all of the outstanding Senior convertible notes, at least \$75.0 million aggregate principal amount of Senior convertible notes must be outstanding and not subject to redemption as of the relevant redemption notice date. No sinking fund is provided for the Senior convertible notes.

If the Company undergoes a fundamental change (as defined in the Indenture), then, subject to certain conditions and except as described in the Indenture, holders may require the Company to repurchase for cash all or any portion of their Notes at a fundamental change repurchase price equal to 100% of the principal amount of the Senior convertible notes to be repurchased, plus accrued and unpaid interest to, but excluding, the fundamental change repurchase date.

The Indenture includes customary covenants and sets forth certain events of default after which the Senior convertible notes may be declared immediately due and payable.

If certain bankruptcy and insolvency-related events of default involving the Company (and not just any of its significant subsidiaries) occur, 100% of the principal of and accrued and unpaid interest on the Senior convertible notes will automatically become due and payable. If an event of default with respect to the Senior convertible notes, other than certain bankruptcy and insolvency-related events of default involving the Company (and not just any of its significant subsidiaries), occurs and is continuing, the trustee, by notice to the Company, or the holders of at least 25% in principal amount of the outstanding Senior convertible notes by notice to the Company and the trustee, may, and the trustee at the request of such holders shall, declare 100% of the principal of and accrued and unpaid interest, if any, on all the Senior convertible notes to be due and payable. Notwithstanding the foregoing, the Indenture provides that, to the extent the Company so elects, the sole remedy for an event of default relating to certain failures by the Company to comply with certain reporting covenants in the Indenture will, for the first 365 days after the occurrence of such an event of default consist exclusively of the right to receive additional interest on the Senior convertible notes as set forth in the Indenture.

The Indenture provides that the Company shall not consolidate with or merge with or into, or sell, convey, transfer or lease all or substantially all of the consolidated properties and assets of the Company and its subsidiaries, taken as a whole, to, another person (other than any such sale, conveyance, transfer or lease to one or more of the Company's direct or indirect wholly owned subsidiaries), unless: (i) the resulting, surviving or transferee person (if not the Company) is a corporation organized and existing under the laws of the United States of America, any State thereof or the District of Columbia, and such corporation (if not the Company) expressly assumes by supplemental indenture all of the Company's obligations under the Senior convertible notes and the Indenture; and (ii) immediately after giving effect to such transaction, no default or event of default has occurred and is continuing under the Indenture.

The Company's net proceeds from the March 2021 offering were approximately \$222.7 million, after deducting the initial purchasers' discounts and commissions and the estimated offering expenses payable by the Company. As of June 30, 2023, the unamortized debt issuance cost was \$3.9 million.

MidCap credit facility — In August 2019, the Company entered into the MidCap credit facility and borrowed the first advance of \$40.0 million ("Tranche 1") in August 2019 and the second advance of \$10.0 million ("Tranche 2") in December 2020. In April 2021, \$10.0 million was prepaid. Under the terms of the MidCap credit facility, a third advance of \$60.0 million ("Tranche 3") became available to the Company after the Tyvaso DPI approval by the FDA through June 30, 2022 (see Note 10 – *Collaboration, Licensing and Other Arrangements*). The Company did not exercise its right to borrow Tranche 3.

The MidCap credit facility has been amended several times, including in April 2021 when the parties agreed to, among other things, (i) increase the amount available under the third advance from \$25.0 million to \$60.0 million and extend the date through which the third advance is available to June 30, 2022, (ii) amend the conditions to the third advance of \$60.0 million being available to draw, including certain milestone conditions associated with Tyvaso DPI, (iii) remove the Company's obligation to issue a warrant to purchase shares of the Company's common stock upon drawing down the third advance, (iv) extend the interest-only period until September 1, 2023 and extend the maturity date until August 1, 2025, (v) amend the financial covenant relating to trailing 12 month minimum Afrezza net revenue, (vi) decrease the minimum cash covenant, (vii) decrease the interest rate on any amounts outstanding, now or in the future, under the MidCap credit facility, (viii) permit the Company to make certain acquisitions, subject to requirements, and (ix) permit the Company to make investments of up to an additional \$9.0 million so long as the Company has \$90.0 million or more of unrestricted cash and short-term investments following such investment. Concurrent with entering into this amendment, the

Company made a \$10.0 million principal prepayment against outstanding term loans under the MidCap credit facility and paid a related \$1.0 million exit fee in lieu of the unaccrued portion of the original exit fee and prepayment penalties that would otherwise have been due with respect to the partial prepayment.

The prepayment penalty of \$1.0 million related to the payment of \$10.0 million was capitalized and will be amortized over the remaining life of the debt. As of June 30, 2023, the unamortized debt discount was \$0.2 million and the unamortized prepayment penalty was \$0.4 million.

In August 2022, the Company entered into the tenth amendment to the MidCap credit facility to change the benchmark interest rate from LIBOR to the Secured Overnight Financing Rate (“SOFR”).

Tranche 1 and Tranche 2 accrue interest at an annual rate equal to the lesser of (i) 8.25% and (ii) the one-month SOFR (subject to a one-month SOFR floor of 1.00%) plus 6.25%. Interest on each term loan advance is due and payable monthly in arrears. Principal on each term loan advance under Tranche 1 and Tranche 2 are payable in 24 equal monthly installments beginning September 1, 2023, until paid in full on August 1, 2025. The Company has the option to prepay its existing term loans, in whole or in part, subject to early termination fees in an amount equal to 1.00% of principal prepaid.

The Company’s obligations under the MidCap credit facility are secured by a security interest on substantially all of its assets, including intellectual property.

The MidCap credit facility, as amended, contains customary affirmative covenants and customary negative covenants limiting the Company’s ability and the ability of the Company’s subsidiaries to, among other things, dispose of assets, undergo a change in control, merge or consolidate, make acquisitions, incur debt, incur liens, pay dividends, repurchase stock and make investments, in each case subject to certain exceptions. The Company must also comply with a financial covenant relating to trailing twelve month minimum Afrezza net revenue, tested on a monthly basis, unless the Company has \$90.0 million or more of unrestricted cash and short-term investments. As of June 30, 2023, the Company was in compliance with the financial covenant.

The MidCap credit facility also contains customary events of default relating to, among other things, payment defaults, breaches of covenants, a material adverse change, listing of the Company’s common stock, bankruptcy and insolvency, cross defaults with certain material indebtedness and certain material contracts, judgments, and inaccuracies of representations and warranties. Upon an event of default, the agent and the lenders may declare all or a portion of the Company’s outstanding obligations to be immediately due and payable and exercise other rights and remedies provided for under the MidCap credit facility. During the existence of an event of default, interest on the term loans could be increased by 2.00%.

Mann Group convertible note — In August 2019, the Company issued a \$35.0 million note that is convertible into shares of the Company’s common stock at \$2.50 per share (the “Mann Group convertible note”) as part of a restructuring of its then existing indebtedness to Mann Group.

The Mann Group convertible note originally accrued interest at the rate of 7.00% per year on the principal amount, payable quarterly in arrears on the first day of each calendar quarter beginning October 1, 2019. In April 2021, the Company and Mann Group amended the Mann Group convertible note, pursuant to which the parties agreed to (i) reduce the interest rate from 7.0% to 2.5% effective on April 22, 2021, and (ii) extend the maturity date from November 3, 2024 to December 31, 2025.

The principal and any accrued and unpaid interest under the Mann Group convertible note may be converted, at the option of Mann Group, at any time on or prior to the close of business on the business day immediately preceding the stated maturity date, into shares of the Company’s common stock at a conversion rate of 400 shares per \$1,000 of principal and/or accrued and unpaid interest, which is equal to a conversion price of \$2.50 per share. The conversion rate will be subject to adjustment under certain circumstances described in the Mann Group convertible note. Interest on the convertible note will be payable in kind by adding the amount thereof to the principal amount; provided that with respect to interest accruing from and after January 1, 2021, the Company may, at its option, elect to pay any such interest on any interest payment date, if certain conditions are met, in shares of the Company’s common stock at a price per share equal to the last reported sale price on the trading day immediately prior to the payment date.

During the six months ended June 30, 2023, the Company paid interest on the Mann Group convertible note by issuing 23,683 shares of common stock. During the six months ended June 30, 2022, Mann Group converted \$10.0 million of principal and capitalized interest into 4,000,000 shares of common stock. In addition, the Company paid quarterly interest by issuing the Mann Group 31,541 shares of common stock.

Amortization of the premium and accretion of debt issuance costs related to all borrowings were as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Amortization of debt discount	\$ 108	\$ 106	\$ 214	\$ 212
Amortization of debt issuance cost	363	363	727	726

Milestone Rights — As of June 30, 2023 and December 31, 2022, the remaining Milestone Rights liability balance was \$4.8 million, which was based on initial fair value estimates calculated using the income approach and reduced by milestone achievement payments made. As of June 30, 2023 and December 31, 2022, the Milestone Rights liability consisted of \$1.7 million of current liability which was presented as accrued expenses and other current liabilities, and \$3.2 million of long-term liability which was presented as milestone liabilities in our condensed consolidated balance sheets.

The Milestone Rights Agreement includes customary representations and warranties and covenants by the Company, including restrictions on transfers of intellectual property related to Afrezza. The Milestone Rights are subject to acceleration in the event the Company transfers its intellectual property related to Afrezza in violation of the terms of such agreement.

10. Collaboration, Licensing and Other Arrangements

Revenue from collaborations and services were as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
UT CSA Agreement ⁽¹⁾	\$ 10,933	\$ 4,695	\$ 22,097	\$ 5,879
UT License Agreement ⁽²⁾	242	698	427	1,556
Cipla License and Distribution Agreement	36	36	73	73
Vertice Pharma Co-Promotion Agreement	—	325	—	325
Other	—	114	—	201
Total revenue from collaborations and services	\$ 11,211	\$ 5,868	\$ 22,597	\$ 8,034

(1) Amount consists of revenue recognized for Manufacturing Services and sales of product to UT for the periods presented.

(2) Amounts consist of revenue recognized for Next-Gen R&D Services and R&D Services and License for the periods presented.

United Therapeutics License Agreement — In September 2018, the Company and UT entered into an exclusive global license and collaboration agreement (the “UT License Agreement”), pursuant to which UT is responsible for global development, regulatory and commercial activities with respect to Tyvaso DPI. The Company is responsible for manufacturing Tyvaso DPI.

Total revenue from UT was as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
UT Revenue				
UT CSA Agreement	\$ 10,933	\$ 4,695	\$ 22,097	\$ 5,879
UT License Agreement	242	698	427	1,556
Royalties — Collaborations ⁽¹⁾	19,055	304	30,733	304
Total revenue from UT	\$ 30,230	\$ 5,697	\$ 53,257	\$ 7,739

(1) Amount consists of royalties associated with the UT License Agreement. The contract assets related to the royalties is included in prepaid expense and other current assets in the condensed consolidated balance sheets.

In October 2018, the Company and UT entered into the UT License Agreement for the collaboration and development of Tyvaso DPI. Pursuant to this agreement, the Company also receives low double-digit royalties on net sales of Tyvaso DPI as well as a manufacturing margin on commercial supplies of the product. In August 2021, the Company and UT entered into the CSA, pursuant to which the Company is responsible for manufacturing and supplying to UT, and UT is responsible for purchasing from the Company on a cost-plus basis. There have been various amendments to the UT License Agreement and the CSA since inception. The terms of the amendments and related accounting treatment are disclosed in the Company's Form 10-K for the fiscal year ended December 31, 2022, filed with the SEC on February 23, 2023.

In December 2022, the Company and UT agreed to fund an additional \$39.5 million to support capital and continuous improvement activities and \$2.3 million in the development of alternative manufacturing processes. The Company determined that the capital and continuous improvements should be combined with the manufacturing services performance obligation and the alternative manufacturing processes should be combined with the Next-Gen R&D Services. The total revised anticipated cash flows of \$722.3 million from the transaction was allocated to the three distinct performance obligations as follows (dollars in millions):

	Anticipated		Recognition Method	Progress Measure	Revenue Recognition
	Cash Flow	Revenue Allocation			
Total anticipated cash flow⁽¹⁾	\$ 722.3				
Distinct Performance Obligation					
R&D Services and License		\$ —	Over time	Ratably	Aug 2021 - Oct 2021
Next-Gen R&D Services		\$ 10.0	Over time	Input	% of completion of costs
Manufacturing Services and Product Sales ⁽²⁾		\$ 712.3	Point in time		Transfer of control

(1) The total anticipated cash flow includes a transaction price of \$120.0 million for the contractual obligations under the CSA for the Manufacturing Services and the Next-Gen R&D Services performance obligations and \$602.3 million for future supply of Tyvaso DPI over the remaining term of the CSA.

(2) The Manufacturing Services performance obligation will be recognized as control of manufactured products is transferred to UT. The modification did not result in a cumulative catch-up adjustment as a result of the revenue being deferred for the performance obligations that were affected by the modification. The allocation of the transaction price for the Manufacturing Services includes a material right related to the Company's estimated production of product in the amount of \$220.8 million. The Company will sell product to UT under individual purchase orders, which represent distinct performance obligations. The ultimate cash flows may vary as manufacturing purchase orders are received.

As of June 30, 2023, deferred revenue consisted of \$62.3 million, of which \$3.3 million was classified as current and \$59.0 million was classified as long-term on the condensed consolidated balance sheet. As of December 31, 2022, deferred revenue consisted of \$37.9 million, of which \$1.6 million was classified as current and \$36.3 million was classified as long-term on the condensed consolidated balance sheet.

Thirona Collaboration Agreement — In June 2021, the Company and Thirona entered into a collaboration agreement to evaluate the therapeutic potential of Thirona's compound for the treatment of pulmonary fibrosis. If initial studies are promising, the Company can exercise certain rights to seek a full license to the compound for clinical development and commercialization. The parties will perform their respective obligations and provide reasonable support for research, clinical development and regulatory strategy. The collaboration agreement was accounted for under ASC 808, Collaborative Agreements; however, no consideration was exchanged between the parties. The costs incurred by the Company were expensed as R&D in the condensed consolidated statements of operations. On February 28, 2023, the collaboration agreement was amended to extend the term through June 2024. In accordance with the amendment, the Company will fund a minimum of \$1.1 million to be expended on a revised development plan prepared by Thirona.

Biommm Supply and Distribution Agreement — In May 2017, the Company and Biommm S.A. ("Biommm") entered into a supply and distribution agreement for the commercialization of Afrezza in Brazil. Under this agreement, Biommm was responsible for pursuing regulatory approvals of Afrezza in Brazil, including from the Agência Nacional de Vigilância Sanitária ("ANVISA") and, with respect to pricing matters, from the Camara de Regulação de Mercado de Medicamentos ("CMED"), both of which were received. Biommm commenced product sales in January 2020. There were no shipments of product to Biommm in 2022 or the first six months of 2023.

Cipla License and Distribution Agreement — In May 2018, the Company and Cipla Ltd. ("Cipla") entered into an exclusive agreement for the marketing and distribution of Afrezza in India and the Company received a \$2.2 million nonrefundable license fee. Under the terms of the agreement, Cipla is responsible for obtaining regulatory approvals to distribute Afrezza in India and for all marketing and sales activities of Afrezza in India. The Company is responsible for supplying Afrezza to Cipla. The Company has the potential to receive an additional regulatory milestone payment, minimum purchase commitment revenue and royalties on Afrezza sales in India once cumulative gross sales have reached a specified threshold.

The nonrefundable licensing fee was recorded in deferred revenue and is being recognized in net revenue – collaborations over 15 years, representing the estimated period to satisfy the performance obligation. The additional milestone payments represent variable consideration for which the Company has not recognized any revenue because of the uncertainty of obtaining marketing approval. As of June 30, 2023, the deferred revenue balance was \$1.4 million, of which \$0.1 million is classified as current and \$1.3 million is classified as long term in the condensed consolidated balance sheets.

11. Fair Value of Financial Instruments

The availability of observable inputs can vary among the various types of financial assets and liabilities. To the extent that the valuation is based on models or inputs that are less observable or unobservable in the market, the determination of fair value requires more judgment. In certain cases, the inputs used to measure fair value may fall into different levels of the fair value hierarchy. In such cases, for financial statement disclosure purposes, the level in the fair value hierarchy within which the fair value measurement is categorized is based on the lowest level input that is significant to the overall fair value measurement. The Company uses the exit price method for estimating the fair value of loans for disclosure purposes. Inputs used in the valuation techniques to derive fair values are classified based on a three-level hierarchy, as follows:

Level 1 — Quoted prices for identical instruments in active markets.

Level 2 — Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations whose inputs are observable or whose significant value drivers are observable.

Level 3 — Significant inputs to the valuation model are unobservable.

The carrying amounts reported in the condensed consolidated financial statements for cash, accounts receivable, accounts payable, and accrued expenses and other current liabilities (excluding the Milestone Rights liability) approximate their fair value due to their relatively short maturities. The fair value of the Senior convertible notes, MidCap credit facility, Mann Group convertible note, Milestone Rights liability and Financing liability are disclosed below.

Financial Liabilities — The following tables set forth the fair value of the Company's financial instruments (in thousands):

	June 30, 2023	
	Carrying Amount	Fair Value Significant Unobservable Inputs (Level 3)
Financial liabilities:		
Senior convertible notes ⁽¹⁾	\$ 226,124	\$ 241,904
MidCap credit facility ⁽²⁾	39,478	41,721
Mann Group convertible note ⁽³⁾	8,829	16,316
Milestone rights ⁽⁴⁾	4,838	11,800
Contingent milestone liability ⁽⁴⁾	610	610
Financing liability ⁽⁵⁾	104,081	103,229

- (1) Fair value was determined by applying a discounted cash flow analysis to the straight note with a hypothetical yield of 11%, volatility of 72.9% and a Monte Carlo simulation for the value of the conversion feature. A change in yield of + or – 2% would result in a fair value of \$233.4 million and \$250.9 million, respectively.
- (2) Fair value was determined by applying a discounted cash flow analysis with a hypothetical yield of 12%. A change in yield of + or – 2% would result in a fair value of \$40.9 million and \$42.6 million, respectively.
- (3) The fair value was determined by applying a discounted cash flow analysis with a hypothetical yield of 13% and volatility of 72.3% to the straight note and a binomial option pricing model for the value of the conversion feature. A change in yield of + or – 2% would result in a fair value of \$16.0 million and \$16.6 million, respectively.
- (4) Fair value was determined by applying a Monte Carlo simulation.
- (5) Fair value was determined by applying a discounted cash flow analysis with a hypothetical yield of 10%.

	December 31, 2022	
	Carrying Value	Fair Value Significant Unobservable Inputs (Level 3)
Financial liabilities:		
Senior convertible notes ⁽¹⁾	\$ 225,397	\$ 253,864
MidCap credit facility ⁽²⁾	39,264	41,070
Mann Group convertible note ⁽³⁾	8,829	20,836
Milestone rights ⁽⁴⁾	4,838	12,600
Contingent milestone liability ⁽⁴⁾	610	960
Financing liability ⁽⁵⁾	104,077	103,239

- (1) Fair value was determined by applying a discounted cash flow analysis to the straight note with a hypothetical yield of 13%, volatility of 75.8% and a Monte Carlo simulation for the value of the conversion feature. A change in yield of + or – 2% would result in a fair value of \$245.0 million and \$263.4 million, respectively.

- (2) Fair value was determined by applying a discounted cash flow analysis with a hypothetical yield of 12%. A change in yield of + or – 2% would result in a fair value of \$40.0 million and \$42.4 million, respectively.
- (3) Fair value was determined by applying a discounted cash flow analysis with a hypothetical yield of 13% and volatility of 77.8% to the straight note and a binomial option pricing model for the value of the conversion feature. A change in yield of + or – 2% would result in a fair value of \$20.5 million and \$21.2 million, respectively.
- (4) Fair value was determined by applying a Monte Carlo simulation.
- (5) Fair value was determined by applying a discounted cash flow analysis with a hypothetical yield of 10%.

Milestone Rights Liability — The fair value measurement of the Milestone Rights liability is sensitive to the discount rate and the timing of achievement of milestones. The Company utilized Monte-Carlo Simulation Method to simulate the Afrezza net sales under a neutral framework to estimate the payment. The Company then discounted the future expected payments at cost of debt with a term equal to the simulated time to payout based on cumulative sales. See Note 9 – *Borrowings*.

Contingent milestone liability — The acquisition of V-Go in May 2022 resulted in a contingent milestone liability which could result in obligations to the seller if certain revenue thresholds are met. The initial fair value of the contingent milestone liability was recorded as an adjustment to the purchase price. Subsequent changes in the fair value are reported in general and administrative expenses. See Note 2 – *Acquisition*.

Financing Liability — The Sale-Leaseback Transaction in November 2021 resulted in a financing liability. See Note 15 – *Commitments and Contingencies*.

12. Common and Preferred Stock

In May 2023, the Company's stockholders, upon recommendation of the Company's board of directors approved an amendment to our Amended and Restated Certificate of Incorporation to increase the authorized number of shares of common stock from 400,000,000 shares to 800,000,000 shares.

The Company is authorized to issue 800,000,000 shares of common stock, par value \$0.01 per share, and 10,000,000 shares of undesignated preferred stock, par value \$0.01 per share, issuable in one or more series as designated by the Company's board of directors. No other class of capital stock is authorized. As of June 30, 2023 and December 31, 2022, 268,235,145 and 263,793,305 shares of common stock, respectively, were issued and outstanding and no shares of preferred stock were outstanding.

In February 2018, the Company entered into a controlled equity offering sales agreement (the "CF Sales Agreement") with Cantor Fitzgerald & Co. ("Cantor Fitzgerald"), as sales agent, pursuant to which the Company may offer and sell, from time to time, through Cantor Fitzgerald, shares of the Company's common stock having an aggregate offering price of up to \$50.0 million or such other amount as may be permitted by the Sales Agreement. Under the Sales Agreement, Cantor Fitzgerald may sell shares by any method deemed to be an "at-the-market offering" as defined in Rule 415 under the Securities Act of 1933, as amended. For the six months ended June 30, 2023, the Company sold 631,383 shares of common stock at a weighted average purchase price of \$4.40 per share for gross proceeds of approximately \$2.8 million pursuant to the CF Sales Agreement. There were no sales under the CF Sales Agreement for the six months ended June 30, 2022.

During the six months ended June 30, 2023, the Company paid interest on the Mann Group convertible note by issuing 23,683 shares of common stock. During the six months ended June 30, 2022, Mann Group converted \$10.0 million of principal and capitalized interest into 4,000,000 shares of common stock. In addition, the Company paid quarterly interest by issuing the Mann Group 31,541 shares of common stock.

For the six months ended June 30, 2023, the Company received \$0.2 million from the market price stock purchase plan ("MPSPP") for 36,004 shares. For the six months ended June 30, 2022, the Company received \$0.7 million from the MPSPP for 252,176 shares.

For shares of common stock issued pursuant to the Company's 2004 employee stock purchase plan ("ESPP"), see Note 14 – *Stock-Based Compensation Expense*.

13. Earnings per Common Share ("EPS")

Basic EPS excludes dilution for potentially dilutive securities and is computed by dividing net income (loss) by the weighted average number of common shares outstanding during the period. Diluted EPS reflects the potential dilution under the treasury method that could occur if securities or other contracts to issue common stock were exercised or converted into common stock. For periods where the Company has presented a net loss, potentially dilutive securities are excluded from the computation of diluted EPS as they would be antidilutive.

The following tables summarize the components of the basic and diluted EPS computations (in thousands, except per share amounts):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
EPS — basic and diluted:				
Net loss (numerator)	\$ (5,265)	\$ (29,023)	\$ (15,060)	\$ (55,021)
Weighted average common shares (denominator)	265,626	253,644	264,802	252,775
Net loss per share	\$ (0.02)	\$ (0.11)	\$ (0.06)	\$ (0.22)

Common shares issuable represents incremental shares of common stock which consist of RSUs, options, warrants, and shares that could be issued upon conversion of the Senior convertible notes and the Mann Group convertible notes.

Potentially dilutive securities outstanding that are considered antidilutive are summarized as follows (in shares):

	Six Months Ended June 30,	
	2023	2022
Senior convertible notes	44,120,463	44,120,463
RSUs and Market RSUs ⁽¹⁾	16,951,734	15,848,183
Common stock options and PNQs	8,688,625	9,766,028
Mann Group convertible notes	3,370,000	3,370,000
Employee stock purchase plan	—	235,794
Total shares	73,130,822	73,340,468

(1) Market RSUs issued in 2021, 2022, and 2023 are included at the share delivery of 0%, 162%, and 100%, respectively, in accordance with a valuation assessment obtained as of June 30, 2023.

14. Stock-Based Compensation Expense

In May 2023, the Company's stockholders, upon recommendation of the Company's board of directors, approved an amendment to the Company's 2018 Equity Incentive Plan (the "2018 Plan") to increase the number of shares of common stock that may be issued under the 2018 Plan by 25,000,000 shares.

During the six months ended June 30, 2023, the Company granted the following awards (in shares):

	Three Months Ended March 31,	Three Months Ended June 30,	Six Months Ended June 30,
	2023	2023	2023
Employee awards:			
RSUs	179,905 ⁽¹⁾	2,660,721 ⁽²⁾	2,840,626
Market RSUs	—	1,445,000 ⁽³⁾	1,445,000
Non-employee director RSUs	—	319,904 ⁽⁴⁾	319,904
Total awards issued	179,905	4,425,625	4,605,530

(1) RSUs had a weighted average grant date fair value of \$4.16 per share, of which 91,900 RSUs had a cliff vesting period of three years, 42,000 RSUs had a cliff vesting period of two years, and 46,005 RSUs had a vesting period of 25% annually over four years.

(2) RSUs had a weighted average grant date fair value of \$4.56 per share, of which 2,598,971 RSUs had a vesting period of 25% annually over four years, and 61,750 RSUs had a cliff vesting period of 3 years.

(3) Market RSUs had a grant date fair value of \$9.40 per share and will vest on July 15, 2026 provided the closing price of the Company's common stock on June 30, 2026 is not less than the closing price on July 1, 2023. The number of shares delivered on the vesting date is determined by the percentile ranking of MannKind total shareholder return (TSR) over the period from July 1, 2023 until July 30, 2026 relative to the TSR of the Russell 3000 Pharmaceutical & Biotechnology Index over the same three-year period, as follows: less than 25th percentile=0% of target, 25th percentile=50% of target, 50th percentile=100% of target, 75th percentile=200% of target, 90th percentile or higher=300% maximum. Payout values will be interpolated between the percentile rankings above.

(4) RSUs had a weighted average grant date fair value of \$4.55 per share and vested immediately upon the grant date; however, the underlying shares of common stock will not be delivered until there is a separation of service such as resignation, retirement or death.

As of June 30, 2023, unrecognized stock-based compensation expense was \$0.2 million related to options and PNQs which is expected to be recognized over a weighted average period of 2.93 years as well as \$24.0 million and \$20.9 million related to RSUs

and Market RSUs, respectively, which is expected to be recognized over weighted average periods of approximately 2.73 and 2.07 years, respectively.

Total stock-based compensation expense recognized in the condensed consolidated statements of operations as cost of goods sold, cost of revenue – collaborations and services, R&D, selling and general and administrative expense was as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
RSUs and options	\$ 5,404	\$ 4,239	\$ 8,882	\$ 6,883
Employee stock purchase plan	176	183	353	345
Total	\$ 5,580	\$ 4,422	\$ 9,235	\$ 7,228

Employee Stock Purchase Plan

The Company provides all employees, including executive officers, the ability to purchase common stock at a discount under the Company’s 2004 the ESPP. The ESPP is designed to comply with Section 423 of the Internal Revenue Code and provides all employees with the opportunity to purchase up to \$25,000 worth of common stock (based on the undiscounted fair market value at the commencement of the offering period) each year at a purchase price that is the lower of 85% of the fair market value of the common stock on either the date of purchase or the commencement of the offering period. An employee may not purchase more than 5,000 shares of common stock on any purchase date. The executives’ rights under the ESPP are the same as those of all other employees.

In May 2023, the Company’s stockholders, upon recommendation of the Company’s board of directors, approved an amendment to the Company’s ESPP to increase the number of shares of common stock authorized for issuance under the ESPP by an additional 3,000,000 shares.

There were approximately 3.1 million shares of common stock available for issuance under the ESPP as of June 30, 2023.

15. Commitments and Contingencies

Guarantees and Indemnifications — In the ordinary course of its business, the Company makes certain indemnities, commitments and guarantees under which it may be required to make payments in relation to certain transactions. The Company, as permitted under Delaware law and in accordance with its Bylaws, indemnifies its officers and directors for certain events or occurrences, subject to certain limits, while the officer or director is or was serving at the Company’s request in such capacity. The term of the indemnification period is for the officer’s or director’s lifetime. The maximum amount of potential future indemnification is unlimited; however, the Company has a director and officer insurance policy that may enable it to recover a portion of any future amounts paid. The Company believes the fair value of these indemnification agreements is minimal and therefore has not recorded any liability for these indemnities in the condensed consolidated balance sheets. The Company accrues for losses for any known contingent liability, including those that may arise from indemnification provisions, when future payment is probable and the amount can be reasonably estimated. No such losses have been recorded to date.

Litigation — The Company is subject to legal proceedings and claims which arise in the ordinary course of its business. As of June 30, 2023, the Company believes that the final disposition of such matters will not have a material adverse effect on the results of operations, financial position, or cash flows of the Company and no accrual has been recorded. The Company maintains liability insurance coverage to protect the Company’s assets from losses arising out of or involving activities associated with ongoing and normal business operations. The Company records a provision for a liability when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. The Company’s policy is to accrue for legal expenses in connection with legal proceedings and claims as they are incurred.

Contingencies — In July 2013, the Company entered into the Milestone Rights Agreement with the Original Milestone Purchasers, pursuant to which the Company granted the Milestone Rights to receive payments up to \$90.0 million upon the occurrence of specified strategic and sales milestones, \$60.0 million of which remains payable to the Milestone Purchasers upon achievement of such milestones (see Note 9 – *Borrowings*).

Sale-Leaseback Transaction— In November 2021, the Company sold the Property to the Purchaser for a sales price of \$102.3 million, subject to terms and the conditions contained in a purchase and sale agreement.

Effective with the closing of the Sale-Leaseback Transaction, the Company and the Purchaser entered into a lease agreement (the “Lease”), pursuant to which the Company leased the Property from the Purchaser for an initial term of 20 years, with four renewal options of five years each. The total annual rent under the Lease starts at approximately \$9.5 million per year, subject to a 50% rent

abatement during the first year of the Lease, and will increase annually by (i) 2.5% in the second through fifth year of the Lease and (ii) 3% in the sixth and each subsequent year of the Lease, including any renewal term. The Company is responsible for payment of operating expenses, property taxes and insurance for the Property. The Purchaser will hold a security deposit of \$2.0 million during the Lease term. Pursuant to the terms of the Lease, the Company has four options to repurchase the Property, in 2026, 2031, 2036 and 2041, for the greater of (i) \$102.3 million and (ii) the fair market value of the Property.

Effective with the closing of the Sale-Leaseback Transaction, the Company and the Purchaser also entered into a right of first refusal agreement (the "ROFR"), pursuant to which the Company has a right to re-purchase the Property from the Purchaser in accordance with terms and conditions set forth in the ROFR. Specifically, if the Purchaser receives, and is willing to accept, a bona fide purchase offer for the Property from a third-party purchaser, the Company has certain rights of first refusal to purchase the Property on the same material terms as proposed in such bona fide purchase offer.

As of June 30, 2023, the related financing liability was \$104.1 million, which was recognized in the condensed consolidated balance sheet and of which \$94.4 million was long-term and \$9.7 million was current. As of December 31, 2022, the related financing liability was \$104.1 million, of which \$94.5 million was long-term and \$9.6 million was current.

Financing liability information was as follows:

	<u>June 30, 2023</u>	<u>December 31, 2022</u>
Weighted average remaining lease term (in years)	18.3	18.8
Weighted average discount rate	9.0 %	9.0 %

	<u>Three Months Ended June 30,</u>		<u>Six Months Ended June 30,</u>	
	<u>2023</u>	<u>2022</u>	<u>2023</u>	<u>2022</u>
Interest expense on financing liability	\$ 2,449	\$ 2,443	\$ 4,873	\$ 4,814

The Company's remaining financing liability payments were as follows (in thousands):

	<u>June 30, 2023</u>
2023	\$ 4,906
2024	10,018
2025	10,269
2026	10,533
2027	10,849
Thereafter	188,453
Total	<u>235,028</u>
Interest payments	(128,166)
Debt issuance costs	(2,781)
Total financing liability	<u>\$ 104,081</u>

Commitments — In July 2014, the Company entered into the Insulin Supply Agreement with Amphastar pursuant to which Amphastar manufactures for and supplies to the Company certain quantities of recombinant human insulin for use in Afrezza. Under the terms of the Insulin Supply Agreement, Amphastar is responsible for manufacturing the insulin in accordance with the Company's specifications and agreed-upon quality standards.

In May 2021, the Company and Amphastar amended the Insulin Supply Agreement to extend the term and restructure the annual purchase commitments. The Company's remaining purchase commitments were as follows (€ in millions):

	<u>June 30, 2023</u>
2023	4.8
2024	14.6
2025	15.5
2026	19.4
2027	9.2

Pursuant to the amendment, the term of the Insulin Supply Agreement expires on December 31, 2027, unless terminated earlier, and can be renewed for additional, successive two-year terms upon 12 months' written notice given prior to the end of the initial term or any additional two-year term. The Company and Amphastar each have normal and customary termination rights, including

termination for a material breach that is not cured within a specific time frame or in the event of liquidation, bankruptcy or insolvency of the other party. In addition, the Company may terminate the Insulin Supply Agreement upon two years' prior written notice to Amphastar without cause or upon 30 days' prior written notice to Amphastar if a controlling regulatory authority withdraws approval for Afrezza, provided, however, in the event of a termination pursuant to either of the latter two scenarios, the provisions of the Insulin Supply Agreement require the Company to pay the full amount of all unpaid purchase commitments due over the initial term within 60 calendar days of the effective date of such termination.

Vehicle Leases — During the second quarter of 2018, the Company entered into a master lease agreement with Enterprise Fleet Management Inc. The monthly payment inclusive of maintenance fees, insurance and taxes is approximately \$0.1 million. The lease expense is included in selling expenses in the condensed consolidated statements of operations.

Office Leases — In May 2017, the Company executed an office lease with Russell Ranch Road II LLC for the Company's corporate offices in Westlake Village, California, which was renewed in April 2022. Pursuant to the renewal, the monthly payments of \$79,543 began in February 2023, subject to 3% annual increases, plus the estimated cost of maintaining the property and common areas by the landlord, and further subject to a six-month base rent concession beginning February 2023. The Company is also entitled to a one-time allowance up to \$0.9 million as reimbursement for tenant improvements or the purchase of furniture, fixtures or equipment. Of the \$0.9 million allowance, an amount up to \$0.7 million may be applied as an additional base rent concession. The Company has no further right to extend the lease term beyond July 31, 2028.

In May 2022, the Company assumed certain leased real property (the "Marlborough Lease") in connection with the V-Go acquisition. The Marlborough Lease pertains to certain premises in a building located in Marlborough, Massachusetts. The monthly payments of \$28,895 began in June 2022, subject to approximately 3% annual increases through February 28, 2026.

The Company also acquired rights to a manufacturing service agreement where V-Go is manufactured using Company-owned equipment located at the manufacturing facility. The Company determined that this arrangement results in an embedded lease which granted the Company exclusive use of space within the manufacturing facility. The Company assessed the embedded lease cost to be \$14,370 per month through February 28, 2026.

Lease information was as follows (in thousands):

	June 30, 2023	December 31, 2022
Operating lease right-of-use assets ⁽¹⁾	\$ 5,329	\$ 6,714
Operating lease liability-current ⁽²⁾	\$ 944	\$ 1,304
Operating lease liability-long-term	4,646	5,343
Total	\$ 5,590	\$ 6,647
Weighted average remaining lease term (in years)	4.1	4.6
Weighted average discount rate	7.3 %	7.3 %

(1) Operating right-of-use assets related to vehicles, offices and the manufacturing facility are included in other assets in the condensed consolidated balance sheets.

(2) Operating lease liability – current are included in accrued expenses and other current liabilities in the condensed consolidated balance sheets.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Operating lease costs	\$ 410	\$ 341	\$ 831	629
Variable lease costs	13	73	49	159
Cash paid	234	446	557	887

The Company's future minimum office and vehicle lease payments were as follows (in thousands):

	June 30, 2023	
2023	\$	441
2024		1,496
2025		1,861
2026		1,140
2027		1,072
Thereafter		643
Total		6,653
Interest expense		(1,063)
Total operating lease liability	\$	5,590

16. Income Taxes

Management of the Company has evaluated the positive and negative evidence bearing upon the realizability of its deferred tax assets and concluded, in accordance with the applicable accounting standards, that net deferred tax assets should be fully reserved.

The Company has assessed its position with regards to uncertainty in tax positions and has not recognized a liability for unrecognized tax benefits. The Company does not expect its unrecognized tax benefits to change significantly over the next 12 months. The Company recognizes interest and penalties accrued related to unrecognized tax benefits in income tax expense. During the six months ended June 30, 2023, the Company did not recognize any interest or penalties. The Company's tax years since 2018 remain subject to examination by tax authorities.

ITEM 2. MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Statements in this report that are not strictly historical in nature are “forward-looking statements” within the meaning of the federal securities laws made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. In some cases, you can identify forward-looking statements by terms such as “anticipate,” “believe,” “could,” “estimate,” “expect,” “goal,” “intend,” “may,” “plan,” “potential,” “predict,” “project,” “should,” “will,” “would,” and similar expressions intended to identify forward-looking statements, though not all forward-looking statements contain these identifying words. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth below in Part II, Item 1A Risk Factors and elsewhere in this Quarterly Report on Form 10-Q. The preceding interim condensed consolidated financial statements and this Management’s Discussion and Analysis of Financial Condition and Results of Operations should be read in conjunction with the financial statements and related notes for the year ended December 31, 2022 and Management’s Discussion and Analysis of Financial Condition and Results of Operations contained in the Annual Report. Readers are cautioned not to place undue reliance on forward-looking statements. The forward-looking statements speak only as of the date on which they are made, and we undertake no obligation to update such statements to reflect events that occur or circumstances that exist after the date on which they are made.

OVERVIEW

We are a biopharmaceutical company focused on the development and commercialization of innovative therapeutic products and devices to address serious unmet medical needs for those living with endocrine and orphan lung diseases. Our signature technologies—Technosphere dry-powder formulations and Dreamboat inhalation devices—offer rapid and convenient delivery of medicines to the deep lung where they can exert an effect locally or enter the systemic circulation. In our endocrine business unit, we currently commercialize two products: Afrezza (insulin human) Inhalation Powder, an ultra rapid-acting inhaled insulin indicated to improve glycemic control in adults with diabetes, and the V-Go wearable insulin delivery device, which provides continuous subcutaneous infusion of insulin in adults that require insulin. The first product to come out of our orphan lung disease pipeline, Tyvaso DPI (treprostinil) inhalation powder, received FDA approval in May 2022 for the treatment of PAH and PH-ILD. Our development and marketing partner, United Therapeutics, began commercializing Tyvaso DPI in June 2022 and is obligated to pay us a royalty on net sales of the product. We also receive a margin on supplies of Tyvaso DPI that we manufacture for UT.

Our business is subject to significant risks, including but not limited to our ability to manufacture sufficient quantities of our products and Tyvaso DPI. Other significant risks also include the risk that our products may only achieve a limited degree of commercial success and the risks inherent in drug development, clinical trials and the regulatory approval process for our product candidates, which in some cases depends upon the efforts of our partners.

As of June 30, 2023, we had an accumulated deficit of \$3.2 billion and a stockholders’ deficit of \$260.5 million. We had a net loss of \$5.3 million and \$15.1 million for the three and six months ended June 30, 2023, respectively. To date, we have funded our operations primarily through the sale of our equity and convertible debt securities, from the receipt of upfront and milestone payments from collaborations, from borrowings, from sales of Afrezza and V-Go, from royalties and manufacturing revenue from UT as well as from proceeds of the sale-leaseback of our manufacturing facility in Danbury, CT.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

Our critical accounting policies and estimates can be found in Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations in our Annual Report. See Note 1 – *Description of Business and Significant Accounting Policies* in the condensed consolidated financial statements included in Part I – Financial Statements (Unaudited) for descriptions of the new accounting policies and impact of adoption.

RESULTS OF OPERATIONS

Trends and Uncertainties

Our collaborative agreement with UT entitles us to receive low double-digit royalties on net sales of Tyvaso DPI. Our royalty revenue continues to increase, which reflects the upward trend in demand for Tyvaso DPI in the marketplace.

We continue to maintain an elevated level of safety stock of certain raw materials due to concerns that supply chain interruptions may interfere with the manufacture of Afrezza, V-Go and Tyvaso DPI.

Manufacturing risks may adversely affect our ability to manufacture our products and could reduce our gross margin or impact our collaboration with UT.

Our future success is dependent on our, and our current and future collaboration partners', ability to effectively commercialize approved products. Our future success is also dependent on our pipeline of new products. There is a high rate of failure inherent in the R&D process for new drugs. As a result, there is a high risk that the funds we invest in research programs will not generate sufficient financial returns. Products may appear promising in development but fail to reach market within the expected or optimal timeframe, or at all.

Three and six months ended June 30, 2023 and 2022

Revenues

The following table provides a comparison of the revenue categories for the three and six months ended June 30, 2023 and 2022 (dollars in thousands):

	Three Months Ended June 30,			
	2023	2022	\$ Change	% Change
Net revenue – commercial product sales:				
Gross revenue from product sales	\$ 33,211	\$ 21,384	\$ 11,827	55 %
Less: Wholesaler distribution fees, rebates and chargebacks, product returns and other discounts	14,866	8,662	\$ 6,204	72 %
Net revenue – commercial product sales	\$ 18,345	\$ 12,722	\$ 5,623	44 %
Gross-to-net revenue adjustment percentage	45 %	41 %		
Revenue – collaborations and services	11,211	5,868	\$ 5,343	91 %
Royalties – collaborations	19,055	304	\$ 18,751	*
Total revenues	\$ 48,611	\$ 18,894	\$ 29,717	157 %

	Six Months Ended June 30,			
	2023	2022	\$ Change	% Change
Net revenue – commercial product sales:				
Gross revenue from product sales	\$ 63,628	\$ 37,420	\$ 26,208	70 %
Less: Wholesaler distribution fees, rebates and chargebacks, product returns and other discounts	27,721	14,872	\$ 12,849	86 %
Net revenue – commercial product sales	\$ 35,907	\$ 22,548	\$ 13,359	59 %
Gross-to-net revenue adjustment percentage	44 %	40 %		
Revenue – collaborations and services	22,597	8,034	\$ 14,563	181 %
Royalties – collaborations	30,733	304	\$ 30,429	*
Total revenues	\$ 89,237	\$ 30,886	\$ 58,351	189 %

* Not meaningful

Afrezza — Gross revenue from sales of *Afrezza* increased by \$4.9 million, or 29%, for the three months ended June 30, 2023 compared to the same period in the prior year. The increase mainly reflects a combination of higher product demand and higher price. The gross-to-net adjustment was 39% of gross revenue, or \$8.7 million, for the three months ended June 30, 2023, compared to 38% of gross revenue or \$6.6 million, for the same period in the prior year. The increase in the gross-to-net percentage was primarily driven by an increase in rebates (as a percentage of gross sales). As a result, net revenue from sales of *Afrezza* increased by \$2.9 million, or 27%, for the three months ended June 30, 2023, compared to the same period in the prior year.

Gross revenue from sales of *Afrezza* increased by \$8.8 million, or 26%, for the six months ended June 30, 2023 compared to the same period in the prior year. The increase primarily reflects a combination of higher product demand and higher price. The gross-to-net adjustment was 38% of gross revenue, or \$16.2 million, for the six months ended June 30, 2023, compared to 39% of gross revenue, or \$12.9 million, for the same period in the prior year. As a result, net revenue from sales of *Afrezza* increased by \$5.5 million, or 27%, for the six months ended June 30, 2023, compared to the same period in the prior year.

V-Go — Gross revenue from sales of V-Go increased by \$6.9 million, or 169%, and net revenue by \$2.7 million, or 132%, for the three months ended June 30, 2023, compared to the same period in the prior year. V-Go was acquired in May 2022. The gross-to-net adjustment was 56% of gross revenue, or \$6.2 million, for the three months ended June 30, 2023, compared to 49% of gross revenue, or \$2.0 million, for the same period in the prior year. The increase in gross-to-net percentage was mainly attributable to rebates.

Gross revenue from sales of V-Go increased by \$17.4 million, or 425%, and net revenue by \$7.9 million, or 380%, for the six months ended June 30, 2023, compared to the same period in the prior year. V-Go was acquired in May 2022. The gross-to-net adjustment was 54% of gross revenue, or \$11.5 million, for the six months ended June 30, 2023, compared to 49% of gross revenue, or \$2.0 million, for the same period in the prior year. The increase in gross-to-net percentage was mainly attributable to commercial and government rebates and product distribution fees.

Collaborations and Services — Net revenue from collaborations and services increased by \$5.3 million, or 91%, for the three months ended June 30, 2023, and \$14.6 million, or 181%, for the six months ended June 30, 2023, compared to the same periods in the prior year. The increases in collaborations and services revenue were primarily attributable to revenues associated with the CSA with UT. Revenue associated with the CSA was deferred until we began commercial manufacturing and subsequently selling Tyvaso DPI in June 2022. During the three months ended June 30, 2023, we recognized \$10.9 million of revenue under the CSA and \$19.1 million of royalty revenue, compared with \$4.7 million of revenue under the CSA and \$0.3 million of royalty revenue for the same period in the prior year. During the six months ended June 30, 2023, we recognized \$22.1 million of revenue under the CSA and \$30.7 million of royalty revenue, compared with \$5.9 million of revenue under the CSA and \$0.3 million of royalty revenue for the same period in the prior year. See Note 10 – *Collaboration, Licensing and Other Arrangements*.

Commercial product gross profit

The following table provides a comparison of the commercial product gross profit categories for the three and six months ended June 30, 2023 and 2022 (dollars in thousands):

	Three Months Ended June 30,			
	2023	2022	\$ Change	% Change
Commercial product gross profit:				
Net revenue – commercial product sales	\$ 18,345	\$ 12,722	\$ 5,623	44 %
Less: Cost of goods sold	5,224	4,617	\$ 607	13 %
Commercial product gross profit:	<u>\$ 13,121</u>	<u>\$ 8,105</u>	\$ 5,016	62 %
Gross margin	72 %	64 %		

	Six Months Ended June 30,			
	2023	2022	\$ Change	% Change
Commercial product gross profit:				
Net revenue – commercial product sales	\$ 35,907	\$ 22,548	\$ 13,359	59 %
Less: Cost of goods sold	10,754	6,901	\$ 3,853	56 %
Commercial product gross profit:	<u>\$ 25,153</u>	<u>\$ 15,647</u>	\$ 9,506	61 %
Gross margin	70 %	69 %		

Commercial product gross profit increased by \$5.0 million, or 62%, for the three months ended June 30, 2023, and \$9.5 million, or 61% for the six months ended June 30, 2023. The increase in gross profit was primarily attributable to an increase in Afrezza sales partially offset by an increase in cost of goods sold due to higher commercial product sales and lower cost absorption as a result of the costs absorbed by the full commercial production of Tyvaso DPI beginning in the second quarter of 2022. The acquisition of V-Go in May 2022 contributed to the increase in commercial product sales and related cost of goods sold for the three and six months ended June 30, 2023. As a result, gross margin was 72% for the three months ended June 30, 2023, compared to 64% for the same period in the prior year and 70% for the six months ended June 30, 2023, compared to 69% for the same period in the prior year.

Expenses

The following table provides a comparison of the expense categories for the three and six months ended June 30, 2023 (dollars in thousands):

	Three Months Ended June 30,			
	2023	2022	\$ Change	% Change
Expenses:				
Cost of goods sold	\$ 5,224	\$ 4,617	\$ 607	13 %
Cost of revenue – collaborations and services	9,013	8,298	\$ 715	9 %
Research and development	6,453	4,893	\$ 1,560	32 %
Selling	14,002	15,868	\$ (1,866)	(12 %)
General and administrative	11,947	10,175	\$ 1,772	17 %
Loss (gain) on foreign currency transaction	251	(4,503)	\$ 4,754	*
Total expenses	<u>\$ 46,890</u>	<u>\$ 39,348</u>	\$ 7,542	19 %

	Six Months Ended June 30,			
	2023	2022	\$ Change	% Change
Expenses:				
Cost of goods sold	\$ 10,754	\$ 6,901	\$ 3,853	56 %
Cost of revenue — collaborations and services	19,696	17,012	\$ 2,684	16 %
Research and development	12,058	8,429	\$ 3,629	43 %
Selling	27,312	28,596	\$ (1,284)	(4 %)
General and administrative	22,489	18,144	\$ 4,345	24 %
Loss (gain) on foreign currency transaction	1,205	(6,486)	\$ 7,691	*
Total expenses	<u>\$ 93,514</u>	<u>\$ 72,596</u>	\$ 20,918	29 %

* Not meaningful

Cost of revenue – collaborations and services increased by \$0.7 million, or 9%, for the three months ended June 30, 2023, and \$2.7 million, or 16%, for the six months ended June 30, 2023, compared to the same periods in the prior year. The increases were attributable to an increase in manufacturing activities for the sale of Tyvaso DPI product to UT which began in the second quarter of 2022.

R&D expenses increased by \$1.6 million, or 32%, for the three months ended June 30, 2023, and \$3.6 million, or 43%, for the six months ended June 30, 2023, compared to the same periods in the prior year. The increases were primarily attributable to development activities for MNKD-101 (inhaled clofazimine) and the Afrezza post-marketing clinical study (INHALE-3) which commenced in the second quarter of 2023.

Selling expenses decreased by \$1.9 million, or 12%, for the three months ended June 30, 2023, and \$1.3 million, or 4%, for the six months ended June 30, 2023, compared to the same periods in the prior year. The decreases were primarily attributable to the termination of an Afrezza pilot promotional effort targeting primary care physicians, which ended in the third quarter of 2022, partially offset by increased headcount after the acquisition of V-Go in the second quarter of 2022.

General and administrative expenses increased by \$1.8 million, or 17%, for the three months ended June 30, 2023, and \$4.3 million, or 24%, for the six months ended June 30, 2023, compared to the same periods in the prior year. The increases were primarily attributable to higher stock-based compensation and increased headcount.

Under the Insulin Supply Agreement with Amphastar, payment obligations are denominated in Euros. We are required to record the non-cash foreign currency transaction impact of the U.S. dollar to Euro exchange rate associated with the recognized gain or loss on purchase commitments. The foreign currency transaction loss was \$0.3 million for the three months ended June 30, 2023, compared to a gain of \$4.5 million for the same period in the prior year, and a loss of \$1.2 million for the six months ended June 30, 2023, compared to a gain of \$6.5 million for the same period in the prior year.

Other Income (Expense)

The following table provides a comparison of the other income (expense) categories for the three and six months ended June 30, 2023 and 2022 (dollars in thousands):

	Three Months Ended June 30,			
	2023	2022	\$ Change	% Change
Interest income	\$ 1,547	\$ 516	\$ 1,031	200 %
Interest expense on financing liability	(2,449)	(2,443)	\$ 6	0 %
Interest expense	(6,873)	(6,642)	\$ 231	3 %
Gain on available-for-sale securities	932	—	\$ 932	*
Other expense	(143)	—	\$ (143)	*
Total other expense	<u>\$ (6,986)</u>	<u>\$ (8,569)</u>	<u>\$ (1,583)</u>	<u>(18 %)</u>

	Six Months Ended June 30,			
	2023	2022	\$ Change	% Change
Interest income	\$ 2,849	\$ 893	\$ 1,956	219 %
Interest expense on financing liability	(4,873)	(4,814)	\$ 59	1 %
Interest expense	(9,659)	(9,390)	\$ 269	3 %
Gain on available-for-sale securities	932	—	\$ 932	*
Other expense	(32)	—	\$ (32)	*
Total other expense	<u>\$ (10,783)</u>	<u>\$ (13,311)</u>	<u>\$ (2,528)</u>	<u>(19 %)</u>

* Not meaningful

Interest income, consisting of interest on investments net of amortization, increased by \$1.0 million for the three months ended June 30, 2023, and by \$2.0 million for the six months ended June 30, 2023, compared to the same periods in the prior year primarily due to higher yields on our marketable securities and money market funds.

Interest expense on financing liability was \$2.4 million for the three months ended June 30, 2023, and \$4.9 million for the six months ended June 30, 2023, and remained consistent with the same periods in the prior year. See Note 15 – *Commitments and Contingencies*.

Interest expense was \$6.9 million for the three months ended June 30, 2023, and \$9.7 million for the six months ended June 30, 2023, and remained consistent with the same periods in the prior year due to fixed interest rates on notes and consistent recognition of interest expense related to the achievement of Afrezza milestones. See Note 8 – *Accrued Expenses and Other Current Liabilities* and Note 9 – *Borrowings*.

Gain on available-for-sale securities for the three and six months ended June 30, 2023 was \$0.9 million as a result of the change in the fair value of the investment that related to credit risk.

Other expense for the three and six months ended June 30, 2023 and 2022 consisted primarily of losses associated with a foreign currency hedging transaction that was entered into to mitigate our exposure to the foreign currency exchange risk associated with our Insulin Supply Agreement.

LIQUIDITY AND CAPITAL RESOURCES

Our principal sources of liquidity are our cash, cash equivalents, and investments. Our primary uses of cash include the development of our product pipeline, the manufacturing and marketing of Afrezza and V-Go, manufacturing Tyvaso DPI, the funding of general and administrative expenses, and interest expense on our financing liability and debt.

To date, we have funded our operations primarily through the sale of equity and convertible debt securities, from the receipt of upfront and milestone payments from collaborations, from borrowings, from sales of Afrezza and V-Go, from royalties and manufacturing revenue from UT as well as from proceeds from the sale-leaseback transaction.

We believe we will be able to meet our liquidity needs over the next twelve months, as well as longer-term needs, based on the balance of cash, cash equivalents and investments on hand, projected sales of Afrezza and V-Go, and projected royalties and manufacturing revenue from the production and sale of Tyvaso DPI.

As of June 30, 2023, we had \$69.2 million in insulin purchase commitments and \$278.8 million principal amount of outstanding debt, consisting of:

- \$230.0 million aggregate principal amount of Senior convertible notes bearing interest at 2.50% payable semi-annually in arrears on March 1 and September 1 of each year, beginning on September 1, 2021 and maturing on March 1, 2026, unless earlier converted, redeemed or repurchased. The Senior convertible notes are convertible at an initial conversion price of approximately \$5.21 per share of common stock. The conversion rate is subject to adjustment under certain circumstances in accordance with the terms of the Indenture.
- \$40.0 million principal amount under the MidCap credit facility, bearing interest at an annual rate equal to one-month Secured Overnight Financing Rate ("SOFR") plus 6.25% (capped at a total of 8.25%), subject to a one-month SOFR floor of 1.00%. Interest is payable monthly in arrears. Principal is payable in equal monthly installments beginning in September 2023 through maturity in August 2025.
- \$8.8 million principal amount of indebtedness under the Mann Group convertible note bearing interest at a fixed rate of 2.50% per annum compounded quarterly and maturing in December 2025, which is convertible into shares of our common stock at the option of Mann Group at a conversion price of \$2.50 per share. Interest is payable quarterly in arrears in-kind or in shares at our option.

To date, we have been able to timely make our required interest payments, but we cannot guarantee that we will be able to do so in the future. If we fail to repay, repurchase or redeem our outstanding notes when required, we will be in default under the applicable instrument for such indebtedness and may also suffer an event of default under the terms of other borrowing arrangements that we may enter into from time to time. Any of these events could have a material adverse effect on our business, results of operations and financial condition, up to and including the noteholders initiating bankruptcy proceedings or causing us to cease operations altogether.

In July 2013, we issued certain milestone rights ("Milestone Rights") pursuant to the Milestone Rights Agreement to the Original Milestone Purchasers. The Milestone Rights were subsequently assigned the Milestone Purchasers. The Milestone Rights provide the Milestone Purchasers certain rights to receive payments of up to \$90.0 million upon the occurrence of specified strategic and sales milestones, \$60.0 million of which remain payable upon achievement of such milestones as of June 30, 2023. See Note 8 – *Accrued Expenses and Other Current Liabilities*, Note 9 – *Borrowings* and Note 15 – *Commitments and Contingencies* for further information related to the Milestone Rights.

During the six months ended June 30, 2023, we generated \$3.8 million of cash from our operating activities, which consisted primarily of \$98.6 million of revenue, partially offset by \$39.5 million of cost of goods sold, \$25.0 million of selling expenses, \$14.2 million of general and administrative expenses, \$13.1 million of R&D costs and \$4.3 million of cash paid for interest.

During the six months ended June 30, 2022, we used \$50.2 million of cash for our operating activities, which primarily consisted of \$38.6 million of selling and general and administrative expenses, \$21.5 million of cost of goods sold, \$10.9 million of costs for R&D and \$5.8 million of cash paid for interest, partially offset by \$31.7 million of revenue.

Cash provided by investing activities of \$17.5 million for the six months ended June 30, 2023 was primarily due to \$69.1 million of proceeds received from the sales of debt securities, partially offset by the purchase of debt securities of \$26.4 million and by \$25.2 million for the purchase of property and equipment.

Cash used in investing activities of \$37.5 million for the six months ended June 30, 2022 was primarily due to the purchase of \$68.5 million of debt securities, the up-front consideration of \$15.1 million for certain assets and assumed liabilities related to V-Go, \$5.0 million purchase of available-for-sale securities, and \$2.2 million purchase of property and equipment, partially offset by the maturity of \$53.3 million of debt securities.

Cash used in financing activities of \$4.8 million for the six months ended June 30, 2023 was primarily due to \$8.5 million of payments to taxing authorities from equity withheld upon vesting of RSUs and stock options, partially offset by \$3.7 million in proceeds from at-the-market offerings.

Cash used in financing activities of \$1.0 million for the six months ended June 30, 2022 was primarily due to the payments on our financing liability of \$1.4 million.

Future Liquidity Needs

We believe we will be able to meet our near-term liquidity needs based on our cash, cash equivalents and investments on hand, sales of Afrezza and V-Go, and royalties and manufacturing revenue from the production and sale of Tyvaso DPI as well as through debt or equity financing, if necessary, for our long-term liquidity needs. We are not currently profitable and have rarely generated positive net cash flow from operations. In addition, we expect to continue to incur expenditures for the foreseeable future in support of our manufacturing operations, sales and marketing costs for our products and development costs for other product candidates in our pipeline. As of June 30, 2023, we had capital resources comprised of \$86.2 million in cash and cash equivalents, \$58.2 million in short-term investments and \$2.3 million in long-term investments, and total principal amount of outstanding borrowings of \$278.8 million.

We believe our resources will be sufficient to fund our operations for the next twelve months from the date of issuance of our condensed consolidated financial statements included in Part I – Financial Statements (Unaudited).

Contractual Obligations

See Note 9 – *Borrowings* and Note 15 – *Commitments and Contingencies* for a discussion of material changes outside of the ordinary course of business in our contractual obligations from those disclosed within “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” as contained in the Annual Report.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Interest Rate Risk

Interest on borrowings under the MidCap credit facility accrues interest at an annual rate equal to the lesser of (i) 8.25% and (ii) the one-month SOFR (subject to a one-month SOFR floor of 1.00%) plus 6.25%. Accordingly, our interest expense under the MidCap credit facility is subject to changes in the one-month SOFR rate.

All other debt has fixed interest rates, so the interest expense associated with such debt is not exposed to changes in market interest rates. Specifically, the interest rate on the amount borrowed under the Mann Group convertible note is fixed at 2.50% and the interest rate under the Senior convertible notes is fixed at 2.50%. See Note 9 – *Borrowings* for information about the principal amount of outstanding debt.

If a hypothetical 10% change in the one-month SOFR interest rates on June 30, 2023 were to have occurred, this change would not have had a material effect on our interest payment obligation.

Foreign Currency Exchange Risk

In April 2023, we entered into a 90-day foreign currency hedging transaction to mitigate our exposure to foreign currency exchange risks associated with our insulin purchase obligation under the Insulin Supply Agreement. The hedging transaction hedges against short-term currency fluctuations for the remaining current year purchase obligation under the Insulin Supply Agreement of €3.3 million, for which we realized a *de minimis* amount of loss during the three months ended June 30, 2023. This amount is recorded in other income and expense.

We incur and will continue to incur significant expenditures for insulin supply obligations under our Insulin Supply Agreement with Amphastar. Such obligations are denominated in Euros. At the end of each reporting period, the recognized gain or loss on purchase commitment is converted to U.S. dollars at the then-applicable foreign exchange rate. As a result, our business is affected by fluctuations in exchange rates between the U.S. dollar and the Euro. For the six months ended June 30, 2023, we realized a \$1.2 million currency loss, which was included in loss on foreign currency transaction in the accompanying condensed consolidated statements of operations.

Exchange rate fluctuations may adversely affect our expenses, results of operations, financial position and cash flows. If a change in the U.S. dollar to Euro exchange rate equal to 10% of the U.S. dollar to Euro exchange rate on June 30, 2023 were to have occurred, this change would have resulted in a foreign currency impact to our pre-tax loss of approximately \$6.9 million.

ITEM 4. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and our Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), as of June 30, 2023. The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company’s management, including its principal executive and principal financial officers, as appropriate, to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

Based on the evaluation of our disclosure controls and procedures as of June 30, 2023, our Chief Executive Officer and our Chief Financial Officer have concluded, as of such date, that our disclosure controls and procedures were effective.

Changes in Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as such term is defined in Rule 13a-15(f) of the Exchange Act. An evaluation was also performed under the supervision and with the participation of our management, including our Chief Executive Officer and our Chief Financial Officer, of any change in our internal control over financial reporting that occurred during our last fiscal quarter and that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting. That evaluation did not identify any change in our internal control over financial reporting that occurred during our latest fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

We are subject to legal proceedings and claims that arise in the ordinary course of our business. As of the date hereof, we believe that the final disposition of such matters will not have a material adverse effect on our financial position, results of operations or cash flows. We maintain liability insurance coverage to protect our assets from losses arising out of or involving activities associated with ongoing and normal business operations.

Item 1A. Risk Factors

Below is a summary of the principal factors that make an investment in our common stock speculative or risky. This summary does not address all of the risks that we face. Additional discussion of the risks summarized in this risk factor summary, and other risks that we face, can be found below under the heading "Risk Factors" and should be carefully considered, together with other information in this Quarterly Report on Form 10-Q and our other filings with the Securities and Exchange Commission before making investment decisions regarding our common stock.

Summary Risk Factors

We face risks and uncertainties related to our business, many of which are beyond our control. In particular, risks associated with our business include:

RISKS RELATED TO OUR BUSINESS

- The products that we or our collaboration partner are commercializing may only achieve a limited degree of commercial success.
- Manufacturing risks may adversely affect our ability to manufacture our products and Tyvaso DPI, which could reduce our gross margin and profitability.
- If our suppliers fail to deliver materials and services needed for commercial manufacturing in a timely and sufficient manner or fail to comply with applicable regulations, and if we fail to timely identify and qualify alternative suppliers, our business, financial condition and results of operations would be harmed and the market price of our common stock and other securities could decline.
- If third-party payers do not cover our approved products, such products might not be prescribed, used or purchased, which would adversely affect our revenues.
- We may need to raise additional capital to fund our operations.
- We expect that our results of operations will fluctuate for the foreseeable future, which may make it difficult to predict our future performance from period to period.
- We have a history of operating losses. We expect to incur losses in the future and we may not generate positive cash flow from operations in the future.
- We may not be able to generate sufficient cash to service all of our indebtedness and commitments.
- Our business, product sales, results of operations and ability to access capital could be adversely affected by the effects of health pandemics or epidemics, in regions where we or third parties distribute our products or where we or third parties on which we rely have significant manufacturing facilities, concentrations of clinical trial sites or other business operations.
- Continued testing of our products and product candidates may not yield successful results, and even if it does, we may still be unable to successfully commercialize our current or future products.
- If we do not achieve our projected development goals in the timeframes we expect, our business, financial condition and results of operations will be harmed and the market price of our common stock and other securities could decline.
- The long-term safety and efficacy of approved products may differ from clinical studies, which could negatively impact sales and could lead to reputational harm or other negative effects.
- Our products and product candidates may be rendered obsolete by rapid technological change.
- We may undertake internal restructuring activities in the future that could result in disruptions to our business or otherwise materially harm our results of operations or financial condition.

- If our information technology systems or data, or those of third parties upon which we rely, are or were compromised, we could experience adverse consequences resulting from such compromise, including but not limited to regulatory investigations or actions; litigation; fines and penalties; disruptions of our business operations; reputational harm; loss of revenue or profits; loss of customers or sales; and other adverse consequences.

RISKS RELATED TO GOVERNMENT REGULATION

- Our product candidates must undergo costly and time-consuming rigorous nonclinical and clinical testing and we must obtain regulatory approval prior to the sale and marketing of any product in each jurisdiction. The results of this testing or issues that develop in the review and approval by a regulatory agency may subject us to unanticipated delays or prevent us from marketing any products.
- If we do not comply with regulatory requirements at any stage, whether before or after marketing approval is obtained, we may be fined or forced to remove a product from the market, subject to criminal prosecution, or experience other adverse consequences, including restrictions or delays in obtaining regulatory marketing approval.
- We are subject to stringent, ongoing government regulation.
- If we or any future partner fails to comply with federal and state healthcare laws, including fraud and abuse and health information laws, we could face substantial penalties and our business, results of operations, financial condition and prospects could be adversely affected.
- We are subject to stringent and changing U.S. and foreign laws, regulations, rules, contractual obligations, policies and other obligations related to data privacy and security. Our actual or perceived failure to comply with such obligations could lead to regulatory investigations or actions; litigation (including class claims) and mass arbitration demands; fines and penalties; disruptions of our business operations; reputational harm; loss of revenue or profits; loss of customers or sales; and other adverse business consequences.

RISKS RELATED TO OUR COMMON STOCK

- Our stock price is volatile.
- Future sales of shares of our common stock in the public market, or the perception that such sales may occur, may depress our stock price and adversely impact the market price of our common stock and other securities.

GENERAL RISK FACTORS

- Unstable market, economic and geopolitical conditions may have serious adverse consequences on our business, financial condition and stock price.

You should consider carefully the following information about the risks described below, together with the other information contained in this Quarterly Report on Form 10-Q before you decide to buy or maintain an investment in our common stock. We believe the risks described below are the risks that are material to us as of the date of this Quarterly Report. Additional risks and uncertainties that we are unaware of may also become important factors that affect us. The risk factors set forth below marked with an asterisk () did not appear as separate risk factors in, or contains changes to the similarly titled risk factors included in, Item 1A of the Annual Report. If any of the following risks actually occur, our business, financial condition, results of operations and future growth prospects would likely be materially and adversely affected. In these circumstances, the market price of our common stock could decline, and you may lose all or part of the money you paid to buy our common stock.*

Risk Factors

RISKS RELATED TO OUR BUSINESS

The products that we or our collaboration partner are commercializing may only achieve a limited degree of commercial success.*

Successful commercialization of therapeutic products is subject to many risks, including some that are outside our control. There are numerous examples of failures to fully exploit the market potential of therapeutic products, including by biopharmaceutical and device companies with more experience and resources than us. The products, including products that we commercialize ourselves and any products that we may develop or acquire in the future, and the product that is commercialized by our collaboration partner and future products that may be commercialized by a collaboration partner, may not gain market acceptance among physicians, patients,

third-party payers and the healthcare community. The degree of market acceptance of our or a collaboration partner's products depends on many factors, including the following:

- approved labeling claims;
- effectiveness of efforts by us and/or any current or future collaboration or marketing partner to support and educate patients and physicians about the benefits and proper administration of our products, and the perceived advantages of our products and the disadvantages of competitive products;
- willingness of the healthcare community and patients to adopt new technologies;
- ability to manufacture the product in sufficient quantities with acceptable quality and cost;
- perception of patients and the healthcare community, including third-party payers, regarding the safety, efficacy and benefits compared to competing products or therapies;
- convenience and ease of administration relative to existing treatment methods;
- coverage and reimbursement, as well as pricing relative to other treatment therapeutics and methods; and
- marketing and distribution support.

Because of these and other factors, the products described above may not gain market acceptance or otherwise be commercially successful. Failure to achieve market acceptance would limit our ability to generate revenue and would adversely affect our results of operations. We or our current or any future collaboration partner may need to enhance our/their commercialization capabilities in order to successfully commercialize such products in the United States or any other jurisdiction in which the product is approved for commercial sale, and we or the collaboration partner may not have sufficient resources to do so.

In order to increase adoption and sales of our products, we need to continue to develop our commercial organization, including maintaining and growing a highly experienced and skilled workforce with qualified sales representatives.*

In order to successfully commercialize our products in the United States, we have built a sales force that promotes Afrezza and V-Go to endocrinologists and selected primary care physicians. In order to successfully commercialize any approved products, we must continue to build our sales, marketing, distribution, managerial and other non-technical capabilities. The market for skilled commercial personnel is highly competitive, and we may not be able to hire all of the personnel we need on a timely basis or retain them for a sufficient period. Factors that may hinder our ability to successfully market and commercially distribute our products include:

- inability to recruit, retain and effectively manage adequate numbers of effective sales personnel;
- lack of complementary products to be offered by sales personnel, which may put us at a competitive disadvantage relative to companies that have more extensive product lines; and
- unforeseen delays, costs and expenses associated with maintaining our sales organization.

If we are unable to maintain an effective sales force for our products, including any other potential future approved products, we may not be able to generate sufficient product revenue in the United States. We are required to expend significant time and resources to train our sales force to educate physicians about our products. In addition, we must continually train our sales force and equip them with effective marketing materials to ensure that a consistent and appropriate message about our products is being delivered to our potential customers. We currently have limited resources compared to some of our competitors, and the continued development of our own commercial organization to market our products and any additional products we may develop or acquire will be expensive and time-consuming. We also cannot be certain that we will be able to continue to successfully develop this capability.

Similarly, if UT does not effectively engage or maintain its sales force for Tyvaso DPI, our ability to recognize royalties and manufacturing revenue from this collaboration will be adversely affected.

Manufacturing risks may adversely affect our ability to manufacture our products and Tyvaso DPI, which and could reduce our gross margin and profitability.*

We use our Danbury, Connecticut facility to formulate both the Afrezza and Tyvaso DPI inhalation powders, fill plastic cartridges with the powders, and package the cartridges into secondary packaging. We also assemble the inhalers from their individual molded parts. These semi-finished goods are then assembled into the final kits for commercial sale by a contract packager.

The manufacture of pharmaceutical products requires significant expertise and capital investment, including the development of advanced manufacturing techniques and process controls. Manufacturers of pharmaceutical products often encounter difficulties in production, especially in scaling up production to commercial batch sizes. These problems include difficulties with production costs, capacity utilization and yields. We may experience shortages of qualified personnel, which could impact our ability to meet

manufacturing requirements. There is also a need to comply with strictly enforced federal, state and foreign regulations, including inspections. Our facility is inspected on a regular basis by the FDA. If the FDA makes any major observations during future inspections, the corrective actions required could be onerous and time-consuming.

Any of these factors could cause us to delay or suspend production, could entail higher costs and may result in our being unable to obtain sufficient quantities for the commercialization of drug products at the costs that we currently anticipate. Furthermore, if we or a third-party manufacturer fail to deliver the required commercial quantities of the product or any raw material on a timely basis, and at commercially reasonable prices, sustainable compliance and acceptable quality, and we were unable to promptly find one or more replacement manufacturers capable of production at a substantially equivalent cost, in substantially equivalent volume and quality on a timely basis, we would likely be unable to meet demand for such drug products and we would lose potential revenues.

In addition, we rely on our contract manufacturers in Southern China to manufacture V-Go. Our contract manufacturer uses MannKind-owned custom-designed, semi-automated manufacturing equipment and production lines to meet our quality requirements. Separate contract manufacturers in China perform release testing, sterilization, inspection and packaging functions. As a result, our business is subject to risks associated with doing business in China, including:

- adverse political and economic conditions, particularly those potentially negatively affecting the trade relationship between the United States and China;
- trade protection measures, such as tariff increases, and import and export licensing and control requirements;
- potentially negative consequences from changes in tax laws;
- difficulties associated with the Chinese legal system, including increased costs and uncertainties associated with enforcing contractual obligations in China;
- historically lower protection of intellectual property rights;
- unexpected or unfavorable changes in regulatory requirements;
- changes and volatility in currency exchange rates;
- possible patient or physician preferences for more established pharmaceutical products and medical devices manufactured in the United States; and
- difficulties in managing foreign relationships and operations generally.

These risks are likely to be exacerbated by our limited experience with V-Go and its manufacturing processes. As demand increases, we may have to invest additional resources to purchase components, hire and train employees, and enhance our manufacturing processes. If we fail to increase our production capacity efficiently, our sales may not increase in line with our forecasts and our operating margins could fluctuate or decline. In addition, we may be unable to support commercialization of Tyvaso DPI.

If our suppliers fail to deliver materials and services needed for commercial manufacturing in a timely and sufficient manner or fail to comply with applicable regulations, and if we fail to timely identify and qualify alternative suppliers, our business, financial condition and results of operations would be harmed and the market price of our common stock and other securities could decline.*

For the commercial manufacture of inhaled drug products, we need access to sufficient, reliable and affordable supplies of FDKP, the inhaler, the related cartridges and other materials. For Afrezza, we also require a supply of insulin. Currently, the only source of insulin that we have qualified for Afrezza is manufactured by Amphastar. We must rely on all of our suppliers to comply with relevant regulatory and other legal requirements, including the production of insulin and FDKP in accordance with current good manufacturing practices (“cGMP”) for drug products, and the molding of the inhaler and cartridges components in accordance with quality system regulations (“QSRs”).

For V-Go, we obtain parts from a small number of suppliers, including some parts and components that are purchased from single-source vendors. Depending on a limited number of suppliers exposes us to risks, including limited control over pricing, availability, quality and delivery schedules. In addition, we do not have long-term supply agreements with most of our suppliers and, in many cases, we make our purchases on a purchase order basis. Under many of our supply agreements, we have no obligation to buy any given quantity of components, and our suppliers have no obligation to manufacture for us or sell to us any given quantity of components.

Because we do not have long-standing relationships with our suppliers, we may not be able to convince them to continue to make components available to us unless there is demand for such components from their other customers. If any one or more of our suppliers cease to provide us with sufficient quantities of components in a timely manner or on terms acceptable to us, we would have to seek alternative sources of supply. Because of factors such as the proprietary nature of our product, our quality control standards and regulatory requirements, we cannot quickly engage additional or replacement suppliers for some of our critical components.

We may also have difficulty obtaining similar components from other suppliers that meet the requirements of the FDA or other regulatory agencies. Although we conduct our own inspections and review and/or approve investigations of each supplier, there can be no assurance that the FDA, upon inspection, would find that the supplier substantially complies with the QSR or cGMP requirements, where applicable. If a supplier fails to comply with these requirements or the comparable requirements in foreign countries, regulatory authorities may subject us to regulatory action, including criminal prosecutions, fines and suspension of the manufacture of our products. If we are required to find a new or additional supplier, we will need to evaluate that supplier's ability to provide material that meets regulatory requirements, including cGMP or QSR requirements, as well as our specifications and quality requirements, which would require significant time and expense and could delay production.

As a result, our ability to purchase adequate quantities of the components for our products may be limited. Additionally, our suppliers may encounter problems that limit their ability to manufacture components for us, including financial difficulties or damage to their manufacturing equipment or facilities. In general, if any of our suppliers is unwilling or unable to meet its supply obligations or if we encounter delays or difficulties in our relationships with manufacturers or suppliers, and we are unable to secure an alternative supply source in a timely manner and on favorable terms, our business, financial condition, and results of operations may be harmed and the market price of our common stock and other securities may decline.

If third-party payers do not cover our approved products, such products might not be prescribed, used or purchased, which would adversely affect our revenues.*

In the United States and elsewhere, sales of prescription pharmaceuticals depend in large part on the availability of coverage and adequate reimbursement to the consumer from third-party payers, such as government health administration authorities and private insurance plans. Third-party payers are increasingly challenging the prices charged for medical products and services. The market for our approved products depends significantly on access to third-party payers' formularies, which are the lists of medications and devices for which third-party payers provide coverage and reimbursement. The industry competition to be included in such formularies often leads to downward pricing pressures on pharmaceutical and device companies. Also, third-party payers may refuse to include a particular branded product in their formularies or otherwise restrict patient access to a branded product when a less costly generic equivalent or other alternative is available. Even if favorable coverage and reimbursement status is attained for our products, less favorable coverage policies and reimbursement rates may be implemented in the future. In addition, because each third-party payer individually approves coverage and reimbursement levels, obtaining coverage and adequate reimbursement is a time-consuming and costly process. We may be required to provide scientific and clinical support for the use of any product to each third-party payer separately with no assurance that approval would be obtained. This process could delay the market acceptance of any product and could have a negative effect on our future revenues and operating results. Even if we succeed in bringing more products to market, we cannot be certain that any such products would be considered cost-effective or that coverage and adequate reimbursement to the consumer would be available. Patients will be unlikely to use our products unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of our products.

Our future revenues and ability to generate positive cash flow from operations may be affected by the continuing efforts of government and other third-party payers to contain or reduce the costs of healthcare through various means. In the United States, there have been several congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for products. For example, the Inflation Reduction Act, or IRA, which was signed into law in August 2022, limits insulin copays to \$35 per month for Medicare Part D beneficiaries starting in 2023. In certain foreign markets the pricing of prescription pharmaceuticals is subject to direct governmental control. The European Union provides options for its member states to restrict the range of medicinal products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. A member state may approve a specific price for the medicinal product or it may instead adopt a system of direct or indirect controls on the profitability of the company placing the medicinal product on the market.

If we or any collaboration or marketing partner is unable to obtain and maintain coverage of, and adequate third-party reimbursement for, our approved products, physicians may limit how much or under what circumstances they will prescribe or administer them and patients may decline to purchase them. This in turn could affect our or any collaboration or marketing partner's ability to successfully commercialize such products and would impact our profitability, results of operations, financial condition, and prospects.

We may need to raise additional capital to fund our operations.

We may need to raise additional capital, whether through the sale of equity or debt securities, additional strategic business collaborations, the establishment of other funding facilities, licensing arrangements, asset sales or other means, in order to support our ongoing activities, including the commercialization of our products and the development of our product candidates. It may be difficult for us to raise additional funds on favorable terms, or at all. The extent of our additional funding requirements will depend on a number of factors, including:

- the degree to which we are able to generate revenue from products that we or a collaboration partner commercialize;

- the costs of developing Afrezza and of commercializing Afrezza and V-Go on our own in the United States;
- the degree to which revenue from Afrezza exceeds or does not exceed the minimum revenue covenants under our credit and security agreement with MidCap Financial Trust (the “MidCap credit facility”), if applicable;
- the demand by any or all of the holders of our debt instruments to require us to repay or repurchase such debt securities if and when required;
- our ability to repay or refinance existing indebtedness, and the extent to which our notes with conversion options or any other convertible debt securities we may issue are converted into or exchanged for shares of our common stock;
- the rate of progress and costs of our clinical studies and R&D activities;
- the costs of procuring raw materials and operating our manufacturing facility;
- our obligation to make lease payments and milestone payments;
- our success in establishing additional strategic business collaborations or other sales or licensing of assets, and the timing and amount of any payments we might receive from any such transactions;
- actions taken by the FDA and other regulatory authorities affecting Afrezza, V-Go, Tyvaso DPI, our product candidates or competitive products;
- the emergence of competing technologies and products and other market developments;
- the costs of preparing, filing, prosecuting, maintaining and enforcing patent claims and other intellectual property rights or defending against claims of infringement by others;
- the level of our legal and litigation expenses; and
- the costs of discontinuing projects and technologies, and/or decommissioning existing facilities, if we undertake any such activities.

We have raised capital in the past through the sale of equity and debt securities and we may in the future pursue the sale of additional equity and/or debt securities, or the establishment of other funding facilities including asset-based borrowings. There can be no assurances, however, that we will be able to raise additional capital in the future on acceptable terms, or at all. Volatility and disruptions of the global supply chain and financial markets, if sustained or recurrent, could prevent us or make it more difficult for us to access capital.

Issuances of additional debt or equity securities or the issuance of common stock upon conversion of outstanding convertible debt securities for shares of our common stock could impact the rights of the holders of our common stock and will dilute their ownership percentage. Moreover, the establishment of other funding facilities may impose restrictions on our operations. These restrictions could include limitations on additional borrowing and specific restrictions on the use of our assets, as well as prohibitions on our ability to create liens, pay dividends, redeem our stock or make investments. We may also raise additional capital by pursuing opportunities for the licensing or sale of certain intellectual property and other assets. We cannot offer assurances, however, that any strategic collaboration, sales of securities or sales or licenses of assets will be available to us on a timely basis or on acceptable terms, if at all. We may be required to enter into relationships with third parties to develop or commercialize products or technologies that we otherwise would have sought to develop independently, and any such relationships may not be on terms as commercially favorable to us as might otherwise be the case.

In the event that sufficient additional funds are not obtained through strategic collaboration opportunities, sales of securities, funding facilities, licensing arrangements, borrowing arrangements and/or asset sales on a timely basis, we may be required to reduce expenses through the delay, reduction or curtailment of our projects, or further reduction of costs for facilities and administration.

We cannot provide assurances that changed or unexpected circumstances will not result in the depletion of our capital resources more rapidly than we currently anticipate. There can be no assurances that we will be able to raise additional capital in sufficient amounts or on favorable terms, or at all. If we are unable to raise adequate additional capital when required or in sufficient amounts or on terms acceptable to us, we may have to delay, scale back or discontinue one or more product development programs, curtail our commercialization activities, significantly reduce expenses, sell assets (potentially at a loss), enter into relationships with third parties to develop or commercialize products or technologies that we otherwise would have sought to develop or commercialize independently, cease operations altogether, pursue an acquisition of our company at a price that may result in up to a total loss on investment for our stockholders, file for bankruptcy or seek other protection from creditors, or liquidate all of our assets.

We expect that our results of operations will fluctuate for the foreseeable future, which may make it difficult to predict our future performance from period to period.

Our operating results have fluctuated in the past and are likely to do so in future periods. Some of the factors that could cause our operating results to fluctuate from period to period include the factors that will affect our funding requirements described above under “Risk Factors — We may need to raise additional capital to fund our operations.” In addition, the current inflationary environment related to increased aggregate demand and supply chain constraints has the potential to adversely affect our operating expenses.

We believe that comparisons from period to period of our financial results are not necessarily meaningful and should not be relied upon as indications of our future performance.

We have a history of operating losses. We expect to incur losses in the future and we may not generate positive cash flow from operations in the future.*

We are not currently profitable and have rarely generated positive net cash flow from operations. As of June 30, 2023, we had an accumulated deficit of \$3.2 billion. The accumulated deficit has resulted principally from costs incurred in our R&D programs, the write-off of assets (including goodwill, inventory and property, plant and equipment) and general operating expenses. We expect to make substantial expenditures and to incur increasing operating losses in the future in order to continue commercializing our products and to advance development of product candidates in our pipeline. In addition, under our Insulin Supply Agreement with Amphastar, we agreed to purchase certain annual minimum quantities of insulin through 2027. As of June 30, 2023, there was approximately \$69.2 million remaining in aggregate purchase commitments under this agreement. We may not have the necessary capital resources to service this contractual commitment.

Our losses have had, and are expected to continue to have, an adverse impact on our working capital, total assets and stockholders’ equity. Our ability to achieve and sustain positive cash flow from operations and profitability depends heavily upon successfully commercializing our products, and although we had positive cash flow from operations during the six months ended June 30, 2023, we may not generate positive cash flow from operations or be profitable in the future.

We may not be able to generate sufficient cash to service all of our indebtedness and commitments.*

Our ability to make scheduled payments on our purchase commitments and debt obligations will depend on our financial and operating performance, which is subject to the commercial success of our products, the extent to which we are able to successfully develop and commercialize additional products, prevailing economic and competitive conditions, and to certain financial, business and other factors beyond our control. We cannot assure you that we will maintain a level of cash flows from operating activities sufficient to permit us to pay the principal, premium, if any, and interest on our indebtedness. If we fail to pay interest on, or repay, our outstanding term loan under the MidCap credit facility or borrowings under the Senior convertible notes or the Mann Group convertible note when required, we will be in default under the instrument for such debt securities or loans, and may also suffer an event of default under the terms of other borrowing arrangements that we may enter into from time to time. If our cash flows and capital resources are insufficient to fund our obligations, we may be forced to reduce or delay capital expenditures, sell assets or operations, seek additional capital or restructure or refinance our indebtedness and lease obligations. We cannot assure you that we would be able to take any of these actions, that these actions would be successful and permit us to meet our scheduled obligations or that these actions would be permitted under the terms of our future debt agreements. In the absence of sufficient operating results and resources, we could face substantial liquidity problems and might be required to dispose of material assets or operations to meet our debt service and other obligations. We may not be able to consummate those dispositions or obtain sufficient proceeds from those dispositions to meet our debt service and other obligations when due. Any of these events could have a material adverse effect on our business, results of operations and financial condition, up to and including the noteholders initiating bankruptcy proceedings or causing us to cease operations altogether.

In addition, the MidCap credit facility requires us, and any debt arrangements we may enter into in the future may require us, to comply with various covenants that limit our ability to, among other things:

- dispose of assets;
- complete mergers or acquisitions;
- incur indebtedness or modify existing debt agreements;
- amend or modify certain material agreements;
- engage in additional lines of business;
- encumber assets;
- pay dividends or make other distributions to holders of our capital stock;
- make specified investments;

- change certain key management personnel or organizational documents; and
- engage in transactions with our affiliates.

We may be required to comply with additional covenants in the future under certain circumstances. The restrictive covenants in the MidCap credit facility could prevent us from pursuing business opportunities that we or our stockholders may consider beneficial.

If our unrestricted cash and short-term investments balance falls below \$90.0 million, we will be subject to a covenant relating to trailing twelve-month minimum Afrezza net revenue, tested on a monthly basis, which is set forth in the MidCap credit facility Agreement, as amended. If we fail to meet this covenant, any outstanding borrowings, together with accrued interest, under the MidCap credit facility could be declared immediately due and payable.

A breach of any of these covenants could result in an event of default under the MidCap credit facility. If we default on our obligations under the MidCap credit facility, the lender could proceed against the collateral granted to them to secure our indebtedness or declare all obligations under the MidCap credit facility to be due and payable. In certain circumstances, procedures by the lender could result in a loss by us of all of our equipment and inventory, which are included in the collateral granted to the lender. In addition, upon any distribution of assets pursuant to any liquidation, insolvency, dissolution, reorganization or similar proceeding, the holders of secured indebtedness will be entitled to receive payment in full from the proceeds of the collateral securing our secured indebtedness before the holders of other indebtedness or our common stock will be entitled to receive any distribution with respect thereto.

Our business, product sales, results of operations and ability to access capital could be adversely affected by the effects of health pandemics or epidemics, in regions where we or third parties distribute our products or where we or third parties on which we rely have significant manufacturing facilities, concentrations of clinical trial sites or other business operations.

Our business could be adversely affected by the effects of health pandemics or epidemics in regions where we have business operations, and we could experience significant disruptions in the operations of third-party manufacturers and distributors upon whom we rely. For example, sales and demand for Afrezza were previously adversely affected by the global COVID-19 pandemic, and a resurgence of the COVID-19 pandemic or future pandemics or epidemics could adversely affect the demand for and sales of our products in the future. Quarantines, shelter-in-place and similar government orders, or the perception that such orders, shutdowns or other restrictions on the conduct of business operations could occur, related to COVID-19 or other infectious diseases, could impact personnel at third-party manufacturing facilities in the United States and other countries, or the availability or cost of materials, which would disrupt our supply chain. In particular, our contract manufacturers in China could be impacted by that country's recent policy of strict lockdowns in order to reduce the spread of disease. Disruptions in sales and demand for our products would be expected to occur:

- if patients are physically quarantined or are unable or unwilling to visit healthcare providers,
- if physicians restrict access to their facilities for a material period of time,
- if healthcare providers prioritize treatment of acute or communicable illnesses over chronic disease management,
- if pharmacies are closed or suffering supply chain disruptions,
- if patients lose access to employer-sponsored health insurance due to periods of high unemployment, or
- as a result of general disruptions in the operations of payers, distributors, logistics providers and other third parties that are necessary for our products to be prescribed and reimbursed.

In addition, clinical trials of our products previously experienced delays as a result of the COVID-19 pandemic and may be affected by a resurgence in the COVID-19 pandemic or a future health pandemic or epidemic. Clinical site initiation and patient enrollment may be delayed due to prioritization of hospital resources toward the health pandemic or epidemic. Some patients may not be able or willing to comply with clinical trial protocols if quarantines impede patient movement or interrupt healthcare services. Similarly, our ability to recruit and retain patients and principal investigators and site staff would adversely impact our clinical trial operations.

A pandemic or epidemic also has the potential for disruption of global financial markets. This disruption, if sustained or recurrent, could make it more difficult for us to access capital, which could negatively affect our liquidity. In addition, a recession or market correction as a result of a health pandemic or epidemic could materially affect our business and the value of our common stock.

If we do not obtain regulatory approval of our products in foreign jurisdictions, we will not be able to market in such jurisdictions, which could limit our commercial revenues. We may not be able to establish additional regional partnerships or other arrangements with third parties for the commercialization of our products outside of the United States.*

Although Afrezza has been approved in the United States by the FDA and in Brazil by ANVISA, we have not yet obtained approval in any other jurisdiction. Similarly, V-Go has received 510(k) clearance from the FDA, but has not received a comparable approval in any other country. In order to market our products in a foreign jurisdiction, we must obtain regulatory approval in each such foreign jurisdiction, and we may never be able to obtain such approvals. The research, testing, manufacturing, labeling, sale, import, export,

marketing, and distribution of therapeutic products outside the United States are subject to extensive regulation by foreign regulatory authorities, whose regulations differ from country to country. We will be required to comply with the different regulations and policies of the jurisdictions where we seek approval for our products, and we have not yet identified all of the requirements that we will need to satisfy to submit our products for approval for other jurisdictions. This will require additional time, expertise and expense, including the potential need to conduct additional studies or development work for other jurisdictions beyond the work that we have conducted to support the approval of our products in the United States.

Our current strategy for the future commercialization of our products outside of the United States, subject to receipt of the necessary regulatory approvals, is to seek, establish and maintain regional partnerships in foreign jurisdictions where there are commercial opportunities. It may be difficult to find or maintain collaboration partners that are able and willing to devote the time and resources necessary to successfully commercialize our products. Collaborations with third parties may require us to relinquish material rights, including revenue from commercialization, agree to unfavorable terms or assume material ongoing development obligations that we would have to fund. These collaboration arrangements are complex and time-consuming to negotiate, and if we are unable to reach agreements with third-party collaborators, we may fail to meet our business objectives and our financial condition may be adversely affected. We may also face significant competition in seeking collaboration partners, and may not be able to find a suitable collaboration partner in a timely manner on acceptable terms, or at all. Any of these factors could cause delay or prevent the successful commercialization of our products in foreign jurisdictions and could have a material and adverse impact on our business, financial condition and results of operations and the market price of our common stock and other securities could decline.

Continued testing of our products and product candidates may not yield successful results, and even if it does, we may still be unable to successfully commercialize our current or future products.

We have generally sought to develop product candidates through our internal research programs. All such product candidates will require additional research and development and, in some cases, significant preclinical, clinical and other testing prior to seeking regulatory approval to market them. Accordingly, these product candidates will not be commercially available for a number of years, if at all. Further research and development on these programs will require significant financial resources. Given our limited financial resources, we may not be able to advance these programs into clinical development unless we are able to obtain specific funding for these programs or enter into collaborations with third parties.

Our research and development programs are designed to test the safety and efficacy of our product candidates through extensive nonclinical and clinical testing. We may experience numerous unforeseen events during, or as a result of, the testing process that could delay or impact commercialization of any of our product candidates, including the following:

- safety and efficacy results obtained in our nonclinical and early clinical testing may be inconclusive or may not be predictive of results that we may obtain in our future clinical studies or following long-term use, and we may as a result be forced to stop developing a product candidate or alter the marketing of an approved product;
- the analysis of data collected from clinical studies of our product candidates may not reach the statistical significance necessary, or otherwise be sufficient to support FDA or other regulatory approval for the claimed indications;
- after reviewing clinical data, we or any collaborators may abandon projects that we previously believed were promising;
- our product candidates may not produce the desired effects or may result in adverse health effects or other characteristics that preclude regulatory approval or limit their commercial use once approved; and
- disruptions caused by man-made or natural disasters or public health pandemics or epidemics or other business interruptions.

As a result of any of these events, we, any collaborator, the FDA, or any other regulatory authorities, may suspend or terminate clinical studies or marketing of the drug at any time. Any suspension or termination of our clinical studies or marketing activities may harm our business, financial condition and results of operations and the market price of our common stock and other securities may decline.

If we do not achieve our projected development goals in the timeframes we expect, our business, financial condition and results of operations will be harmed and the market price of our common stock and other securities could decline.*

For planning purposes, we estimate the timing of the accomplishment of various scientific, clinical, regulatory and other product development goals, which we sometimes refer to as milestones. These milestones may include the commencement or completion of scientific studies and clinical studies and the submission of regulatory filings. From time to time, we publicly announce the expected timing of some of these milestones. All of these milestones are based on a variety of assumptions. The actual timing of the achievement of these milestones can vary dramatically from our estimates, in many cases for reasons beyond our control, depending on numerous factors, including:

- the rate of progress, costs and results of our clinical studies and preclinical research and development activities;

- our ability to identify and enroll patients who meet clinical study eligibility criteria;
- our ability to access sufficient, reliable and affordable supplies of components used in the manufacture of our product candidates or to source clinical supplies from contract manufacturers;
- the costs of expanding and maintaining manufacturing operations, as necessary;
- the extent to which our clinical studies compete for clinical sites and eligible subjects with clinical studies sponsored by other companies;
- actions by regulators; and
- disruptions caused by geopolitical conflicts, man-made or natural disasters or public health pandemics or epidemics or other business interruptions.

If we fail to commence or complete, or experience delays in or are forced to curtail, our proposed development programs or otherwise fail to adhere to our projected development goals in the timeframes we expect (or within the timeframes expected by analysts or investors), our business, financial condition and results of operations may be harmed and the market price of our common stock and other securities may decline. For example, in June 2023, the contract manufacturer responsible for the production of clofazimine inhalation solution, the investigational product we are developing as MNKD-101, experienced a fire in its manufacturing facility in Germany. As a result of the incident, we estimate the production of clinical supplies of MNKD-101 will be delayed for three to six months, which may impact the initiation of a Phase 2/3 clinical study of MNKD-101 planned for later in 2023. While we are currently evaluating several mitigation strategies, we cannot predict the extent to which such delay will negatively impact our business, financial condition and results of operations. In addition, we may be delayed or prevented from generating revenues from milestone or other payments that depend on our ability to achieve any milestone obligations specified in an out-licensing arrangement.

The long-term safety and efficacy of approved products may differ from clinical studies, which could negatively impact sales and could lead to reputational harm or other negative effects.

The effects of approved therapeutic products over terms longer than the clinical studies or in much larger populations may not be consistent with earlier clinical results. If long-term use of an approved therapeutic product results in adverse health effects or reduced efficacy or both, the FDA or other regulatory agencies may terminate our or any marketing or collaboration partner's ability to market and sell the product, may narrow the approved indications for use or otherwise require restrictive product labeling or marketing, or may require further clinical studies, which may be time-consuming and expensive and may not produce favorable results.

V-Go received pre-market clearance in 2010 under Section 510(k) of the U.S. Federal Food, Drug, and Cosmetic Act, or FDCA. This process typically requires the submission of less supporting documentation than other FDA approval processes and does not always require long-term clinical studies. As a result, we currently lack significant published long-term clinical data supporting the safety and efficacy of V-Go and the benefits it offers that might have been generated in connection with other approval processes. For these reasons, adults who require insulin and their healthcare providers may be slower to adopt or recommend V-Go, we may not have comparative data that our competitors have or are generating, and third-party payers may not be willing to provide coverage or reimbursement for V-Go. Further, future studies or clinical experience may indicate that treatment with V-Go is not superior to treatment with competitive products. Such results could slow the adoption of V-Go and significantly reduce our sales, which could prevent us from achieving our forecasted sales targets or achieving or sustaining profitability. Moreover, if future results and experience indicate that V-Go causes unexpected or serious complications or other unforeseen negative effects, we could be subject to mandatory product recalls, suspension or withdrawal of FDA clearance or approval, significant legal liability or harm to our business reputation.

We may not realize the benefit of our recent acquisition of V-Go or any future acquisition or strategic transaction; we may be unable to successfully integrate new products or businesses we may acquire.*

We periodically evaluate and pursue acquisition of therapeutic products. We completed the acquisition of V-Go in May 2022 and it remains to be seen whether the acquisition will further our business strategy as anticipated or generate significant revenues. Moreover, the integration of any acquired business, product or other assets into our company may be complex and time-consuming and, if such businesses, products or assets are not successfully integrated, we may not achieve the anticipated benefits, cost-savings or growth opportunities. Potential difficulties that may be encountered in the integration process include the following:

- unanticipated liabilities related to acquired assets, companies or joint ventures;
- integrating personnel, operations and systems, while maintaining focus on producing and delivering consistent, high quality products;
- coordinating geographically dispersed organizations;
- diversion of management time and focus from operating our business to management of strategic alliances or joint ventures or acquisition integration challenges;

- retention of key employees;
- increases in our expenses and reductions in our cash available for operations and other uses;
- retaining existing customers and attracting new customers;
- managing inefficiencies associated with integrating the operations of our company; and
- possible write-offs or impairment charges relating to acquired assets, businesses or joint ventures.

Furthermore, these acquisitions and other arrangements, even if successfully integrated, may fail to further our business strategy as anticipated, expose us to increased competition or challenges with respect to our products or geographic markets, and expose us to additional liabilities associated with an acquired business, product, technology or other asset or arrangement. Any one of these challenges or risks could impair our ability to realize any benefit from our acquisitions or arrangements after we have expended resources on them.

Future acquisitions or dispositions could also result in potentially dilutive issuances of our equity securities, the incurrence of debt, contingent liabilities or amortization expenses or write-offs of goodwill, any of which could harm our financial condition.

Our products and product candidates may be rendered obsolete by rapid technological change.

The rapid rate of scientific discoveries and technological changes could result in our approved products or one or more of our product candidates becoming obsolete or noncompetitive. Our competitors may develop or introduce new products that render our technology or products less competitive, uneconomical or obsolete. Our future success may depend not only on our ability to develop our product candidates, but also our ability to improve them in order to keep pace with emerging industry developments. We cannot assure you that we will be able to do so.

We also expect to face competition from universities and other non-profit research organizations. These institutions carry out a significant amount of research and development in various areas of unmet medical need. These institutions are becoming increasingly aware of the commercial value of their findings and are more active in seeking patent and other proprietary rights as well as licensing revenues.

Reports of side effects or safety concerns in related technology fields or in other companies' clinical studies could delay or prevent us from obtaining regulatory approval for our product candidates or negatively impact public perception of our approved products.

There are a number of clinical studies being conducted by other pharmaceutical companies involving compounds similar to, or potentially competitive with, our product candidates. Adverse results reported by these other companies in their clinical studies or by companies that use our proprietary formulation and inhaler technologies could delay or prevent us from obtaining regulatory approval, may subject our products to class warnings in their labels or negatively impact public perception of our product candidates, which could harm our business, financial condition and results of operations and cause the market price of our common stock and other securities to decline.

If product liability claims are brought against us, we may incur significant liabilities and suffer damage to our reputation.

The testing, manufacturing, marketing and sales of our products and any clinical testing of our product candidates expose us to potential product liability claims. A product liability claim may result in substantial judgments as well as consume significant financial and management resources and result in adverse publicity, decreased demand for a product, injury to our reputation, withdrawal of clinical studies volunteers and loss of revenues. We currently carry worldwide product liability insurance in the amount of \$10.0 million as well as an errors and omissions policy in the amount of \$1.0 million. Our insurance coverage may not be adequate to satisfy any liability that may arise, and because insurance coverage in our industry can be very expensive and difficult to obtain, we cannot assure you that we will seek to obtain, or be able to obtain if desired, sufficient additional coverage. If losses from such claims exceed our liability insurance coverage, we may incur substantial liabilities that we may not have the resources to pay. If we are required to pay a product liability claim our business, financial condition and results of operations would be harmed and the market price of our common stock and other securities may decline.

If we lose any key employees or scientific advisors, our operations and our ability to execute our business strategy could be materially harmed.

We face intense competition for qualified employees among companies in the biotechnology and biopharmaceutical industries. Our success depends upon our ability to attract, retain and motivate highly skilled employees. We may be unable to attract and retain these individuals on acceptable terms, if at all. In addition, we may be required to expand our workforce. These activities will require the addition of new personnel, including management, and the development of additional expertise by existing personnel, and we cannot assure you that we will be able to attract or retain any such new personnel on acceptable terms, if at all.

The loss of the services of any principal member of our management, commercial and scientific staff could significantly delay or prevent the achievement of our scientific and business objectives. All of our employees are “at will” and we currently do not have employment agreements with any of the principal members of our management, commercial or scientific staff, and we do not have key person life insurance to cover the loss of any of these individuals. Replacing key employees may be difficult and time-consuming because of the limited number of individuals in our industry with the skills and experience required to develop, gain regulatory approval of and commercialize products successfully.

We have relationships with scientific advisors at academic and other institutions to conduct research or assist us in formulating our research, development or clinical strategy. These scientific advisors are not our employees and may have commitments to, and other obligations with, other entities that may limit their availability to us. We have limited control over the activities of these scientific advisors and can generally expect these individuals to devote only limited time to our activities. Failure of any of these persons to devote sufficient time and resources to our programs could harm our business. In addition, these advisors are not prohibited from, and may have arrangements with, other companies to assist those companies in developing technologies that may compete with our products.

If our internal controls over financial reporting are not considered effective, our business, financial condition and market price of our common stock and other securities could be adversely affected.

Section 404 of the Sarbanes-Oxley Act of 2002 requires us to evaluate the effectiveness of our internal controls over financial reporting as of the end of each fiscal year, and to include a management report assessing the effectiveness of our internal controls over financial reporting in our annual report on Form 10-K for that fiscal year.

Our management, including our Chief Executive Officer and our Chief Financial Officer, does not expect that our internal controls over financial reporting will prevent all errors and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system’s objectives will be met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud involving a company have been, or will be, detected. The design of any system of controls is based in part on certain assumptions about the likelihood of future events, and we cannot assure you that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions or deterioration in the degree of compliance with policies or procedures. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected. A material weakness in our internal controls has been identified in the past, and we cannot assure you that we or our independent registered public accounting firm will not identify a material weakness in our internal controls in the future. A material weakness in our internal controls over financial reporting would require management and our independent registered public accounting firm to evaluate our internal controls as ineffective. If our internal controls over financial reporting are not considered effective, we may experience a loss of public confidence, which could have an adverse effect on our business, financial condition and the market price of our common stock and other securities.

Changes or modifications in financial accounting standards may harm our results of operations.

From time to time, the Financial Accounting Standards Board (“FASB”), either alone or jointly with other organizations, promulgates new accounting principles that could have an adverse impact on our financial position, results of operations and presentation or classification of cash flows. New pronouncements and varying interpretations of pronouncements have occurred with frequency in the past and are expected to occur again in the future and as a result we may be required to make changes in our accounting policies. Any difficulties in adopting or implementing new accounting standards, and updating or modifying our internal controls as needed on a timely basis, could result in our failure to meet our financial reporting obligations, which could result in regulatory discipline and harm investors’ confidence in us. Finally, if we were to change our critical accounting estimates, including those related to the recognition of collaboration revenue and other revenue sources, our operating results could be significantly affected.

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

New income, sales, use or other tax laws, statutes, rules, regulations or ordinances could be enacted at any time, which could adversely affect our business operations and financial performance. Further, existing tax laws, statutes, rules, regulations or ordinances could be interpreted, changed, modified or applied adversely to us. For example, the Tax Cuts and Jobs Act of 2017 (the “Tax Act”), the Coronavirus Aid, Relief, and Economic Security Act and the IRA enacted many significant changes to the U.S. tax laws. Further guidance from the Internal Revenue Service and other tax authorities with respect to such legislation may affect us, and certain aspects of such legislation could be repealed or modified in future legislation. In addition, it is uncertain if and to what extent various states will conform to federal tax laws. Future tax reform legislation could have a material impact on the value of our deferred tax assets and could increase our future U.S. tax expense.

Effective January 1, 2022, the Tax Act eliminated the option to deduct research and development expenses for tax purposes in the year incurred and requires taxpayers to capitalize and subsequently amortize such expenses over five years for research activities conducted

in the United States and over 15 years for research activities conducted outside the United States. Unless the United States Department of the Treasury issues regulations that narrow the application of this provision to a smaller subset of our research and development expenses or the provision is deferred, modified, or repealed by Congress, it could harm our future operating results by effectively increasing our future tax obligations. The actual impact of this provision will depend on multiple factors, including the amount of research and development expenses we will incur, whether we achieve sufficient income to fully utilize such deductions and whether we conduct our research and development activities inside or outside the United States.

Our ability to use net operating losses to offset future taxable income may be subject to limitations.*

As of December 31, 2022, the Company had federal and state net operating loss carryforwards of approximately \$2.2 billion and \$1.7 billion available, respectively, to reduce future taxable income. \$499.6 million of the federal losses do not expire and the remaining federal losses have started expiring, beginning in the current year through various future dates.

Pursuant to Internal Revenue Code Sections 382 and 383, annual use of the Company's federal and California net operating loss and research and development credit carryforwards may be limited in the event a cumulative change in ownership of more than 50% occurs within a three-year period. As a result of the Company's initial public offering, an ownership change within the meaning of Section 382 occurred in August 2004. As a result, federal net operating loss and credit carryforwards of approximately \$105.8 million are subject to an annual use limitation of approximately \$13.0 million. The annual limitation is cumulative and therefore, if not fully utilized in a year can be utilized in future years in addition to the Section 382 limitation for those years. We have completed a Section 382 analysis beginning from the date of our initial public offering through December 31, 2022, to determine whether additional limitations apply to the net operating loss carryforwards and other tax attributes, and no additional changes in ownership that met Section 382 study ownership change threshold has been identified through December 31, 2022. There is a risk that changes in ownership may occur in tax years after December 31, 2022. If a change in ownership were to occur, our net operating loss carryforwards and other tax attributes could be further limited or restricted. If limited, the related asset would be removed from the deferred tax asset schedule with a corresponding reduction in the valuation allowance. Due to the existence of the valuation allowance, limitations created by future ownership changes, if any, related to the Company's operations in the U.S. will not impact the Company's effective tax rate.

In addition, at the state level, there may be periods during which the use of net operating loss carryforwards is suspended or otherwise limited, which could accelerate or permanently increase state taxes owed. As a result, if we earn net taxable income, we may be unable to use all or a material portion of our net operating loss carryforwards and other tax attributes, which could potentially result in increased future tax liability to us and adversely affect our future cash flows.

Tax authorities may disagree with our positions and conclusions regarding certain tax positions, resulting in unanticipated costs, taxes or non-realization of expected benefits.

A tax authority may disagree with tax positions that we have taken, which could result in increased tax liabilities. For example, the U.S. Internal Revenue Service or another tax authority could challenge our allocation of income by tax jurisdiction and the amounts paid between our affiliated companies pursuant to our intercompany arrangements and transfer pricing policies, including amounts paid with respect to our intellectual property development. Similarly, a tax authority could assert that we are subject to tax in a jurisdiction where we believe we have not established a taxable nexus, often referred to as a "permanent establishment" under international tax treaties, and such an assertion, if successful, could increase our expected tax liability in one or more jurisdictions. A tax authority may take the position that material income tax liabilities, interest and penalties are payable by us, in which case, we expect that we might contest such assessment. Contesting such an assessment may be lengthy and costly and if we were unsuccessful in disputing the assessment, the implications could increase our anticipated effective tax rate, where applicable.

We may undertake internal restructuring activities in the future that could result in disruptions to our business or otherwise materially harm our results of operations or financial condition.

From time to time, we may undertake internal restructuring activities as we continue to evaluate and attempt to optimize our cost and operating structure in light of developments in our business strategy and long-term operating plans. These activities may result in write-offs or other restructuring charges. There can be no assurance that any restructuring activities that we undertake will achieve the cost savings, operating efficiencies or other benefits that we may initially expect. Restructuring activities may also result in a loss of continuity, accumulated knowledge and inefficiency during transitional periods and thereafter. In addition, internal restructurings can require a significant amount of time and focus from management and other employees, which may divert attention from commercial operations. If we undertake any internal restructuring activities and fail to achieve some or all of the expected benefits therefrom, our business, results of operations and financial condition could be materially and adversely affected.

Our operations might be interrupted by the occurrence of a natural disaster or other catastrophic event.

At least for the foreseeable future, we expect that our manufacturing facility in Connecticut will be the sole location for the manufacturing of Afrezza and Tyvaso DPI. Similarly, our contract manufacturer in Southern China is the only location for the assembly of V-Go. Additional contract manufacturers in China perform release testing, sterilization, inspection and packaging

functions. These facilities and the specialized manufacturing equipment we use at them would be costly to replace and could require substantial lead-time to repair or replace. We depend on our facilities and on collaborators, contractors and vendors for the continued operation of our business. Natural disasters or other catastrophic events, including interruptions in the supply of natural resources, political and governmental changes, severe weather conditions, public health pandemics or epidemics, wars, conflicts (including the current Russia-Ukraine conflict), wildfires and other fires, explosions, actions of animal rights activists, terrorist attacks, volcanic eruptions, earthquakes and wars could disrupt our operations or those of our collaborators, contractors and vendors. We might suffer losses as a result of business interruptions that exceed the coverage available under our and our contractors' insurance policies or for which we or our contractors do not have coverage. For example, we are not insured against a terrorist attack. Any natural disaster or catastrophic event could have a significant negative impact on our operations and financial results. Moreover, any such event could delay our research and development programs or cause interruptions in our commercialization of our products.

We deal with hazardous materials and must comply with environmental laws and regulations, which can be expensive and restrict how we do business.

Our research and development work involves the controlled storage and use of hazardous materials, including chemical and biological materials. Our operations also produce hazardous waste products. We are subject to federal, state and local laws and regulations (i) governing how we use, manufacture, store, handle and dispose of these materials (ii) imposing liability for costs of cleaning up, and damages to natural resources from past spills, waste disposals on and off-site, or other releases of hazardous materials or regulated substances, and (iii) regulating workplace safety. Moreover, the risk of accidental contamination or injury from hazardous materials cannot be completely eliminated, and in the event of an accident, we could be held liable for any damages that may result, and any liability could fall outside the coverage or exceed the limits of our insurance. Currently, our general liability policy provides coverage up to \$1.0 million per occurrence and \$2.0 million in the aggregate and is supplemented by an umbrella policy that provides a further \$20.0 million of coverage; however, our insurance policy excludes pollution liability coverage and we do not carry a separate hazardous materials policy. In addition, we could be required to incur significant costs to comply with environmental laws and regulations in the future. Finally, current or future environmental laws and regulations may impair our research, development or production efforts or have an adverse impact on our business, results of operations and financial condition.

When we purchased our facility in Connecticut in 2001, a soil and groundwater investigation and remediation was being conducted by a former site operator (a "responsible party") under the oversight of the Connecticut Department of Energy & Environmental Protection (formerly the Connecticut Department of Environmental Protection), which investigation and remediation is ongoing. The former site operator and responsible party will make further filings necessary to achieve closure for the environmental investigation and remediation it has conducted at the site, and has agreed to indemnify us for any future costs and expenses we may incur that are directly related to its prior operations at the facility. If we are unable to collect these future costs and expenses, if any, from the responsible party, our business, financial condition and results of operations may be harmed. When we sold a portion of the property upon which our facility is located to the entity that is now our landlord, we became an additional responsible party for any environmental investigation and remediation on that portion of the property, including with respect to investigation or remediation that may be required as a result of our activities since 2001. To date, we have not identified any material environmental investigation or remediation activities that we are required to perform.

If our information technology systems or data, or those of third parties upon which we rely, are or were compromised, we could experience adverse consequences resulting from such compromise, including but not limited to regulatory investigations or actions; litigation; fines and penalties; disruptions of our business operations; reputational harm; loss of revenue or profits; loss of customers or sales; and other adverse consequences.*

We, and third parties acting on our behalf, employ and are increasingly dependent upon information technology systems, infrastructure, applications, websites and other resources. Our business requires collecting, receiving, manipulating, analyzing, storing, processing, generating, using, disclosing, protecting, securing, transmitting, sharing, disposing of, and making accessible (collectively "processing") large amounts of data, including proprietary, confidential and sensitive data (such as personal or health-related data), intellectual property, and trade secrets (collectively, "sensitive information").

Cyber-attacks, malicious internet-based activity, online and offline fraud and other similar activities threaten the confidentiality, integrity, and availability of our sensitive information and information technology systems, and those of the third parties upon which we rely. Such threats are prevalent and continue to increase and are increasingly difficult to detect, and come from a variety of sources, including traditional computer "hackers," threat actors "hacktivists," organized criminal threat actors, personnel (such as through theft or misuse), sophisticated nation-states, and nation-state-supported actors. Some actors now engage and are expected to continue to engage in cyber-attacks, including without limitation nation-state actors, for geopolitical reasons and in conjunction with military conflicts and defense activities. We and the third parties upon which we rely may be subject to a variety of evolving threats, including but not limited to social-engineering attacks (including through deep fakes, which may be increasingly more difficult to identify as fake, and phishing attacks), malicious code (such as viruses and worms), malware (including as a result of advanced persistent threat intrusions), denial-of-service attacks (such as credential stuffing), credentials harvesting, personnel misconduct or error, ransomware attacks, supply-chain attacks, software bugs, server malfunctions, software or hardware failures, loss of data or other information technology assets, adware, telecommunications failures, earthquakes, fires, floods, and other similar threats. Ransomware attacks, including by organized criminal threat actors, nation-states, and nation-state-supported actors, are becoming increasingly prevalent

and severe and can lead to significant interruptions in our operations, loss of data and income, reputational harm, and diversion of funds. Extortion payments may alleviate the negative impact of a ransomware attack, but we may be unwilling or unable to make such payments due to, for example, applicable laws or regulations prohibiting such payments. During times of war and other major conflicts, we and the third parties upon which we rely may be vulnerable to a heightened risk of these attacks, including retaliatory cyber-attacks, that could materially disrupt our systems and operations, supply chain, and ability to produce, sell and distribute our goods and services. Some of our workforce works remotely, which also poses increased risks to our information technology systems and data, as employees working from home, in transit or in public locations, utilize network connections, computers and devices outside our premises or network. Future or past business transactions (such as acquisitions or integrations) could expose us to additional cybersecurity risks and vulnerabilities, as our systems could be negatively affected by vulnerabilities present in acquired or integrated entities' systems and technologies. Furthermore, we may discover security issues that were not found during due diligence of such acquired or integrated entities, and it may be difficult to integrate companies into our information technology environment and security program.

We may rely on third-party service providers and technologies to operate critical business systems to process sensitive information in a variety of contexts, including, without limitation, cloud-based infrastructure, data center facilities, encryption and authentication technology, employee email, and other functions. We may also rely on third-party service providers to provide other products or services, or otherwise to operate our business. For example, we rely on an enterprise software system to operate and manage our business. Our business, including our ability to manufacture drug products and conduct clinical trials, therefore depends on the continuous, effective, reliable and secure operation of our information technology resources and those of third parties acting on our behalf, including computer hardware, software, networks, Internet servers and related infrastructure. Our ability to monitor these third parties' information security practices is limited, and these third parties may not have adequate information security measures in place. If our third-party service providers experience a security incident or other interruption, we could experience adverse consequences. In particular, supply-chain attacks have increased in frequency and severity, and we cannot guarantee that third parties and infrastructure in our supply chain or our third-party partners' supply chains have not been compromised or that they do not contain exploitable defects or bugs that could result in a breach of or disruption to our information technology systems (including our products) or the third-party information technology systems that support us and our services. While we may be entitled to damages if our third-party service providers fail to satisfy their privacy or security-related obligations to us, any award may be insufficient to cover our damages, or we may be unable to recover such award.

Any of the previously identified or similar threats could cause a security incident or other interruption that could result in unauthorized, unlawful, or accidental acquisition, modification, destruction, loss, alteration, encryption, disclosure of, or access to our sensitive information or our information technology systems, or those of the third parties upon whom we rely. A security incident or other interruption could disrupt our ability (and that of third parties upon whom we rely) to provide our products. We may expend significant resources or modify our business activities (including our clinical trial activities) to try to protect against security incidents. Certain data privacy and security obligations may require us to implement and maintain specific security measures, industry-standards or reasonable security measures to protect our information technology systems and sensitive information. While we have implemented security measures designed to protect against security incidents, there can be no assurance that these measures will be effective. We take steps to detect and remediate vulnerabilities, but we may not be able to detect and remediate all vulnerabilities because the threats and techniques used to exploit the vulnerability change frequently and are often sophisticated in nature. Therefore, such vulnerabilities could be exploited but may not be detected until after a security incident has occurred. These vulnerabilities pose material risks to our business. Further, we may experience delays in developing and deploying remedial measures designed to address any such identified vulnerabilities. We have in the past experienced security incident(s). For example, like many companies, we use SolarWinds to help manage our information technology systems. A cyber-attack on SolarWinds was discovered in December 2020 and widely exploited by threat actors. Upon learning of this vulnerability, we applied the software patch provided by SolarWinds and remediated the incident. The incident did not appear to have any negative impact on our operations or the sensitive information we may process. In addition, a ransomware attack on Ultimate Kronos Group's ("UKG") Kronos Private Cloud service was discovered in December 2021. At the time, we used UKG Pro, a product offered through UKG that is not in the Kronos Private Cloud, for human capital management. UKG is not aware of an impact on UKG Pro and the incident did not appear to have any negative impact on our operations or the sensitive information we may process. Thus, despite our efforts to identify and remediate vulnerabilities, if any, in our information technology systems, our efforts may not be successful.

Applicable data privacy and security obligations may require us to notify relevant stakeholders of security incidents. Such disclosures are costly, and the disclosures or the failure to comply with such requirements could lead to adverse consequences. If we (or a third party upon whom we rely) experience a security incident or are perceived to have experienced a security incident, we may experience adverse consequences. These consequences may include: government enforcement actions (for example, investigations, fines, penalties, audits, and inspections); additional reporting requirements and/or oversight; restrictions on processing sensitive information (including personal data); litigation (including class claims); indemnification obligations; negative publicity; reputational harm; monetary fund diversions; interruptions in our operations (including availability of data); financial loss; and other similar harms. Security incidents and attendant consequences may cause customers to stop using our products, deter new customers from using our products, and negatively impact our ability to grow and operate our business. Additionally, our contracts may not contain limitations of liability, and even where they do, there can be no assurance that limitations of liability in our contracts are sufficient to protect us from liabilities, damages, or claims related to our data privacy and security obligations. We cannot be sure that our cybersecurity

insurance coverage will be adequate or sufficient to protect us from or to mitigate liabilities arising out of our privacy and security practices, that such coverage will continue to be available on commercially reasonable terms or at all, or that such coverage will pay future claims.

In addition to experiencing a security incident, third parties may gather, collect, or infer sensitive information about us from public sources, data brokers, or other means that reveals competitively sensitive details about our organization and could be used to undermine our competitive advantage or market position. Sensitive information of the Company or our customers could also be leaked, disclosed, or revealed as a result of or in connection with our employee's, personnel's, or vendor's use of generative AI technologies.

Changes in funding for the FDA, the SEC and other government agencies could hinder their ability to hire and retain key leadership and other personnel, prevent new products and services from being developed or commercialized in a timely manner or otherwise prevent those agencies from performing normal functions on which the operation of our business may rely, which could negatively impact our business.

The ability of the FDA to review and approve new products can be affected by a variety of factors, including government budget and funding levels, ability to hire and retain key personnel and accept payment of user fees, and statutory, regulatory, and policy changes. Average review times at the agency have fluctuated in recent years as a result. In addition, government funding of the SEC and other government agencies on which our operations may rely, including those that fund research and development activities is subject to the political process, which is inherently fluid and unpredictable.

Disruptions at the FDA and other agencies may also slow the time necessary for new drugs to be reviewed and/or approved by necessary government agencies, which would adversely affect our business. For example, over the last several years, the U.S. government has shut down several times and certain regulatory agencies, such as the FDA and the SEC, have had to furlough critical FDA, SEC and other government employees and stop critical activities. If a prolonged government shutdown occurs, it could significantly impact the ability of the FDA to timely review and process our regulatory submissions, which could have a material adverse effect on our business. Further, future government shutdowns could impact our ability to access the public markets and obtain necessary capital in order to properly capitalize and continue our operations.

Adverse developments affecting the financial services industry could adversely affect our current and projected business operations and our financial condition and results of operations.*

Adverse developments that affect financial institutions, such as events involving liquidity that are rumored or actual, have in the past and may in the future lead to bank failures and market-wide liquidity problems. For example, on March 10, 2023, Silicon Valley Bank ("SVB") was closed by the California Department of Financial Protection and Innovation, which appointed the Federal Deposit Insurance Corporation ("FDIC") as receiver. Similarly, on March 12, 2023, Signature Bank and Silvergate Capital Corp. were each swept into receivership. In addition, on May 1, 2023, the FDIC seized First Republic Bank and sold its assets to JPMorgan Chase & Co. While the U.S. Department of Treasury, FDIC and Federal Reserve Board have implemented a program to provide up to \$25 billion of loans to financial institutions secured by certain of such government securities held by financial institutions to mitigate the risk of potential losses on the sale of such instruments, widespread demands for customer withdrawals or other liquidity needs of financial institutions for immediate liquidity may exceed the capacity of such program, there is no guarantee that such programs will be sufficient. Additionally, it is uncertain whether the U.S. Department of Treasury, FDIC and Federal Reserve Board will provide access to uninsured funds in the future in the event of the closure of other banks or financial institutions, or that they would do so in a timely fashion.

While we have not experienced any adverse impact to our liquidity or to our current and projected business operations, financial condition or results of operations as a result of the matters relating to SVB, Signature Bank, Silvergate Capital Corp and First Republic Bank, uncertainty remains over liquidity concerns in the broader financial services industry, and our business, our business partners or industry as a whole may be adversely impacted in ways that we cannot predict at this time.

Although we assess our banking relationships as we believe necessary or appropriate, our access to cash in amounts adequate to finance or capitalize our current and projected future business operations could be significantly impaired by factors that affect the financial institutions with which we have banking relationships. These factors could include, among others, events such as liquidity constraints or failures, the ability to perform obligations under various types of financial, credit or liquidity agreements or arrangements, disruptions or instability in the financial services industry or financial markets, or concerns or negative expectations about the prospects for companies in the financial services industry. These factors could also include factors involving financial markets or the financial services industry generally. The results of events or concerns that involve one or more of these factors could include a variety of material and adverse impacts on our current and projected business operations and our financial condition and results of operations. These could include, but may not be limited to, delayed access to deposits or other financial assets or the uninsured loss of deposits or other financial assets; or termination of cash management arrangements and/or delays in accessing or actual loss of funds subject to cash management arrangements.

In addition, widespread investor concerns regarding the U.S. or international financial systems could result in less favorable commercial financing terms, including higher interest rates or costs and tighter financial and operating covenants, or systemic limitations on access to credit and liquidity sources, thereby making it more difficult for us to acquire financing on acceptable terms or at all. Any decline in available funding or access to our cash and liquidity resources could, among other risks, adversely impact our ability to meet our operating expenses, financial obligations or fulfill our other obligations, result in breaches of our financial and/or contractual obligations or result in violations of federal or state wage and hour laws. Any of these impacts, or any other impacts resulting from the factors described above or other related or similar factors not described above, could have material adverse impacts on our liquidity and our current and/or projected business operations and financial condition and results of operations.

We maintain our cash at financial institutions, often in balances that exceed federally insured limits.*

We maintain the majority of our cash and cash equivalents in accounts at banking institutions in the United States that we believe are of high quality. Cash held in these accounts often exceed the FDIC insurance limits. If such banking institutions were to fail, we could lose all or a portion of amounts held in excess of such insurance limitations. As noted above, the FDIC recently took control of SVB, Signature Bank, Silvergate Capital Corp and First Republic Bank. In the event of failure of any of the financial institutions where we maintain our cash and cash equivalents, there can be no assurance that we would be able to access uninsured funds in a timely manner or at all. Any inability to access or delay in accessing these funds could adversely affect our business and financial position.

RISKS RELATED TO GOVERNMENT REGULATION

Our product candidates must undergo costly and time-consuming rigorous nonclinical and clinical testing and we must obtain regulatory approval prior to the sale and marketing of any product in each jurisdiction. The results of this testing or issues that develop in the review and approval by a regulatory agency may subject us to unanticipated delays or prevent us from marketing any products.

Our research and development activities for product candidates, as well as the manufacturing and marketing of approved products, are subject to regulation, including regulation for safety, efficacy and quality, by the FDA in the United States and comparable authorities in other countries. FDA regulations and the regulations of comparable foreign regulatory authorities are wide-ranging and govern, among other things:

- product design, development, manufacture and testing;
- product labeling;
- product storage and shipping;
- pre-market clearance or approval;
- advertising and promotion; and
- product sales and distribution.

The requirements governing the conduct of clinical studies as well as the manufacturing and marketing of drug products outside the United States vary widely from country to country. Foreign approvals may take longer to obtain than FDA approvals and can require, among other things, additional testing and different clinical study designs. Foreign regulatory approval processes include essentially all of the risks associated with the FDA approval processes. Some of those agencies also must approve prices of the products. Approval of a product by the FDA does not ensure approval of the same product by the health authorities of other countries. In addition, changes in regulatory policy in the United States or in foreign countries for product approval during the period of product development and regulatory agency review of each submitted new application may cause delays or rejections.

Clinical testing can be costly and take many years, and the outcome is uncertain and susceptible to varying interpretations. We cannot be certain if or when regulatory agencies might request additional studies, under what conditions such studies might be requested, or what the size or length of any such studies might be. The clinical studies of our product candidates may not be completed on schedule, regulatory agencies may order us to stop or modify our research, or these agencies may not ultimately approve any of our product candidates for commercial sale. The data collected from our clinical studies may not be sufficient to support regulatory approval of our product candidates. Even if we believe the data collected from our clinical studies are sufficient, regulatory agencies have substantial discretion in the approval process and may disagree with our interpretation of the data. Our failure to adequately demonstrate the safety and efficacy of any of our product candidates would delay or prevent regulatory approval of our product candidates, which could prevent us from achieving profitability.

Questions that have been raised about the safety of marketed drugs generally, including pertaining to the lack of adequate labeling, may result in increased cautiousness by regulatory agencies in reviewing new drugs based on safety, efficacy, or other regulatory considerations and may result in significant delays in obtaining regulatory approvals. Such regulatory considerations may also result in the imposition of more restrictive drug labeling or marketing requirements as conditions of approval, which may significantly affect the marketability of our drug products.

If we do not comply with regulatory requirements at any stage, whether before or after marketing approval is obtained, we may be fined or forced to remove a product from the market, subject to criminal prosecution, or experience other adverse consequences, including restrictions or delays in obtaining regulatory marketing approval.

Even if we comply with regulatory requirements, we may not be able to obtain the labeling claims necessary or desirable for product promotion. We may also be required to undertake post-marketing studies.

In addition, if we or other parties identify adverse effects after any of our products are on the market, or if manufacturing problems occur, regulatory approval may be withdrawn and a reformulation of our products, additional clinical studies, changes in labeling of, or indications of use for, our products and/or additional marketing applications may be required. If we encounter any of the foregoing problems, our business, financial condition and results of operations will be harmed and the market price of our common stock and other securities may decline.

We are subject to stringent, ongoing government regulation.*

The FDA and comparable foreign regulatory authorities subject any approved therapeutic product to extensive and ongoing regulatory requirements concerning the manufacturing processes, labeling, packaging, distribution, adverse event reporting, storage, advertising, promotion, import, export and recordkeeping. These requirements include submissions of safety and other post-marketing information and reports, registration, as well as continued compliance with cGMPs and GCP requirements for any clinical trials that we conduct post-approval. Later discovery of previously unknown problems, including adverse events of unanticipated severity or frequency, or with our third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:

- restrictions on the marketing or manufacturing of our product candidates, withdrawal of the product from the market, or voluntary or mandatory product recalls;
- revisions to the approved labeling to add new safety information;
- fines, warning letters or holds on clinical trials;
- refusal by the FDA to approve pending applications or supplements to approved applications filed by us or suspension or revocation of approvals;
- product seizure or detention, or refusal to permit the import or export of our product candidates; and
- injunctions or the imposition of civil or criminal penalties.

We also are required to register our establishments and list our products with the FDA and certain state agencies. We and any third-party manufacturers or suppliers must continually adhere to federal regulations setting forth cGMP (for drugs) and QSR (for medical devices), and their foreign equivalents, which are enforced by the FDA and other national regulatory bodies through their facilities inspection programs. In complying with cGMP and foreign regulatory requirements, we and any of our third-party manufacturers or suppliers will be obligated to expend time, money and effort in production, record-keeping and quality control to ensure that our products meet applicable specifications and other requirements. QSR requirements also impose extensive testing, control and documentation requirements. State regulatory agencies and the regulatory agencies of other countries have similar requirements. In addition, we will be required to comply with regulatory requirements of the FDA, state regulatory agencies and the regulatory agencies of other countries concerning the reporting of adverse events and device malfunctions, corrections and removals (e.g., recalls), promotion and advertising and general prohibitions against the manufacture and distribution of adulterated and misbranded devices. Failure to comply with these regulatory requirements could result in significant civil fines, product seizures, injunctions and/or criminal prosecution of responsible individuals and us. Any such actions would have a material adverse effect on our business, financial condition and results of operations.

As part of the approval of Afrezza, the FDA required us to conduct certain additional clinical studies of Afrezza. One of these studies, a Phase 3 clinical trial to evaluate the safety and efficacy of Afrezza in 4-17 year-old children and adolescents, is ongoing. The other required study is a long-term safety study that was originally intended to compare the incidence of pulmonary malignancy observed with Afrezza to that observed in a standard of care control group. We have an ongoing dialogue with the FDA regarding the agency's current interest in the long-term safety of Afrezza and an appropriate study design to address any concerns. To date, we have not commenced a long-term safety study or budgeted any amount for it, but such a study in its original design would be anticipated to require substantial capital resources that we may not be able to obtain.

The FDA and other regulatory authorities impose significant restrictions on approved products through regulations on advertising, promotional and distribution activities. This oversight encompasses, but is not limited to, direct-to-consumer advertising, healthcare provider-directed advertising and promotion, sales representative communications to healthcare professionals, promotional programming and promotional activities involving the Internet. Regulatory authorities may also review industry-sponsored scientific and educational activities that make representations regarding product safety or efficacy in a promotional context. Prescription drugs may be promoted only for the approved indications in accordance with the approved label. The FDA and other regulatory authorities

may take enforcement action against a company for promoting unapproved uses of a product or for other violations of its advertising and labeling laws and regulations. However, physicians may, in their independent medical judgment, prescribe legally available products for off-label uses. The FDA does not regulate the behavior of physicians in their choice of treatments, but the FDA does restrict manufacturer's communications on the subject of off-label use of their products. Enforcement action may include product seizures, injunctions, significant civil or criminal penalties or regulatory letters, which may require corrective advertising or other corrective communications to healthcare professionals. Failure to comply with such regulations also can result in adverse publicity or increased scrutiny of company activities by the U.S. Congress or other legislators. Certain states have also adopted regulations and reporting requirements surrounding the promotion of pharmaceuticals. Failure to comply with state requirements may affect our ability to promote or sell our products in certain states.

The FDA's and other regulatory authorities' policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates, delay the submission or review of an application or require additional expenditures by us. In addition, interested parties (such as individuals, advocacy groups and competing pharmaceutical companies) can file a citizen petition with the FDA to request policy change or some form of administrative action on the FDA's part, including with respect to an NDA. For example, in July 2021, a third party submitted a citizen petition to the FDA requesting that the FDA refuse to approve Tyvaso DPI, and/or impose additional requirements in order to approve the product. This prompted the FDA to request additional information concerning Tyvaso DPI prior to granting approval in May 2022. If successful, a citizen petition can significantly delay, or even prevent, the approval of a drug product.

We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. We also cannot be sure that actions by foreign regulatory bodies pertaining to the safety of drugs or medical devices will not adversely affect our operations. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may be denied marketing approval or lose any marketing approval that we have already obtained. There can be no assurance that we will be able to obtain necessary regulatory clearances or approvals on a timely basis, if at all, for any of our product candidates under development, and delays in receipt or failure to receive such clearances or approvals, the loss of previously received clearances or approvals, or failure to comply with existing or future regulatory requirements could have a material adverse effect on our business and results of operations.

Healthcare legislation may make it more difficult to receive revenues.

In both the United States and certain foreign jurisdictions, there has been a number of legislative and regulatory proposals in recent years to change the healthcare system in ways that could impact our ability to sell our products profitably. The most recent significant healthcare legislation was the Patient Protection and Affordable Care Act, as amended by the Health Care Education and Reconciliation Act (collectively, the "PPACA"), enacted in March 2010, which substantially changed the way healthcare is financed by both governmental and private insurers and continues to significantly affect the healthcare industry. There have been executive, judicial and congressional challenges to certain provisions of the PPACA, although the constitutionality of the PPACA appears to now be settled. In addition, there have been proposed and enacted health reform initiatives affecting the PPACA. For example, on August 16, 2022, President Biden signed the IRA into law, which among other things, extends enhanced subsidies for individuals purchasing health insurance coverage in PPACA marketplaces through plan year 2025, eliminates the "donut hole" under the Medicare Part D program beginning in 2025 by significantly lowering the beneficiary maximum out-of-pocket cost and through a newly established manufacturer discount program, and caps the out-of-pocket cost of insulin (including Afrezza) at \$35 per month for Medicare recipients beginning in 2023. It is possible that the PPACA will be subject to judicial or Congressional challenges in the future. It is unclear how any such challenges, other litigation, and the healthcare reform measures of the current administration will impact the PPACA.

Recently there has been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products. Specifically, there have been several recent U.S. Presidential executive orders, Congressional inquiries and proposed and enacted legislation designed to, among other things, bring more transparency to drug pricing, reduce the cost of prescription drugs under Medicare, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drugs. These new laws and initiatives may result in additional reductions in Medicare and other healthcare funding, which could have a material adverse effect on our customers and accordingly, our financial operations.

Our future revenues and ability to generate positive cash flow from operations may be affected by the continuing efforts of government and other third-party payers to contain or reduce the costs of healthcare through various means. In the United States, there have been several congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for products. At the federal level, in July 2021, the Biden administration released an executive order, "Promoting Competition in the American Economy," with multiple provisions aimed at prescription drugs. In response to Biden's executive order, on September 9, 2021, the U.S. Department of Health and Human Services ("HHS") released a Comprehensive Plan for Addressing High Drug Prices that outlines principles for drug pricing reform and sets out a variety of potential legislative policies that Congress could pursue as well as potential administrative actions HHS can take to advance these

principles. In addition, the IRA, among other things, (1) directs HHS to negotiate the price of certain single-source drugs and biologics covered under Medicare and (2) imposes rebates under Medicare Part B and Medicare Part D to penalize price increases that outpace inflation. These provisions will take effect progressively starting in fiscal year 2023, although the Medicare drug price negotiation program is currently subject to legal challenges. It is currently unclear how the IRA will be implemented but is likely to have a significant impact on the pharmaceutical industry. Further, the Biden administration released an additional executive order on October 14, 2022, directing HHS to submit a report on how the Center for Medicare and Medicaid Innovation can be further leveraged to test new models for lowering drug costs for Medicare and Medicaid beneficiaries. At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. We expect that there will continue to be a number of federal and state proposals to implement similar and/or additional governmental controls. We cannot be certain what legislative proposals will be adopted or what actions federal, state or private third-party payers may take in response to any drug pricing and reimbursement reform proposals or legislation. Further, to the extent that such reforms have a material adverse effect on our ability to commercialize our products and product candidates under development, our business, financial condition and profitability may be adversely affected.

We expect that PPACA, the IRA, as well as other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and in additional downward pressure on the price that we receive for any approved product, and could seriously harm our future revenues. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private third-party payers. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability, or commercialize our products.

If we or any future partner fails to comply with federal and state healthcare laws, including fraud and abuse and health information laws, we could face substantial penalties and our business, results of operations, financial condition and prospects could be adversely affected.

As a biopharmaceutical company, even though we do not and will not control referrals of healthcare services or bill directly to Medicare, Medicaid or other third-party payers, certain federal and state healthcare laws and regulations, including those pertaining to fraud and abuse and patients' rights, are and will be applicable to our business. The number and scope of these laws, regulations and industry standards are changing, subject to differing applications and interpretations, and may be inconsistent between jurisdictions or in conflict with each other, making compliance difficult. The key laws that may affect our ability to operate include, among others:

- The federal Anti-Kickback Statute (as amended by PPACA, which modified the intent requirement of the federal Anti-Kickback Statute so that a person or entity no longer needs to have actual knowledge of the Statute or specific intent to violate it to have committed a violation), which constrains our business activities, including our marketing practices, educational programs, pricing policies, and relationships with healthcare providers or other entities by prohibiting, among other things, knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, to induce, or in return for, either the referral of an individual or the purchase or recommendation of an item or service reimbursable under a federal healthcare program, such as the Medicare and Medicaid programs;
- Federal civil and criminal false claims laws, including without limitation the False Claims Act, and civil monetary penalties laws, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid, or other federal healthcare programs that are false or fraudulent, and knowingly making, or causing to be made, a false record or statement material to a false or fraudulent claim to avoid, decrease or conceal an obligation to pay money to the federal government, and under PPACA, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal false claims laws;
- The federal Physician Payments Sunshine Act under PPACA, which requires certain manufacturers of drugs, devices, biologics, and medical supplies to report annually to Centers for Medicare & Medicaid Services ("CMS") information related to payments and other transfers of value to physicians (defined to include defined to include doctors, dentists, optometrists, podiatrists and chiropractors), certain other healthcare professionals (such as physician assistants and nurse practitioners), and teaching hospitals, and ownership and investment interests held by physicians and their immediate family members.
- The federal Health Insurance Portability and Accountability Act of 1996 ("HIPAA"), which created new federal criminal statutes that prohibit, among other things, knowingly and willfully executing a scheme to defraud any healthcare benefit program or falsifying, concealing, or covering up a material fact in connection with the delivery of or payment for health care benefits.
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009 ("HITECH"), and their respective implementing regulations, which impose certain requirements relating to the privacy, security and transmission of individually identifiable health information on entities subject to the law, such as certain healthcare

providers, health plans, and healthcare clearinghouses and their respective business associates that perform services for them that involve the creation, use, maintenance or disclosure of, individually identifiable health information as well as their covered subcontractors.

- Other state and foreign law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payer, including commercial insurers, and state and foreign laws governing the privacy and security and other processing of personal data (including health information) in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts; state laws that require pharmaceutical companies to comply with the industry's voluntary compliance guidelines and the applicable compliance guidance promulgated by the federal government that otherwise restricts certain payments that may be made to healthcare providers and entities; state and local laws that require the registration of pharmaceutical sales representatives; and state laws that require drug manufacturers to report information related to payments and other transfer of value to physicians and other healthcare providers and entities, marketing expenditures or drug pricing.

Because of the breadth of these laws and the narrowness of available statutory exceptions and regulatory safe harbors, it is possible that some of our business activities could be subject to challenge under one or more of such laws. With Afrezza approved in Brazil and as we pursue additional international approvals, we will be subject to similar foreign laws and regulations. If we or our operations are found to be in violation of any of the laws described above or any other governmental regulations that apply to us, or any contractual obligations related to the same, we may be subject to governmental enforcement actions, investigations, litigation (including class action lawsuits) and other penalties, including significant civil, criminal and administrative penalties, damages, fines, imprisonment, disgorgement, defense costs, exclusion from U.S. federal or state healthcare programs, additional reporting requirements and/or oversight (including if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws), bans or restrictions on our processing of personal data, indemnity obligations and the curtailment or restructuring of our operations. Any such event or consequence, including penalties, damages, fines, and curtailment or restructuring of our operations, could materially adversely affect our ability to operate our business, including our ability to run clinical trials, and our financial results and harm our reputation. Although compliance programs can help mitigate the risk of investigation and prosecution for violations of these laws, the risks cannot be eliminated. Any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. Moreover, achieving and sustaining compliance with applicable federal and state fraud laws may prove costly.

We are subject to stringent and changing U.S. and foreign laws, regulations, rules, contractual obligations, policies and other obligations related to data privacy and security. Our actual or perceived failure to comply with such obligations could lead to regulatory investigations or actions; litigation (including class claims) and mass arbitration demands; fines and penalties; disruptions of our business operations; reputational harm; loss of revenue or profits; loss of customers or sales; and other adverse business consequences.*

In the ordinary course of business, we process sensitive information (as those terms are defined above). Our data processing activities subject us to numerous data privacy and security obligations, such as various laws, regulations, guidance, industry standards, external and internal privacy and security policies, contractual requirements, and other obligations relating to data privacy and security.

In the United States, federal, state, and local governments have enacted numerous data privacy and security laws, including data breach notification laws, personal data privacy laws, consumer protection laws (e.g., Section 5 of the Federal Trade Commission Act), and other similar laws (e.g., wiretapping laws). For example, HIPAA, as amended by HITECH, imposes specific requirements relating to the privacy, security, and transmission of individually identifiable health information. In addition, the CCPA imposes obligations on covered businesses, including, but not limited to, providing specific disclosures in privacy notices and affording California consumers, business representatives, and employees who are California residents certain rights related to their personal data. The CCPA provides for administrative fines (up to \$7,500 per violation) and allows private litigants affected by certain data breaches to recover significant statutory damages. Although the CCPA exempts some data processed in the context of clinical trials, the CCPA may increase compliance costs and potential liability with respect to other personal data we maintain about California residents. In addition, the California Privacy Rights Act of 2020 ("CPRA"), which became operative January 1, 2023, expanded the CCPA's requirements, including by adding a new right for individuals to correct their personal information and establishing a new California Privacy Protection Agency to implement and enforce the CPRA. Other states also have enacted comprehensive data privacy laws. For example, Virginia passed the Consumer Data Protection Act, and Colorado passed the Colorado Privacy Act, both of which became effective in 2023. While these states, like the CCPA, also exempt some data processed in the context of clinical trials, these developments further complicate compliance efforts, and increase legal risk and compliance costs for us, the third parties upon whom we rely, and our customers. In addition, data privacy and security laws have been proposed at the federal, state, and local levels in recent years, which could further complicate compliance efforts.

Outside the United States, an increasing number of laws, regulations, and industry standards apply to data privacy and security. For example, the General Data Protection Regulation ("GDPR") and, the United Kingdom's GDPR ("UK GDPR"), Brazil's General Data

Protection Law (Lei Geral de Proteção de Dados Pessoais, or “LGPD”) (Law No. 13,709/2018), and Australia’s Privacy Act, impose strict requirements for processing personal data. For example, under the GDPR, companies may face temporary or definitive bans on data processing and other corrective actions; fines of up to 20 million euros under the EU GDPR, 17.5 million pounds sterling under the UK GDPR or, in each case, 4% of annual global revenue, whichever is greater; or private litigation related to the processing of personal data brought by classes of data subjects or consumer protection organizations authorized at law to represent their interests.

Our employees and personnel may use generative artificial intelligence (“AI”) technologies to perform their work, and the disclosure and use of personal information in generative AI technologies is subject to various privacy laws and other privacy obligations. Governments have passed and are likely to pass additional laws regulating generative AI. Our use of this technology could result in additional compliance costs, regulatory investigations and actions, and consumer lawsuits. If we are unable to use generative AI, it could make our business less efficient and result in competitive disadvantages.

In the ordinary course of business, we may transfer personal data from Europe and other jurisdictions to the United States or other countries. Europe and other jurisdictions have enacted laws requiring data to be localized or limiting the transfer of personal data to other countries. In particular, the European Economic Area (EEA) and the United Kingdom (UK) have significantly restricted the transfer of personal data to the United States and other countries whose privacy laws it generally believes are inadequate. Other jurisdictions may adopt similarly stringent interpretations of their data localization and cross-border data transfer laws. Although there are currently various mechanisms that may be used to transfer personal data from the EEA and UK to the United States in compliance with law, such as the EEA and UK’s standard contractual clauses, the UK’s International Data Transfer Agreement / Addendum, and the EU-U.S. Data Privacy Framework (which allows for transfers for relevant U.S.-based organizations who self-certify compliance and participate in the Framework), these mechanisms are subject to legal challenges, and there is no assurance that we can satisfy or rely on these reasons to lawfully transfer personal data to the United States. If there is no lawful manner for us to transfer personal data from the EEA, the UK or other jurisdictions to the United States, or if the requirements for a legally-compliant transfer are too onerous, we could face significant adverse consequences, including the interruption or degradation of our operations, the need to relocate part of or all of our business or data processing activities to other jurisdictions (such as Europe) at significant expense, increased exposure to regulatory actions, substantial fines and penalties, the inability to transfer data and work with partners, vendors and other third parties, and injunctions against our processing or transferring of personal data necessary to operate our business. Some European regulators have prevented companies from transferring personal data out of Europe for allegedly violating the GDPR’s cross-border data transfer limitations.

We are also bound by contractual obligations related to data privacy and security, and our efforts to comply with such obligations may not be successful. For example, certain privacy laws, such as the GDPR and the CCPA, require our customers to impose specific contractual restrictions on their service providers. We publish privacy policies, marketing materials and other statements, such as compliance with certain certifications or self-regulatory principles, regarding data privacy and security. If these policies, materials or statements are found to be deficient, lacking in transparency, deceptive, unfair, or misrepresentative of our practices, we may be subject to investigation, enforcement actions by regulators or other adverse consequences. In addition, privacy advocates and industry groups have proposed, and may propose, standards with which we are legally or contractually bound to comply, or may become subject to in the future.

Our obligations related to data privacy and security are quickly changing in an increasingly stringent fashion, creating some uncertainty as to the effective future legal framework. Additionally, these obligations may be subject to differing applications and interpretations, which may be inconsistent or conflict among jurisdictions. Preparing for and complying with these obligations requires significant resources and may necessitate changes to our information technologies, systems, and practices and to those of any third parties that process personal data on our behalf. Although we endeavor to comply with all applicable data privacy and security obligations, we may at times fail (or be perceived to have failed) to do so. Moreover, despite our efforts, our personnel or third parties upon whom we rely may fail to comply with such obligations, which could negatively impact our business operations and compliance posture. If we or the third parties on which we rely fail, or are perceived to have failed, to address or comply with data privacy and security obligations, we could face significant consequences. These consequences may include, but are not limited to, government enforcement actions (e.g., investigations, fines, penalties, audits, inspections, and similar); litigation (including class-related claims) and mass arbitration demands; additional reporting requirements and/or oversight; bans on processing personal data; orders to destroy or not use personal data; and imprisonment of company officials. In particular, plaintiffs have become increasingly more active in bringing privacy-related claims against companies, including class claims and mass arbitration demands. Some of these claims allow for the recovery of statutory damages on a per violation basis, and, if viable, carry the potential for monumental statutory damages, depending on the volume of data and the number of violations. Any of these events could have a material adverse effect on our reputation, business, or financial condition, including but not limited to: loss of customers; interruptions or stoppages in our business operations (including, as relevant, clinical trials); inability to process personal data or to operate in certain jurisdictions; limited ability to develop or commercialize our products; expenditure of time and resources to defend any claim or inquiry; adverse publicity; or revision or restructuring of our operations.

If we fail to comply with our reporting and payment obligations under the Medicaid Drug Rebate Program or other governmental pricing programs in the United States, we could be subject to additional reimbursement requirements, fines, sanctions and

exposure under other laws which could have a material adverse effect on our business, results of operations and financial condition.*

We participate in the Medicaid Drug Rebate Program, as administered by CMS, and other federal and state government pricing programs in the United States, and we may participate in additional government pricing programs in the future. These programs generally require us to pay rebates or otherwise provide discounts to government payers in connection with drugs that are dispensed to beneficiaries/recipients of these programs. In some cases, such as with the Medicaid Drug Rebate Program, the rebates are based on pricing that we report on a monthly and quarterly basis to the government agencies that administer the programs. Pricing requirements and rebate/discount calculations are complex, vary among products and programs, and are often subject to interpretation by governmental or regulatory agencies and the courts. The requirements of these programs, including, by way of example, their respective terms and scope, change frequently. For example, in March 2021, President Biden signed the American Rescue Plan Act of 2021 into law, which eliminates the statutory Medicaid drug rebate cap, currently set at 100% of a drug's AMP, for single source and innovator multiple source drugs, beginning January 1, 2024. Responding to current and future changes may increase our costs, and the complexity of compliance will be time consuming. Invoicing for rebates is provided in arrears, and there is frequently a time lag of up to several months between the sales to which rebate notices relate and our receipt of those notices, which further complicates our ability to accurately estimate and accrue for rebates related to the Medicaid program as implemented by individual states. Thus, there can be no assurance that we will be able to identify all factors that may cause our discount and rebate payment obligations to vary from period to period, and our actual results may differ significantly from our estimated allowances for discounts and rebates. Changes in estimates and assumptions may have a material adverse effect on our business, results of operations and financial condition.

In addition, the Office of Inspector General of the HHS and other Congressional, enforcement and administrative bodies have recently increased their focus on pricing requirements for products, including, but not limited to the methodologies used by manufacturers to calculate AMP and best price ("BP") for compliance with reporting requirements under the Medicaid Drug Rebate Program. We are liable for errors associated with our submission of pricing data and for any overcharging of government payers. For example, failure to submit monthly/quarterly AMP and BP data on a timely basis could result in a civil monetary penalty. Failure to make necessary disclosures and/or to identify overpayments could result in allegations against us under the False Claims Act and other laws and regulations. Any required refunds to the U.S. government or responding to a government investigation or enforcement action would be expensive and time consuming and could have a material adverse effect on our business, results of operations and financial condition. In addition, in the event that the CMS were to terminate our rebate agreement, no federal payments would be available under Medicaid or Medicare for our covered outpatient drugs.

Our business could be negatively impacted by environmental, social and corporate governance (ESG) matters or our reporting of such matters.

There is an increasing focus from certain investors, employees, partners, and other stakeholders concerning ESG matters. We may be, or be perceived to be, not acting responsibly in connection with these matters, which could negatively impact us. Moreover, the SEC has recently proposed, and may continue to propose, certain mandated ESG reporting requirements, such as the SEC's proposed rules designed to enhance and standardize climate-related disclosures, which, if finally approved, would significantly increase our compliance and reporting costs and may also result in disclosures that certain investors or other stakeholders deem to negatively impact our reputation and/or that harm our stock price. We currently do not report our environmental emissions and absent a legal requirement to do so we currently do not plan to report our environmental emissions, and lack of reporting could result in certain investors declining to invest in our common stock.

Our portfolio of investment securities may require us to register with the SEC as an "investment company" in accordance with the Investment Company Act of 1940 ("40 Act").

The rules and interpretations of the SEC and the courts relating to the definition of "investment company" are very complex. Although we are a biopharmaceutical company and we do not hold ourselves out as an investment company, the value of our investment securities relative to our total assets (exclusive of government securities and cash items) has in the past exceeded safe harbor limits prescribed in the '40 Act. If our asset mix does not continue to qualify for one of the safe harbor limits prescribed in the '40 Act, it is possible that the SEC would take the position that we would be required to register under the '40 Act and comply with the '40 Act's registration and reporting requirements, capital structure requirements, affiliate transaction restrictions, conflict of interest rules, requirements for disinterested directors, and other substantive provisions. If we were required to register as an "investment company" and be subject to the restrictions of the '40 Act, those restrictions likely would require significant changes in the way we do business and add significant administrative costs and burdens to our operations.

RISKS RELATED TO INTELLECTUAL PROPERTY

If we are unable to protect our proprietary rights, we may not be able to compete effectively, or operate profitably.

Our commercial success depends, in large part, on our ability to obtain and maintain intellectual property protection for our technology. Our ability to do so will depend on, among other things, complex legal and factual questions, and it should be noted that

the standards regarding intellectual property rights in our fields are still evolving. We attempt to protect our proprietary technology through a combination of patents, trade secrets and confidentiality agreements. We own a number of domestic and international patents, have a number of domestic and international patent applications pending and have licenses to additional patents. We cannot assure you that our patents and licenses will successfully preclude others from using our technologies, and we could incur substantial costs in seeking enforcement of our proprietary rights against infringement. Even if issued, the patents may not give us an advantage over competitors with alternative technologies.

For example, the coverage claimed in a patent application can be significantly reduced before a patent is issued, either in the United States or abroad. Statutory differences in patentable subject matter may limit the protection we can obtain on some of our inventions outside of the United States. For example, methods of treating patients are not patentable in many countries outside of the United States. These and other issues may limit the patent protection we are able to secure internationally. Consequently, we do not know whether any of our pending or future patent applications will result in the issuance of patents or, to the extent patents have been issued or will be issued, whether these patents will be subjected to further proceedings limiting their scope, will provide significant proprietary protection or competitive advantage, or will be circumvented or invalidated.

Furthermore, patents already issued to us or our pending applications may become subject to disputes that could be resolved against us. In the United States and certain other countries, applications are generally published 18 months after the application's priority date. Because publication of discoveries in scientific or patent literature often trails behind actual discoveries, we cannot be certain that we were the first inventor of the subject matter covered by our pending patent applications or that we were the first to file patent applications on such inventions. Assuming the other requirements for patentability are met, in the United States prior to March 15, 2013, the first to make the claimed invention is entitled to the patent, while outside the United States, the first to file a patent application is entitled to the patent. After March 15, 2013, under the Leahy-Smith America Invents Act ("AIA"), the United States moved to a first inventor to file system. In general, the AIA and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business and financial condition.

Moreover, the term of a patent is limited and, as a result, the patents protecting our products expire at various dates. As and when these different patents expire, our products could become subject to increased competition. As a consequence, we may not be able to recover our development costs.

An issued patent is presumed valid unless it is declared otherwise by a court of competent jurisdiction. However, the issuance of a patent is not conclusive as to its validity or enforceability and it is uncertain how much protection, if any, will be afforded by our patents. A third party may challenge the validity or enforceability of a patent after its issuance by various proceedings such as oppositions in foreign jurisdictions, or post grant proceedings, including, oppositions, re-examinations or other review in the United States. In some instances, we may seek re-examination or reissuance of our own patents. If we attempt to enforce our patents, they may be challenged in court where they could be held invalid, unenforceable, or have their breadth narrowed to an extent that would destroy their value.

We also rely on unpatented technology, trade secrets, know-how and confidentiality agreements. We require our officers, employees, consultants and advisors to execute proprietary information and invention and assignment agreements upon commencement of their relationships with us. These agreements provide that all inventions developed by the individual on behalf of us must be assigned to us and that the individual will cooperate with us in connection with securing patent protection on the invention if we wish to pursue such protection. We also execute confidentiality agreements with outside collaborators. However, disputes may arise as to the ownership of proprietary rights to the extent that outside collaborators apply technological information to our projects that are developed independently by them or others, or apply our technology to outside projects, and there can be no assurance that any such disputes would be resolved in our favor. In addition, any of these parties may breach the agreements and disclose our confidential information or our competitors might learn of the information in some other way. Thus, there can be no assurance, however, that our inventions and assignment agreements and our confidentiality agreements will provide meaningful protection for our inventions, trade secrets, know-how or other proprietary information in the event of unauthorized use or disclosure of such information. If any trade secret, know-how or other technology not protected by a patent were to be disclosed to or independently developed by a competitor, our business, results of operations and financial condition could be adversely affected.

If we become involved in lawsuits to protect or enforce our patents or the patents of our collaborators or licensors, we would be required to devote substantial time and resources to prosecute or defend such proceedings.

Competitors may infringe our patents or the patents of our collaborators or licensors. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time-consuming. In addition, in an infringement proceeding, a court may decide that a patent of ours is not valid or is unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover its technology. A court may also decide to award us a royalty from an infringing party instead of issuing an injunction against the infringing activity. An adverse determination of any litigation or defense proceedings could put one or more of our patents at risk of being invalidated or interpreted narrowly and could put our patent applications at risk of not issuing.

Interference proceedings brought by the USPTO, may be necessary to determine the priority of inventions with respect to our pre-AIA patent applications or those of our collaborators or licensors. Additionally, the AIA has greatly expanded the options for post-grant review of patents that can be brought by third parties. In particular, Inter Partes Review (“IPR”), available against any issued United States patent (pre-and post-AIA), has resulted in a higher rate of claim invalidation, due in part to the much reduced opportunity to repair claims by amendment as compared to re-examination, as well as the lower standard of proof used at the USPTO as compared to the federal courts. With the passage of time an increasing number of patents related to successful pharmaceutical products are being subjected to IPR. Moreover, the filing of IPR petitions has been used by short-sellers as a tool to help drive down stock prices. We may not prevail in any litigation, post-grant review, or interference proceedings in which we are involved and, even if we are successful, these proceedings may result in substantial costs and be a distraction to our management. Further, we may not be able, alone or with our collaborators and licensors, to prevent misappropriation of our proprietary rights, particularly in countries where the laws may not protect such rights as fully as in the United States.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, during the course of this kind of litigation, there could be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, the market price of our common stock and other securities may decline.

If our technologies conflict with the proprietary rights of others, we may incur substantial costs as a result of litigation or other proceedings and we could face substantial monetary damages and be precluded from commercializing our products, which would materially harm our business and financial condition.

Biotechnology patents are numerous and may, at times, conflict with one another. As a result, it is not always clear to industry participants, including us, which patents cover the multitude of biotechnology product types. Ultimately, the courts must determine the scope of coverage afforded by a patent and the courts do not always arrive at uniform conclusions.

A patent owner may claim that we are making, using, selling or offering for sale an invention covered by the owner’s patents and may go to court to stop us from engaging in such activities. Such litigation is not uncommon in our industry.

Patent lawsuits can be expensive and would consume time and other resources. There is a risk that a court would decide that we are infringing a third party’s patents and would order us to stop the activities covered by the patents, including the commercialization of our products. In addition, there is a risk that we would have to pay the other party damages for having violated the other party’s patents (which damages may be increased, as well as attorneys’ fees ordered paid, if infringement is found to be willful), or that we will be required to obtain a license from the other party in order to continue to commercialize the affected products, or to design our products in a manner that does not infringe a valid patent. We may not prevail in any legal action, and a required license under the patent may not be available on acceptable terms or at all, requiring cessation of activities that were found to infringe a valid patent. We also may not be able to develop a non-infringing product design on commercially reasonable terms, or at all.

Moreover, certain components of our products may be manufactured outside the United States and imported into the United States. As such, third parties could file complaints under 19 U.S.C. Section 337(a)(1)(B) (a “337 action”) with the International Trade Commission (the “ITC”). A 337 action can be expensive and would consume time and other resources. There is a risk that the ITC would decide that we are infringing a third party’s patents and either enjoin us from importing the infringing products or parts thereof into the United States or set a bond in an amount that the ITC considers would offset our competitive advantage from the continued importation during the statutory review period. The bond could be up to 100% of the value of the patented products. We may not prevail in any legal action, and a required license under the patent may not be available on acceptable terms, or at all, resulting in a permanent injunction preventing any further importation of the infringing products or parts thereof into the United States. We also may not be able to develop a non-infringing product design on commercially reasonable terms, or at all.

Although we do not believe that our products or product candidates infringe any third-party patents, if a plaintiff was to allege infringement of their patent rights, we would have to establish with the court that their patents are invalid or unenforceable in order to avoid legal liability for infringement of these patents. However, proving patent invalidity or unenforceability can be difficult because issued patents are presumed valid. Therefore, in the event that we are unable to prevail in a non-infringement or invalidity action we will have to either acquire the third-party patents outright or seek a royalty-bearing license. Royalty-bearing licenses effectively increase production costs and therefore may materially affect product profitability. Furthermore, should the patent holder refuse to either assign or license us the infringed patents, it may be necessary to cease manufacturing the product entirely and/or design around the patents, if possible. In either event, our business, financial condition and results of operations would be harmed and our profitability could be materially and adversely impacted.

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

or developments. If securities analysts or investors perceive these results to be negative, the market price of our common stock and other securities may decline.

In addition, patent litigation may divert the attention of key personnel and we may not have sufficient resources to bring these actions to a successful conclusion. At the same time, some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. An adverse determination in a judicial or administrative proceeding or failure to obtain necessary licenses could prevent us from manufacturing and selling our products or result in substantial monetary damages, which would adversely affect our business, financial condition and results of operations and cause the market price of our common stock and other securities to decline.

We may not obtain trademark registrations for our potential trade names.

We have not selected trade names for some of our product candidates in our pipeline; therefore, we have not filed trademark registrations for such potential trade names for our product candidates, nor can we assure that we will be granted registration of any potential trade names for which we do file. No assurance can be given that any of our trademarks will be registered in the United States or elsewhere, or once registered that, prior to our being able to enter a particular market, they will not be cancelled for non-use. Nor can we give assurances, that the use of any of our trademarks will confer a competitive advantage in the marketplace.

Furthermore, even if we are successful in our trademark registrations, the FDA has its own process for drug nomenclature and its own views concerning appropriate proprietary names. It also has the power, even after granting market approval, to request a company to reconsider the name for a product because of evidence of confusion in the marketplace. We cannot assure you that the FDA or any other regulatory authority will approve of any of our trademarks or will not request reconsideration of one of our trademarks at some time in the future.

RISKS RELATED TO OUR COMMON STOCK

Our stock price is volatile.

The trading price of our common stock has been and is likely to continue to be volatile. The volatility of pharmaceutical and biotechnology stocks often does not relate to the operating performance of the companies represented by the stock. Our business and the market price of our common stock may be influenced by a large variety of factors, including:

- our ability to obtain marketing approval for our products outside of the United States and to find collaboration partners for the commercialization of our products in foreign jurisdictions;
- future estimates of product sales, royalties, prescriptions or other operating metrics;
- our ability to successfully commercialize other products based on our Technosphere drug delivery platform;
- the progress and results of preclinical and clinical studies of our product candidates and of post-approval studies of approved products that are required by the FDA;
- general economic, political or stock market conditions, especially for emerging growth and pharmaceutical market sectors;
- geopolitical events, such as the current Russia-Ukraine conflict;
- legislative developments;
- disruptions caused by man-made or natural disasters or public health pandemics or epidemics or other business interruptions;
- changes in the structure of the healthcare payment systems;
- announcements by us, our collaborators, or our competitors concerning clinical study results, acquisitions, strategic alliances, technological innovations, newly approved commercial products, product discontinuations, or other developments;
- the availability of critical materials used in developing and manufacturing our products and product candidates;
- developments or disputes concerning our relationship with any of our current or future collaborators or third party manufacturers;
- developments or disputes concerning our patents or proprietary rights;
- the expense and time associated with, and the extent of our ultimate success in, securing regulatory approvals;
- announcements by us concerning our financial condition or operating performance;

- changes in securities analysts' estimates of our financial condition or operating performance;
- sales of large blocks of our common stock, including sales by our executive officers, directors and significant stockholders;
- the trades of short sellers;
- our ability, or the perception of investors of our ability, to continue to meet all applicable requirements for continued listing of our common stock on The Nasdaq Global Market, and the possible delisting of our common stock if we are unable to do so;
- the status of any legal proceedings or regulatory matters against or involving us or any of our executive officers and directors; and
- discussion of our products, competitors' products, or our stock price by the financial and scientific press, the healthcare community and online investor communities such as chat rooms. In particular, it may be difficult to verify statements about us that appear on interactive websites that permit users to generate content anonymously or under a pseudonym. Statements attributed to company officials may, in fact, have originated elsewhere.

Any of these risks, as well as other factors, could cause the market value of our common stock and other securities to decline.

If we fail to continue to meet all applicable listing requirements, our common stock may be delisted from the Nasdaq Global Market, which could have an adverse impact on the liquidity and market price of our common stock.

Our common stock is currently listed on The Nasdaq Global Market, which has qualitative and quantitative listing criteria. If we are unable to meet any of the Nasdaq listing requirements in the future, such as the corporate governance requirements, the minimum closing bid price requirement, or the minimum market value of listed securities requirement, Nasdaq could determine to delist our common stock. A delisting of our common stock could adversely affect the market liquidity of our common stock, decrease the market price of our common stock, adversely affect our ability to obtain financing for the continuation of our operations and result in the loss of confidence in our company.

Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of us, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management.

We are incorporated in Delaware. Certain anti-takeover provisions under Delaware law and in our certificate of incorporation and amended and restated bylaws, as currently in effect, may make a change of control of our company more difficult, even if a change in control would be beneficial to our stockholders or the holders of our other securities. Our anti-takeover provisions include provisions such as a prohibition on stockholder actions by written consent, the authority of our board of directors to issue preferred stock without stockholder approval, and supermajority voting requirements for specified actions. In addition, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which generally prohibits stockholders owning 15% or more of our outstanding voting stock from merging or combining with us in certain circumstances. These provisions may delay or prevent an acquisition of us, even if the acquisition may be considered beneficial by some of our stockholders. In addition, they may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, which is responsible for appointing the members of our management.

Our amended and restated bylaws provide that the Court of Chancery of the State of Delaware and the federal district courts of the United States of America are the exclusive forums for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers, or employees.

Our amended and restated bylaws provide that, to the fullest extent permitted by law and subject to the court's having personal jurisdiction over the indispensable parties named as defendants, the Court of Chancery of the State of Delaware is the exclusive forum for the following types of actions or proceedings under Delaware statutory or common law:

- any derivative action or proceeding brought on our behalf;
- any action or proceeding asserting a breach of fiduciary duty owed by any of our current or former directors, officers or other employees to us or our stockholders;
- any action or proceeding asserting a claim against us or any of our current or former directors, officers or other employees arising out of or pursuant to any provision of the Delaware General Corporation Law, our amended and certificate of incorporation or amended and restated bylaws;
- any action or proceeding to interpret, apply, enforce or determine the validity of our amended and restated certificate of incorporation or our amended and restated bylaws;

- any action or proceeding as to which the Delaware General Corporation Law confers jurisdiction to the Court of Chancery of the State of Delaware; and
- any action asserting a claim against us or any of our directors, officers or other employees that is governed by the internal affairs doctrine.

This provision does not apply to suits brought to enforce a duty or liability created by the Exchange Act. Furthermore, Section 22 of the Securities Act of 1933, as amended, or the Securities Act, creates concurrent jurisdiction for federal and state courts over all such Securities Act actions. Accordingly, both state and federal courts have jurisdiction to entertain such claims. To prevent having to litigate claims in multiple jurisdictions and the threat of inconsistent or contrary rulings by different courts, among other considerations, our amended and restated bylaws further provides that the federal district courts of the United States of America will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act. While the Delaware courts have determined that such choice of forum provisions are facially valid, a stockholder may nevertheless seek to bring a claim in a venue other than those designated in the exclusive forum provisions. In such instance, we would expect to vigorously assert the validity and enforceability of the exclusive forum provisions of our amended and restated bylaws. This may require significant additional costs associated with resolving such action in other jurisdictions and there can be no assurance that the provisions will be enforced by a court in those other jurisdictions.

These exclusive forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers, or other employees, which may discourage lawsuits against us and our directors, officers and other employees. If a court were to find either exclusive forum provision in our amended and restated bylaws to be inapplicable or unenforceable in an action, we may incur further significant additional costs associated with resolving the dispute in other jurisdictions, all of which could seriously harm our business.

Because we do not expect to pay dividends in the foreseeable future, you must rely on stock appreciation for any return on any investment in our common stock.

We have paid no cash dividends on any of our capital stock to date, and we currently intend to retain our future earnings, if any, to fund the development and growth of our business. As a result, we do not expect to pay any cash dividends in the foreseeable future, and payment of cash dividends, if any, will also depend on our financial condition, results of operations, capital requirements and other factors and will be at the discretion of our board of directors. In addition, pursuant to the MidCap credit facility, we are subject to contractual restrictions on the payment of dividends. There is no guarantee that our common stock will appreciate or maintain its current price. You could lose the entire value of any investment in our common stock.

Future sales of shares of our common stock in the public market, or the perception that such sales may occur, may depress our stock price and adversely impact the market price of our common stock and other securities.*

We may need to raise substantial additional capital in the future to fund our operations. If we raise additional funds by issuing equity securities or additional convertible debt, the market price of our common stock and other securities may decline. Similarly, if our existing stockholders sell substantial amounts of our common stock in the public market, the market price of our common stock and other securities could decrease. The perception in the public market that we or our existing stockholders might sell shares of common stock could also depress the market price of our common stock and the market price of our other securities.

Likewise, the issuance of additional shares of our common stock upon the exchange or conversion of the Mann Group convertible note, or the Senior convertible notes, could adversely affect the market price of our common stock and other securities. Moreover, the existence of these notes may encourage short selling of our common stock by market participants, which could adversely affect the market price of our common stock and other securities.

In addition, a substantial number of shares of our common stock is reserved for issuance upon the exercise of stock options, the vesting of restricted stock unit awards and purchases under our employee stock purchase program. The issuance or sale of substantial amounts of common stock, or the perception that such issuances or sales may occur, could adversely affect the market price of our common stock and other securities.

If other biotechnology and biopharmaceutical companies or the securities markets in general encounter problems, the market price of our common stock and other securities could be adversely affected.

Public companies in general, including companies listed on The Nasdaq Stock Market, have experienced price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of those companies. There has been particular volatility in the market prices of securities of biotechnology and other life sciences companies, and the market prices of these companies have often fluctuated because of problems or successes in a given market segment or because investor interest has shifted to other segments. These broad market and industry factors may cause the market price of our common stock and other securities to decline, regardless of our operating performance. We have no control over this volatility and can only focus our efforts on our own operations, and even these may be affected due to the state of the capital markets.

In the past, following periods of large price declines in the public market price of a company's securities, securities class action litigation has often been initiated against that company. Litigation of this type could result in substantial costs and diversion of management's attention and resources, which would hurt our business. Any adverse determination in litigation could also subject us to significant liabilities.

GENERAL RISK FACTORS

Unstable market, economic and geopolitical conditions may have serious adverse consequences on our business, financial condition and stock price.*

The global credit and financial markets have experienced extreme volatility and disruptions in the past. These disruptions can result in severely diminished liquidity and credit availability, increase in inflation, declines in consumer confidence, declines in economic growth, increases in unemployment rates and uncertainty about economic stability. There can be no assurance that further deterioration in credit and financial markets and confidence in economic conditions will not occur. Our general business strategy may be adversely affected by any such economic downturn, volatile business environment, actual or anticipated bank failures, higher inflation, or continued unpredictable and unstable market conditions. If the current equity and credit markets deteriorate, it may make any necessary debt or equity financing more difficult, more costly and more dilutive. Our portfolio of corporate and government bonds could also be adversely impacted. Failure to secure any necessary financing in a timely manner and on favorable terms could have a material adverse effect on our operations, growth strategy, financial performance and stock price and could require us to delay or abandon clinical development plans. In addition, there is a risk that one or more of our current service providers, manufacturers and other partners may not survive an economic downturn or rising inflation, which could directly affect our ability to attain our operating goals on schedule and on budget.

Other international and geopolitical events could also have a serious adverse impact on our business. For instance, in February 2022, Russia initiated military action against Ukraine. In response, the United States and certain other countries imposed significant sanctions and trade actions against Russia and could impose further sanctions, trade restrictions, and other retaliatory actions. While we cannot predict the broader consequences, the conflict and retaliatory and counter-retaliatory actions could materially adversely affect global trade, currency exchange rates, inflation, regional economies, and the global economy, which in turn may increase our costs, disrupt our supply chain, impair our ability to raise or access additional capital when needed on acceptable terms, if at all, or otherwise adversely affect our business, financial condition, and results of operations.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

In April 2023, we elected to pay quarterly interest under the Mann Group convertible note of approximately \$0.1 million by issuing the Mann Group 13,192 shares of common stock. See Note 9 – *Borrowings*.

We relied on an exemption from registration provided by Section 3(a)(9) or 4(a)(2) of the Securities Act of 1933, as amended, for the issuance of the shares described above.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. OTHER INFORMATION

During the three months ended June 30, 2023, one of our executive officers adopted a written trading plan for the orderly disposition of the Company's securities as set forth in the table below:

Name and Position	Action	Date	Type of Trading Arrangement		Total Shares of Common Stock to be Sold	Expiration Date
			Rule 10b5-1⁽¹⁾	Non-Rule 10b5-1⁽²⁾		
Stuart A. Tross, EVP <i>Chief People and Workplace Officer</i>	Adoption	May 24, 2023	X	—	384,020	May 24, 2024

(1) Contract, instruction or written plan intended to satisfy the affirmative defense conditions of Rule 10b5-1(c) under the Exchange Act.

(2) "Non-Rule 10b5-1 trading arrangement" as defined in Item 408(c) of Regulation S-K under the Exchange Act.

ITEM 6. EXHIBITS

Exhibit Number	Description of Document
3.1	<u>Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to MannKind’s Quarterly Report on Form 10-Q (File No. 000-50865), filed with the SEC on August 9, 2016).</u>
3.2	<u>Certificate of Amendment of Amended and Restated Certificate of Incorporation of MannKind Corporation (incorporated by reference to Exhibit 3.1 to MannKind’s Current Report on Form 8-K (File No. 000-50865), filed with the SEC on March 2, 2017).</u>
3.3	<u>Certificate of Amendment of Amended and Restated Certificate of Incorporation of MannKind Corporation (incorporated by reference to Exhibit 3.1 to MannKind’s Current Report on Form 8-K (File No. 000-50865), filed with the SEC on December 13, 2017).</u>
3.4	<u>Certificate of Amendment of Amended and Restated Certificate of Incorporation of MannKind Corporation (incorporated by reference to Exhibit 3.1 to MannKind’s Current Report on Form 8-K (File No. 000-50865), filed with the SEC on May 27, 2020).</u>
3.5	<u>Certificate of Amendment of Amended and Restated Certificate of Incorporation of MannKind Corporation (incorporated by reference to Exhibit 3.1 to MannKind’s Current Report on Form 8-K (File No. 000-50865), filed with the SEC on May 30, 2023).</u>
3.6	<u>Amended and Restated Bylaws (incorporated by reference to Exhibit 3.2 to MannKind’s Current Report on Form 8-K (File No. 000-50865), filed with the SEC on May 27, 2020).</u>
4.1	Reference is made to Exhibits <u>3.1</u> , <u>3.2</u> , <u>3.3</u> , <u>3.4</u> , <u>3.5</u> and <u>3.6</u> .
4.2	<u>Form of common stock certificate (incorporated by reference to Exhibit 4.2 to MannKind’s Annual Report on Form 10-K (File No. 000-50865), filed with the SEC on March 16, 2017).</u>
4.3	<u>Milestone Rights Purchase Agreement, dated as of July 1, 2013, by and among MannKind, Deerfield Private Design Fund II, L.P. and Horizon Santé FLML SÁRL (incorporated by reference to Exhibit 99.3 to MannKind’s Current Report on Form 8-K (File No. 000-50865), filed with the SEC on July 1, 2013).</u>
4.4	<u>Form of Warrant to Purchase Stock issued to MidCap Financial Trust on August 6, 2019 (incorporated by reference to Exhibit 4.1 to MannKind’s Current Report on Form 8-K (File No. 000-50865), filed with the SEC on August 7, 2019).</u>
4.5	<u>Convertible Promissory Note made by MannKind Corporation in favor of The Mann Group LLC, dated August 6, 2019 (incorporated by reference to Exhibit 4.6 to MannKind’s Current Report on Form 8-K (File No. 000-50865), filed with the SEC on August 7, 2019).</u>
4.6	<u>Amendment No. 1 to Convertible Promissory Note, dated April 22, 2021, by and between MannKind Corporation and The Mann Group LLC (incorporated by reference to Exhibit 99.2 to MannKind’s Current Report on Form 8-K (File No. 000-50865), filed with the SEC on April 26, 2021).</u>
4.7	<u>Promissory Note made by MannKind Corporation in favor of The Mann Group LLC, dated August 6, 2019 (incorporated by reference to Exhibit 4.7 to MannKind’s Current Report on Form 8-K (File No. 000-50865), filed with the SEC on August 7, 2019).</u>
4.8	<u>Indenture, dated as of March 4, 2021, by and between MannKind Corporation and U.S. Bank National Association, as Trustee (incorporated by reference to Exhibit 4.1 to MannKind’s Current Report on Form 8-K (File No. 000-50865), filed with the SEC on March 5, 2021).</u>
4.9	<u>Form of Global Note, representing MannKind Corporation’s 2.50% Convertible Senior Notes due 2026 (included as Exhibit A to the Indenture filed as Exhibit 4.15) (incorporated by reference to Exhibit 4.2 to MannKind’s Current Report on Form 8-K (File No. 000-50865), filed with the SEC on March 5, 2021).</u>
10.1	<u>MannKind Corporation 2018 Equity Incentive Plan, as amended.</u>
10.2	<u>MannKind Corporation 2004 Employee Stock Purchase Plan, as amended.</u>
31.1	<u>Certification of the Chief Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended.</u>
31.2	<u>Certification of the Chief Financial Officer pursuant to Rules 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended.</u>

32.1	<u>Certification of the Chief Executive Officer pursuant to Rules 13a-14(b) and 15d-14(b) of the Securities Exchange Act of 1934, as amended and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350).</u>
32.2	<u>Certification of the Chief Financial Officer pursuant to Rules 13a-14(b) and 15d-14(b) of the Securities Exchange Act of 1934, as amended and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350).</u>
101	Inline Interactive Data Files pursuant to Rule 405 of Regulation S-T.
104	The cover page has been formatted in Inline XBRL.

SIGNATURE

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.

Dated: August 7, 2023

MANKIND CORPORATION

By: /s/ MICHAEL E. CASTAGNA

Michael E. Castagna

Chief Executive Officer

(on behalf of the registrant and as the registrant's Principal Executive Officer)

By: /s/ STEVEN B. BINDER

Steven B. Binder

Chief Financial Officer

(Principal Financial and Accounting Officer)

MANNKIND CORPORATION

2018 EQUITY INCENTIVE PLAN

ADOPTED BY THE BOARD OF DIRECTORS: FEBRUARY 21, 2018

APPROVED BY THE STOCKHOLDERS: MAY 16, 2018

AMENDED BY THE BOARD OF DIRECTORS: MARCH 23, 2020

AMENDMENT APPROVED BY THE STOCKHOLDERS: MAY 21, 2020

AMENDED BY THE BOARD OF DIRECTORS: MARCH 17, 2023

AMENDMENT APPROVED BY THE STOCKHOLDERS: [MAY 25, 2023]

1. GENERAL.

(a) Successor to and Continuation of Prior Plans. The Plan is intended as the successor to and continuation of the MannKind Corporation 2013 Equity Incentive Plan (the “**2013 Plan**”) and the MannKind Corporation 2004 Equity Incentive Plan (the “**2004 Plan**”, and together with the 2013 Plan, the “**Prior Plans**”). Following the Effective Date, no additional stock awards may be granted under the Prior Plans. Any unallocated shares remaining available for grant under the Prior Plans as of 12:01 a.m., Pacific Time on the Effective Date (the “**Prior Plans’ Available Reserve**”) will cease to be available under such Prior Plans at such time and will be added to the Share Reserve (as further described in Section 3(a) below) and be then immediately available for grant and issuance pursuant to Stock Awards granted under the Plan. In addition, from and after 12:01 a.m., Pacific Time on the Effective Date, all outstanding stock awards granted under the Prior Plans will remain subject to the terms of such Prior Plans, as applicable; *provided, however*, that any shares subject to outstanding stock awards granted under the Prior Plans that (i) expire or terminate for any reason prior to exercise or settlement, (ii) are forfeited, cancelled or otherwise returned to the Company because of the failure to meet a contingency or condition required for the vesting of such shares, or (iii) other than with respect to outstanding options and stock appreciation rights granted under the Prior Plans, with respect to which the exercise or strike price is at least one hundred percent (100%) of the Fair Market Value of the Common Stock subject to the option or stock appreciation right on the date of grant (the “**Prior Plans’ Appreciation Awards**”), are reacquired or withheld (or not issued) by the Company to satisfy a tax withholding obligation in connection with a stock award (collectively, the “**Prior Plans’ Returning Shares**”) will immediately be added to the Share Reserve (as further described in Section 3(a) below) as and when such shares become Prior Plans’ Returning Shares and become available for issuance pursuant to Awards granted hereunder. All Stock Awards granted on or after 12:01 a.m., Pacific Time on the Effective Date will be subject to the terms of this Plan.

(b) Eligible Award Recipients. Employees, Directors and Consultants are eligible to receive Stock Awards.

(c) Available Stock Awards. The Plan provides for the grant of the following types of Stock Awards: (i) Incentive Stock Options, (ii) Nonstatutory Stock Options, (iii) Stock Appreciation Rights, (iv) Restricted Stock Awards, (v) Restricted Stock Unit Awards, (vi) Performance Stock Awards, and (vii) Other Stock Awards.

(d)Purpose. The Plan, through the granting of Stock Awards, is intended to help the Company and any Affiliate secure and retain the services of eligible award recipients, provide incentives for such persons to exert maximum efforts for the success of the Company and any Affiliate and provide a means by which the eligible recipients may benefit from increases in value of the Common Stock.

2. ADMINISTRATION.

(a)Administration by Board. The Board will administer the Plan. The Board may delegate administration of the Plan to a Committee or Committees, as provided in Section 2(c).

(b)Powers of Board. The Board will have the power, subject to, and within the limitations of, the express provisions of the Plan:

(i) To determine (A) who will be granted Stock Awards; (B) when and how each Stock Award will be granted; (C) what type of Stock Award will be granted; (D) the provisions of each Stock Award (which need not be identical), including when a person will be permitted to exercise or otherwise receive cash or Common Stock under the Stock Award; (E) the number of shares of Common Stock subject to, or the cash value of, a Stock Award; and (F) the Fair Market Value applicable to a Stock Award.

(ii) To construe and interpret the Plan and Stock Awards granted under it, and to establish, amend and revoke rules and regulations for administration of the Plan and Stock Awards. The Board, in the exercise of these powers, may correct any defect, omission or inconsistency in the Plan or in any Stock Award Agreement, in a manner and to the extent it will deem necessary or expedient to make the Plan or Stock Award fully effective.

(iii) To settle all controversies regarding the Plan and Stock Awards granted under it.

(iv) To accelerate, in whole or in part, the time at which a Stock Award may be exercised or vest (or the time at which cash or shares of Common Stock may be issued in settlement thereof).

(v) To suspend or terminate the Plan at any time. Except as otherwise provided in the Plan or a Stock Award Agreement, suspension or termination of the Plan will not materially impair a Participant's rights under his or her then-outstanding Stock Award without his or her written consent except as provided in subsection (viii) below.

(vi) To amend the Plan in any respect the Board deems necessary or advisable, including, without limitation, by adopting amendments relating to Incentive Stock Options and certain nonqualified deferred compensation under Section 409A of the Code and/or to make the Plan or Stock Awards granted under the Plan compliant with the requirements for Incentive Stock Options or exempt from or compliant with the requirements for nonqualified deferred compensation under Section 409A of the Code, subject to the limitations, if any, of applicable law. However, if required by applicable law or listing requirements, and except as provided in Section 9(a) relating to Capitalization Adjustments, the Company will seek stockholder approval of any amendment of the Plan that (A) materially increases the number of shares of Common Stock available for issuance under the Plan, (B) materially expands the class of individuals eligible to

receive Stock Awards under the Plan, (C) materially increases the benefits accruing to Participants under the Plan, (D) materially reduces the price at which shares of Common Stock may be issued or purchased under the Plan, or (E) materially expands the types of Stock Awards available for issuance under the Plan. Except as provided in the Plan (including Section 2(b)(viii)) or a Stock Award Agreement, no amendment of the Plan will materially impair a Participant's rights under an outstanding Stock Award without the Participant's written consent.

(vii) To submit any amendment to the Plan for stockholder approval, including, but not limited to, amendments to the Plan intended to satisfy the requirements of (A) Section 422 of the Code regarding incentive stock options or (B) Rule 16b-3.

(viii) To approve forms of Stock Award Agreements for use under the Plan and to amend the terms of any one or more Stock Awards, including, but not limited to, amendments to provide terms more favorable to the Participant than previously provided in the Stock Award Agreement, subject to any specified limits in the Plan that are not subject to Board discretion; *provided, however*, that a Participant's rights under any Stock Award will not be impaired by any such amendment unless (A) the Company requests the consent of the affected Participant, and (B) such Participant consents in writing. Notwithstanding the foregoing, (1) a Participant's rights will not be deemed to have been impaired by any such amendment if the Board, in its sole discretion, determines that the amendment, taken as a whole, does not materially impair the Participant's rights, and (2) subject to the limitations of applicable law, if any, the Board may amend the terms of any one or more Stock Awards without the affected Participant's consent (A) to maintain the qualified status of the Stock Award as an Incentive Stock Option under Section 422 of the Code; (B) to change the terms of an Incentive Stock Option, if such change results in impairment of the Stock Award solely because it impairs the qualified status of the Stock Award as an Incentive Stock Option under Section 422 of the Code; (C) to clarify the manner of exemption from, or to bring the Stock Award into compliance with, Section 409A of the Code; or (D) to comply with other applicable laws or listing requirements.

(ix) Generally, to exercise such powers and to perform such acts as the Board deems necessary or expedient to promote the best interests of the Company and that are not in conflict with the provisions of the Plan or Stock Awards.

(x) To adopt such procedures and sub-plans as are necessary or appropriate to permit participation in the Plan by Employees, Directors or Consultants who are foreign nationals or employed outside the United States (provided that Board approval will not be necessary for immaterial modifications to the Plan or any Stock Award Agreement that are required for compliance with the laws of the relevant foreign jurisdiction).

(c) Delegation to Committee.

(i) General. The Board may delegate some or all of the administration of the Plan to a Committee or Committees. If administration of the Plan is delegated to a Committee, the Committee will have, in connection with the administration of the Plan, the powers theretofore possessed by the Board that have been delegated to the Committee, including the power to delegate to a subcommittee of the Committee any of the administrative powers the Committee is authorized to exercise (and references in this Plan to the Board will thereafter be to the Committee or

subcommittee, as applicable). Any delegation of administrative powers will be reflected in resolutions, not inconsistent with the provisions of the Plan, adopted from time to time by the Board or Committee (as applicable). The Committee may, at any time, abolish the subcommittee and/or revest in the Committee any powers delegated to the subcommittee. The Board may retain the authority to concurrently administer the Plan with the Committee and may, at any time, revest in the Board some or all of the powers previously delegated.

(ii) Rule 16b-3 Compliance. The Committee may consist solely of two or more Non-Employee Directors, in accordance with Rule 16b-3.

(d) Delegation to an Officer. The Board may delegate to one or more Officers the authority to do one or both of the following (i) designate Employees who are not Officers to be recipients of Options and SARs (and, to the extent permitted by applicable law, other Stock Awards) and, to the extent permitted by applicable law, the terms of such Stock Awards, and (ii) determine the number of shares of Common Stock to be subject to such Stock Awards granted to such Employees; *provided, however,* that the Board resolutions regarding such delegation will specify the total number of shares of Common Stock that may be subject to the Stock Awards granted by such Officer and that such Officer may not grant a Stock Award to himself or herself. Any such Stock Awards will be granted on the form of Stock Award Agreement most recently approved for use by the Committee or the Board, unless otherwise provided in the resolutions approving the delegation authority. The Board may not delegate authority to an Officer who is acting solely in the capacity of an Officer (and not also as a Director) to determine the Fair Market Value pursuant to Section 13(t)(iii) below.

(e) Effect of Board's Decision. All determinations, interpretations and constructions made by the Board in good faith will not be subject to review by any person and will be final, binding and conclusive on all persons.

(f) Repricing; Cancellation and Re-Grant of Stock Awards. Neither the Board nor any Committee will have the authority to (i) reduce the exercise, purchase or strike price of any outstanding Option or SAR under the Plan, or (ii) cancel any outstanding Option or SAR that has an exercise price or strike price greater than the then-current Fair Market Value of the Common Stock in exchange for cash or other Stock Awards under the Plan, unless the stockholders of the Company have approved such an action within 12 months prior to such an event.

(g) Dividends and Dividend Equivalents. Dividends or dividend equivalents may be paid or credited, as applicable, with respect to any shares of Common Stock subject to a Stock Award, as determined by the Board and contained in the applicable Stock Award Agreement; *provided, however,* that (i) no dividends or dividend equivalents may be paid with respect to any such shares before the date such shares have vested under the terms of such Stock Award Agreement, (ii) any dividends or dividend equivalents that are credited with respect to any such shares will be subject to all of the terms and conditions applicable to such shares under the terms of such Stock Award Agreement (including, but not limited to, any vesting conditions), and (iii) any dividends or dividend equivalents that are credited with respect to any such shares will be forfeited to the Company on the date, if any, such shares are forfeited to or repurchased by the Company due to a failure to meet any vesting conditions under the terms of such Stock Award Agreement.

3. SHARES SUBJECT TO THE PLAN.

(a) Share Reserve.

(i) Subject to Section 9(a) relating to Capitalization Adjustments, the aggregate number of shares of Common Stock that may be issued pursuant to Stock Awards from and after the Effective Date will not exceed (A) 50,729,678 shares (which number is the sum of (i) the number of shares (1,229,678) subject to the Prior Plans' Available Reserve, (ii) an additional 12,000,000 shares approved by the shareholders in 2018, (iii) an additional 12,500,000 shares approved by the shareholders in 2020 and (iv) an additional 25,000,000 shares approved by the shareholders in 2023), plus (B) the Prior Plans' Returning Shares, if any, which become available for grant under this Plan from time to time (such aggregate number of shares described in (A) and (B) above, the "**Share Reserve**").

(ii) For clarity, the Share Reserve in this Section 3(a) is a limitation on the number of shares of Common Stock that may be issued pursuant to the Plan. Accordingly, this Section 3(a) does not limit the granting of Stock Awards except as provided in Section 7(a). Shares may be issued in connection with a merger or acquisition as permitted by NASDAQ Listing Rule 5635(c) or, if applicable, NYSE Listed Company Manual Section 303A.08, AMEX Company Guide Section 711 or other applicable rule, and such issuance will not reduce the number of shares available for issuance under the Plan.

(iii) Subject to Section 3(b), the number of shares of Common Stock available for issuance under the Plan will be reduced by: (A) one share for each share of Common Stock issued pursuant to an Option or SAR with respect to which the exercise or strike price is at least 100% of the Fair Market Value of the Common Stock subject to the Option or SAR on the date of grant; and (B) one and one tenths (1.1) shares for each share of Common Stock issued pursuant to a Full Value Award.

(b) Reversion of Shares to the Share Reserve.

(i) **Shares Available For Subsequent Issuance.** If (A) any shares of Common Stock subject to a Stock Award are not issued because such Stock Award or any portion thereof expires or otherwise terminates without all of the shares covered by such Stock Award having been issued or is settled in cash (*i.e.*, the Participant receives cash rather than stock), (B) any shares of Common Stock issued pursuant to a Stock Award are forfeited back to or repurchased by the Company because of the failure to meet a contingency or condition required for the vesting of such shares, or (C) with respect to a Full Value Award, any shares of Common Stock are reacquired or withheld (or not issued) by the Company to satisfy a tax withholding obligation in connection with such Full Value Award, such shares will again become available for issuance under the Plan (collectively, the "**2018 Plan Returning Shares**"). For each (1) 2018 Plan Returning Share subject to a Full Value Award or (2) Prior Plans' Returning Share subject to a stock award other than a Prior Plans' Appreciation Award, the number of shares of Common Stock available for issuance under the Plan will increase by one and one tenths (1.1) shares.

(ii) **Shares Not Available For Subsequent Issuance.** Any shares of Common Stock reacquired or withheld (or not issued) by the Company to satisfy the exercise or purchase price of

a Stock Award will no longer be available for issuance under the Plan, including any shares subject to a Stock Award that are not delivered to a Participant because such Stock Award is exercised through a reduction of shares subject to such Stock Award (*i.e.*, “net exercised”). In addition, any shares reacquired or withheld (or not issued) by the Company to satisfy a tax withholding obligation in connection with an Option or Stock Appreciation Right or a Prior Plans’ Appreciation Award, or any shares repurchased by the Company on the open market with the proceeds of the exercise or strike price of an Option or Stock Appreciation Right or a Prior Plans’ Appreciation Award will no longer be available for issuance under the Plan.

(c) Incentive Stock Option Limit. Subject to the Share Reserve and Section 9(a) relating to Capitalization Adjustments, the aggregate maximum number of shares of Common Stock that may be issued pursuant to the exercise of Incentive Stock Options will be 9,000,000 shares of Common Stock.

(d) Source of Shares. The stock issuable under the Plan will be shares of authorized but unissued or reacquired Common Stock, including shares repurchased by the Company on the open market or otherwise.

4. ELIGIBILITY.

(a) Eligibility for Specific Stock Awards. Incentive Stock Options may be granted only to employees of the Company or a “parent corporation” or “subsidiary corporation” thereof (as such terms are defined in Sections 424(e) and 424(f) of the Code). Stock Awards other than Incentive Stock Options may be granted to Employees, Directors and Consultants; provided, however, that Stock Awards may not be granted to Employees, Directors and Consultants who are providing Continuous Service only to any “parent” of the Company, as such term is defined in Rule 405, unless (i) the stock underlying such Stock Awards is treated as “service recipient stock” under Section 409A of the Code (for example, because the Stock Awards are granted pursuant to a corporate transaction such as a spin off transaction) or (ii) the Company, in consultation with its legal counsel, has determined that such Stock Awards are otherwise exempt from or alternatively comply with the distribution requirements of Section 409A of the Code.

(b) Ten Percent Stockholders. A Ten Percent Stockholder will not be granted an Incentive Stock Option unless the exercise price of such Option is at least 110% of the Fair Market Value on the date of grant and the Option is not exercisable after the expiration of five years from the date of grant.

(b) Limitation on Grants to Non-Employee Directors. The maximum number of shares of Common Stock subject to Stock Awards granted under the Plan or otherwise during any one calendar year to any Non-Employee Director, taken together with any cash fees paid by the Company to such Non-Employee Director during such calendar year for service on the Board, will not exceed \$500,000 in total value (calculating the value of any such Stock Awards based on the grant date fair value of such Stock Awards for financial reporting purposes).

5. PROVISIONS RELATING TO OPTIONS AND STOCK APPRECIATION RIGHTS.

Each Option or SAR will be in such form and will contain such terms and conditions as the Board deems appropriate. All Options will be separately designated Incentive Stock Options or Nonstatutory Stock Options at the time of grant, and, if certificates are issued, a separate certificate or certificates will be issued for shares of Common Stock purchased on exercise of each type of Option. If an Option is not specifically designated as an Incentive Stock Option, or if an Option is designated as an Incentive Stock Option but some portion or all of the Option fails to qualify as an Incentive Stock Option under the applicable rules, then the Option (or portion thereof) will be a Nonstatutory Stock Option. The provisions of separate Options or SARs need not be identical; *provided, however*, that each Stock Award Agreement will conform to (through incorporation of provisions hereof by reference in the applicable Stock Award Agreement or otherwise) the substance of each of the following provisions:

(a) Term. Subject to the provisions of Section 4(b) regarding Ten Percent Stockholders, no Option or SAR will be exercisable after the expiration of ten years from the date of its grant or such shorter period specified in the Stock Award Agreement.

(b) Exercise Price. Subject to the provisions of Section 4(b) regarding Ten Percent Stockholders, the exercise or strike price of each Option or SAR will be not less than 100% of the Fair Market Value of the Common Stock subject to the Option or SAR on the date the Stock Award is granted. Notwithstanding the foregoing, an Option or SAR may be granted with an exercise or strike price lower than 100% of the Fair Market Value of the Common Stock subject to the Stock Award if such Stock Award is granted pursuant to an assumption of or substitution for another option or stock appreciation right pursuant to a Corporate Transaction and in a manner consistent with the provisions of Section 409A of the Code and, if applicable, Section 424(a) of the Code. Each SAR will be denominated in shares of Common Stock equivalents.

(c) Purchase Price for Options. The purchase price of Common Stock acquired pursuant to the exercise of an Option may be paid, to the extent permitted by applicable law and as determined by the Board in its sole discretion, by any combination of the methods of payment set forth below. The Board will have the authority to grant Options that do not permit all of the following methods of payment (or that otherwise restrict the ability to use certain methods) and to grant Options that require the consent of the Company to use a particular method of payment. The permitted methods of payment are as follows:

(i) by cash, check, bank draft or money order payable to the Company;

(ii) pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board that, prior to the issuance of the Common Stock subject to the Option, results in either the receipt of cash (or check) by the Company or the receipt of irrevocable instructions to pay the aggregate exercise price to the Company from the sales proceeds;

(iii) by delivery to the Company (either by actual delivery or attestation) of shares of Common Stock;

(iv) if an Option is a Nonstatutory Stock Option, by a “net exercise” arrangement pursuant to which the Company will reduce the number of shares of Common Stock issuable upon exercise by the largest whole number of shares with a Fair Market Value that does not exceed the aggregate exercise price; *provided, however*, that the Company will accept a cash or other payment from the Participant to the extent of any remaining balance of the aggregate exercise price not satisfied by such reduction in the number of whole shares to be issued. Shares of Common Stock will no longer be subject to an Option and will not be exercisable thereafter to the extent that (A) shares issuable upon exercise are used to pay the exercise price pursuant to the “net exercise,” (B) shares are delivered to the Participant as a result of such exercise, and (C) shares are withheld to satisfy tax withholding obligations; or

(v) in any other form of legal consideration that may be acceptable to the Board and specified in the applicable Stock Award Agreement.

(d) Exercise and Payment of a SAR. To exercise any outstanding SAR, the Participant must provide written notice of exercise to the Company in compliance with the provisions of the Stock Award Agreement evidencing such SAR. The appreciation distribution payable on the exercise of a SAR will be not greater than an amount equal to the excess of (A) the aggregate Fair Market Value (on the date of the exercise of the SAR) of a number of shares of Common Stock equal to the number of Common Stock equivalents in which the Participant is vested under such SAR, and with respect to which the Participant is exercising the SAR on such date, over (B) the aggregate strike price of the number of Common Stock equivalents with respect to which the Participant is exercising the SAR on such date. The appreciation distribution may be paid in Common Stock, in cash, in any combination of the two or in any other form of consideration, as determined by the Board and contained in the Stock Award Agreement evidencing such SAR.

(e) Transferability of Options and SARs. The Board may, in its sole discretion, impose such limitations on the transferability of Options and SARs as the Board will determine. In the absence of such a determination by the Board to the contrary, the restrictions set forth in this Section 5(e) on the transferability of Options and SARs will apply. Notwithstanding the foregoing or anything in the Plan or a Stock Award Agreement to the contrary, no Option or SAR may be transferred to any financial institution without prior stockholder approval.

(i) Restrictions on Transfer. An Option or SAR will not be transferable except by will or by the laws of descent and distribution (and pursuant to Sections 5(e)(ii) and 5(e)(iii) below) and will be exercisable during the lifetime of the Participant only by the Participant. Subject to the foregoing paragraph, the Board may permit transfer of the Option or SAR in a manner that is not prohibited by applicable tax and securities laws. Except as explicitly provided in the Plan, neither an Option nor a SAR may be transferred for consideration.

(ii) Domestic Relations Orders. Subject to the approval of the Board or a duly authorized Officer, an Option or SAR may be transferred pursuant to the terms of a domestic relations order, official marital settlement agreement or other divorce or separation instrument as permitted by Treasury Regulations Section 1.421-1(b)(2). If an Option is an Incentive Stock Option, such Option may be deemed to be a Nonstatutory Stock Option as a result of such transfer.

(iii) Beneficiary Designation. Subject to the approval of the Board or a duly authorized Officer, a Participant may, by delivering written notice to the Company, in a form approved by the Company (or the designated broker), designate a third party who, upon the death of the Participant, will thereafter be entitled to exercise the Option or SAR and receive the Common Stock or other consideration resulting from such exercise. In the absence of such a designation, upon the death of the Participant, the executor or administrator of the Participant's estate will be entitled to exercise the Option or SAR and receive the Common Stock or other consideration resulting from such exercise. However, the Company may prohibit designation of a beneficiary at any time, including due to any conclusion by the Company that such designation would be inconsistent with the provisions of applicable laws.

(f) Vesting Generally. The total number of shares of Common Stock subject to an Option or SAR may vest and become exercisable in periodic installments that may or may not be equal. The Option or SAR may be subject to such other terms and conditions on the time or times when it may or may not be exercised (which may be based on the satisfaction of Performance Goals or other criteria) as the Board may deem appropriate. The vesting provisions of individual Options or SARs may vary. The provisions of this Section 5(f) are subject to any Option or SAR provisions governing the minimum number of shares of Common Stock as to which an Option or SAR may be exercised.

(g) Termination of Continuous Service. Except as otherwise provided in the applicable Stock Award Agreement or other agreement between the Participant and the Company or an Affiliate, if a Participant's Continuous Service terminates (other than for Cause and other than upon the Participant's death or Disability), the Participant may exercise his or her Option or SAR (to the extent that the Participant was entitled to exercise such Option or SAR as of the date of termination of Continuous Service), but only within such period of time ending on the earlier of (i) the date three months following such termination of Continuous Service (or such longer or shorter period specified in the Stock Award Agreement), and (ii) the expiration of the term of the Option or SAR as set forth in the Stock Award Agreement. If, after termination of Continuous Service, the Participant does not exercise his or her Option or SAR (as applicable) within the applicable time frame, the Option or SAR (as applicable) will terminate.

(h) Extension of Termination Date. Except as otherwise provided in the applicable Stock Award Agreement or other agreement between the Participant and the Company or an Affiliate, if the exercise of an Option or SAR following the termination of the Participant's Continuous Service (other than for Cause and other than upon the Participant's death or Disability) would be prohibited at any time solely because the issuance of shares of Common Stock would violate the registration requirements under the Securities Act, then the Option or SAR will terminate on the earlier of (i) the expiration of a total period of time (that need not be consecutive) equal to the applicable post-termination exercise period after the termination of the Participant's Continuous Service during which the exercise of the Option or SAR would not be in violation of such registration requirements, or (ii) the expiration of the term of the Option or SAR as set forth in the applicable Stock Award Agreement. In addition, unless otherwise provided in a Participant's Stock Award Agreement, if the sale of any Common Stock received upon exercise of an Option or SAR following the termination of the Participant's Continuous Service (other than for Cause) would violate the Company's insider trading policy, then the Option or SAR will terminate on the earlier of (i) the expiration of a period of time (that need not be consecutive) equal to the applicable

post-termination exercise period after the termination of the Participant's Continuous Service during which the sale of the Common Stock received upon exercise of the Option or SAR would not be in violation of the Company's insider trading policy, or (ii) the expiration of the term of the Option or SAR as set forth in the applicable Stock Award Agreement.

(i) Disability of Participant. Except as otherwise provided in the applicable Stock Award Agreement or other agreement between the Participant and the Company or an Affiliate, if a Participant's Continuous Service terminates as a result of the Participant's Disability, the Participant may exercise his or her Option or SAR (to the extent that the Participant was entitled to exercise such Option or SAR as of the date of termination of Continuous Service), but only within such period of time ending on the earlier of (i) the date 12 months following such termination of Continuous Service (or such longer or shorter period specified in the Stock Award Agreement), and (ii) the expiration of the term of the Option or SAR as set forth in the Stock Award Agreement. If, after termination of Continuous Service, the Participant does not exercise his or her Option or SAR (as applicable) within the applicable time frame, the Option or SAR (as applicable) will terminate.

(j) Death of Participant. Except as otherwise provided in the applicable Stock Award Agreement or other agreement between the Participant and the Company or an Affiliate, if (i) a Participant's Continuous Service terminates as a result of the Participant's death, or (ii) the Participant dies within the period (if any) specified in the Stock Award Agreement for exercisability after the termination of the Participant's Continuous Service (for a reason other than death), then the Participant's Option or SAR may be exercised (to the extent that the Participant was entitled to exercise such Option or SAR as of the date of death) by the Participant's estate, by a person who acquired the right to exercise the Option or SAR by bequest or inheritance or by a person designated to exercise the Option or SAR upon the Participant's death, but only within such period of time ending on the earlier of (i) the date 18 months following the date of death (or such longer or shorter period specified in the Stock Award Agreement), and (ii) the expiration of the term of such Option or SAR as set forth in the Stock Award Agreement. If, after the Participant's death, the Option or SAR (as applicable) is not exercised within the applicable time frame, the Option or SAR (as applicable) will terminate.

(k) Termination due to Retirement. Except as otherwise provided in the applicable Award Agreement or other agreement between the Participant and the Company, if a Participant's Continuous Service terminates as a result of the Participant's Retirement, the Participant may exercise his or her Option or SAR (to the extent that the Participant was entitled to exercise such Option or SAR as of the date of termination of Continuous Service), but only within such period of time ending on the earlier of (i) the date twenty-four (24) months following such termination of Continuous Service (or such longer or shorter period specified in the Award Agreement), and (ii) the expiration of the term of the Option or SAR as set forth in the Award Agreement. If, after termination of Continuous Service, the Participant does not exercise his or her Option or SAR within the applicable time frame, the Option or SAR (as applicable) will terminate.

(l) Termination for Cause. Except as explicitly provided otherwise in a Participant's Stock Award Agreement or other individual written agreement between the Participant and the Company or an Affiliate, if a Participant's Continuous Service is terminated for Cause, the Participant's Option or SAR will terminate immediately upon such termination of Continuous

Service, and the Participant will be prohibited from exercising his or her Option or SAR from and after the time of such termination of Continuous Service.

(m)Non-Exempt Employees. If an Option or SAR is granted to an Employee who is a non-exempt employee for purposes of the Fair Labor Standards Act of 1938, as amended, the Option or SAR will not be first exercisable for any shares of Common Stock until at least six months following the date of grant of the Option or SAR (although the Stock Award may vest prior to such date). Consistent with the provisions of the Worker Economic Opportunity Act, (i) if such non-exempt employee dies or suffers a Disability, (ii) upon a Corporate Transaction in which such Option or SAR is not assumed, continued, or substituted, (iii) upon a Change in Control, or (iv) upon the Participant's retirement (as such term may be defined in the Participant's Stock Award Agreement, in another agreement between the Participant and the Company or an Affiliate, or, if no such definition, in accordance with the Company's or Affiliate's then current employment policies and guidelines), the vested portion of any Options and SARs may be exercised earlier than six months following the date of grant. The foregoing provision is intended to operate so that any income derived by a non-exempt employee in connection with the exercise or vesting of an Option or SAR will be exempt from his or her regular rate of pay. To the extent permitted and/or required for compliance with the Worker Economic Opportunity Act to ensure that any income derived by a non-exempt employee in connection with the exercise, vesting or issuance of any shares under any other Stock Award will be exempt from the employee's regular rate of pay, the provisions of this Section 5(l) will apply to all Stock Awards and are hereby incorporated by reference into such Stock Award Agreements.

6. PROVISIONS OF STOCK AWARDS OTHER THAN OPTIONS AND SARs.

(a)Restricted Stock Awards. Each Restricted Stock Award Agreement will be in such form and will contain such terms and conditions as the Board deems appropriate. To the extent consistent with the Company's bylaws, at the Board's election, shares of Common Stock underlying a Restricted Stock Award may be (i) held in book entry form subject to the Company's instructions until any restrictions relating to the Restricted Stock Award lapse, or (ii) evidenced by a certificate, which certificate will be held in such form and manner as determined by the Board. The terms and conditions of Restricted Stock Award Agreements may change from time to time, and the terms and conditions of separate Restricted Stock Award Agreements need not be identical. Each Restricted Stock Award Agreement will conform to (through incorporation of the provisions hereof by reference in the agreement or otherwise) the substance of each of the following provisions:

(i) Consideration. A Restricted Stock Award may be awarded in consideration for (A) cash, check, bank draft or money order payable to the Company, (B) past services to the Company or an Affiliate, or (C) any other form of legal consideration (including future services) that may be acceptable to the Board, in its sole discretion, and permissible under applicable law.

(ii) Vesting. Shares of Common Stock awarded under the Restricted Stock Award Agreement may be subject to forfeiture to the Company in accordance with a vesting schedule to be determined by the Board.

(iii) Termination of Participant's Continuous Service. If a Participant's Continuous Service terminates, the Company may receive through a forfeiture condition or a repurchase right any or all of the shares of Common Stock held by the Participant as of the date of termination of Continuous Service under the terms of the Restricted Stock Award Agreement.

(iv) Transferability. Rights to acquire shares of Common Stock under the Restricted Stock Award Agreement will be transferable by the Participant only upon such terms and conditions as are set forth in the Restricted Stock Award Agreement, as the Board will determine in its sole discretion, so long as Common Stock awarded under the Restricted Stock Award Agreement remains subject to the terms of the Restricted Stock Award Agreement. Notwithstanding the foregoing or anything in the Plan or a Restricted Stock Award Agreement to the contrary, no Restricted Stock Award may be transferred to any financial institution without prior stockholder approval.

(b) Restricted Stock Unit Awards. Each Restricted Stock Unit Award Agreement will be in such form and will contain such terms and conditions as the Board deems appropriate. The terms and conditions of Restricted Stock Unit Award Agreements may change from time to time, and the terms and conditions of separate Restricted Stock Unit Award Agreements need not be identical. Each Restricted Stock Unit Award Agreement will conform to (through incorporation of the provisions hereof by reference in the Agreement or otherwise) the substance of each of the following provisions:

(i) Consideration. At the time of grant of a Restricted Stock Unit Award, the Board will determine the consideration, if any, to be paid by the Participant upon delivery of each share of Common Stock subject to the Restricted Stock Unit Award. The consideration to be paid (if any) by the Participant for each share of Common Stock subject to a Restricted Stock Unit Award may be paid in any form of legal consideration that may be acceptable to the Board, in its sole discretion, and permissible under applicable law.

(ii) Vesting. At the time of the grant of a Restricted Stock Unit Award, the Board may impose such restrictions on or conditions to the vesting of the Restricted Stock Unit Award as it, in its sole discretion, deems appropriate.

(iii) Payment. A Restricted Stock Unit Award may be settled by the delivery of shares of Common Stock, their cash equivalent, any combination thereof or in any other form of consideration, as determined by the Board and contained in the Restricted Stock Unit Award Agreement.

(iv) Additional Restrictions. At the time of the grant of a Restricted Stock Unit Award, the Board, as it deems appropriate, may impose such restrictions or conditions that delay the delivery of the shares of Common Stock (or their cash equivalent) subject to a Restricted Stock Unit Award to a time after the vesting of such Restricted Stock Unit Award.

(v) Termination of Participant's Continuous Service. Except as otherwise provided in the applicable Restricted Stock Unit Award Agreement, such portion of the Restricted Stock Unit Award that has not vested will be forfeited upon the Participant's termination of Continuous Service.

(c) Performance Stock Awards.

(i) Performance Stock Awards. A Performance Stock Award is a Stock Award that is payable (including that may be granted, vest or be exercised) contingent upon the attainment during a Performance Period of certain Performance Goals. A Performance Stock Award may, but need not, require the Participant's completion of a specified period of Continuous Service. The length of any Performance Period, the Performance Goals to be achieved during the Performance Period, and the measure of whether and to what degree such Performance Goals have been attained will be conclusively determined by the Board, in its sole discretion. In addition, to the extent permitted by applicable law and the applicable Stock Award Agreement, the Board may determine that cash may be used in payment of Performance Stock Awards.

(ii) Discretion. The Board retains the discretion to reduce or eliminate the compensation or economic benefit due upon the attainment of any Performance Goals and to define the manner of calculating the Performance Criteria it selects to use for a Performance Period.

(d) Other Stock Awards. Other forms of Stock Awards valued in whole or in part by reference to, or otherwise based on, Common Stock, including the appreciation in value thereof (*e.g.*, options or stock appreciation rights with an exercise price or strike price less than 100% of the Fair Market Value of the Common Stock at the time of grant) may be granted either alone or in addition to Stock Awards granted under Section 5 and this Section 6. Subject to the provisions of the Plan (including, but not limited to, Section 2(g)), the Board will have sole and complete authority to determine the persons to whom and the time or times at which such Other Stock Awards will be granted, the number of shares of Common Stock (or the cash equivalent thereof) to be granted pursuant to such Other Stock Awards and all other terms and conditions of such Other Stock Awards.

7. COVENANTS OF THE COMPANY.

(a) Availability of Shares. The Company will keep available at all times the number of shares of Common Stock reasonably required to satisfy then-outstanding Stock Awards.

(b) Securities Law Compliance. The Company will seek to obtain from each regulatory commission or agency having jurisdiction over the Plan the authority required to grant Stock Awards and to issue and sell shares of Common Stock upon exercise of the Stock Awards; *provided, however*, that this undertaking will not require the Company to register under the Securities Act the Plan, any Stock Award or any Common Stock issued or issuable pursuant to any such Stock Award. If, after reasonable efforts and at a reasonable cost, the Company is unable to obtain from any such regulatory commission or agency the authority that counsel for the Company deems necessary for the lawful issuance and sale of Common Stock under the Plan, the Company will be relieved from any liability for failure to issue and sell Common Stock upon exercise of such Stock Awards unless and until such authority is obtained. A Participant will not be eligible for the grant of a Stock Award or the subsequent issuance of cash or Common Stock pursuant to the Stock Award if such grant or issuance would be in violation of any applicable securities law.

(c) No Obligation to Notify or Minimize Taxes. The Company will have no duty or obligation to any Participant to advise such holder as to the time or manner of exercising a Stock Award. Furthermore, the Company will have no duty or obligation to warn or otherwise advise such holder of a pending termination or expiration of a Stock Award or a possible period in which the Stock Award may not be exercised. The Company has no duty or obligation to minimize the tax consequences of a Stock Award to the holder of such Stock Award.

8. MISCELLANEOUS.

(a) Use of Proceeds from Sales of Common Stock. Proceeds from the sale of shares of Common Stock issued pursuant to Stock Awards will constitute general funds of the Company.

(b) Corporate Action Constituting Grant of Stock Awards. Corporate action constituting a grant by the Company of a Stock Award to any Participant will be deemed completed as of the date of such corporate action, unless otherwise determined by the Board, regardless of when the instrument, certificate, or letter evidencing the Stock Award is communicated to, or actually received or accepted by, the Participant. In the event that the corporate records (*e.g.*, Board consents, resolutions or minutes) documenting the corporate action constituting the grant contain terms (*e.g.*, exercise price, vesting schedule or number of shares) that are inconsistent with those in the Stock Award Agreement or related grant documents as a result of a clerical error in the papering of the Stock Award Agreement or related grant documents, the corporate records will control and the Participant will have no legally binding right to the incorrect terms in the Stock Award Agreement or related grant documents.

(c) Stockholder Rights. No Participant will be deemed to be the holder of, or to have any of the rights of a holder with respect to, any shares of Common Stock subject to a Stock Award unless and until (i) such Participant has satisfied all requirements for exercise of, or the issuance of shares of Common Stock under, the Stock Award pursuant to its terms, and (ii) the issuance of the Common Stock subject to such Stock Award has been entered into the books and records of the Company.

(d) No Employment or Other Service Rights. Nothing in the Plan, any Stock Award Agreement or any other instrument executed thereunder or in connection with any Stock Award granted pursuant thereto will confer upon any Participant any right to continue to serve the Company or an Affiliate in the capacity in effect at the time the Stock Award was granted or will affect the right of the Company or an Affiliate to terminate (i) the employment of an Employee with or without notice and with or without cause, (ii) the service of a Consultant pursuant to the terms of such Consultant's agreement with the Company or an Affiliate, or (iii) the service of a Director pursuant to the bylaws of the Company or an Affiliate, and any applicable provisions of the corporate law of the state in which the Company or the Affiliate is incorporated, as the case may be.

(e) Change in Time Commitment. In the event a Participant's regular level of time commitment in the performance of his or her services for the Company or any Affiliate is reduced (for example, and without limitation, if the Participant is an Employee of the Company and the Employee has a change in status from a full-time Employee to a part-time Employee) after the date of grant of any Stock Award to the Participant, the Board has the right in its sole discretion to (x)

make a corresponding reduction in the number of shares or cash amount subject to any portion of such Stock Award that is scheduled to vest or become payable after the date of such change in time commitment, and (y) in lieu of or in combination with such a reduction, extend the vesting or payment schedule applicable to such Stock Award. In the event of any such reduction, the Participant will have no right with respect to any portion of the Stock Award that is so reduced or extended.

(f) Incentive Stock Option Limitations. To the extent that the aggregate Fair Market Value (determined at the time of grant) of Common Stock with respect to which Incentive Stock Options are exercisable for the first time by any Optionholder during any calendar year (under all plans of the Company and any Affiliates) exceeds \$100,000 (or such other limit established in the Code) or otherwise does not comply with the rules governing Incentive Stock Options, the Options or portions thereof that exceed such limit (according to the order in which they were granted) or otherwise do not comply with such rules will be treated as Nonstatutory Stock Options, notwithstanding any contrary provision of the applicable Option Agreement(s).

(g) Investment Assurances. The Company may require a Participant, as a condition of exercising or acquiring Common Stock under any Stock Award, (i) to give written assurances satisfactory to the Company as to the Participant's knowledge and experience in financial and business matters and/or to employ a purchaser representative reasonably satisfactory to the Company who is knowledgeable and experienced in financial and business matters and that he or she is capable of evaluating, alone or together with the purchaser representative, the merits and risks of exercising the Stock Award; and (ii) to give written assurances satisfactory to the Company stating that the Participant is acquiring Common Stock subject to the Stock Award for the Participant's own account and not with any present intention of selling or otherwise distributing the Common Stock. The foregoing requirements, and any assurances given pursuant to such requirements, will be inoperative if (A) the issuance of the shares upon the exercise or acquisition of Common Stock under the Stock Award has been registered under a then currently effective registration statement under the Securities Act, or (B) as to any particular requirement, a determination is made by counsel for the Company that such requirement need not be met in the circumstances under the then applicable securities laws. The Company may, upon advice of counsel to the Company, place legends on stock certificates issued under the Plan as such counsel deems necessary or appropriate in order to comply with applicable securities laws, including, but not limited to, legends restricting the transfer of the Common Stock.

(h) Withholding Obligations. Unless prohibited by the terms of a Stock Award Agreement, the Company may, in its sole discretion, satisfy any federal, state or local tax withholding obligation relating to a Stock Award by any of the following means or by a combination of such means: (i) causing the Participant to tender a cash payment; (ii) withholding shares of Common Stock from the shares of Common Stock issued or otherwise issuable to the Participant in connection with the Stock Award; *provided, however*, that no shares of Common Stock are withheld with a value exceeding the maximum amount of tax that may be required to be withheld by law (or such other amount as may be permitted while still avoiding classification of the Stock Award as a liability for financial accounting purposes); (iii) withholding cash from a Stock Award settled in cash; (iv) withholding payment from any amounts otherwise payable to the Participant; or (v) by such other method as may be set forth in the Stock Award Agreement.

(i) Electronic Delivery. Any reference herein to a “written” agreement or document will include any agreement or document delivered electronically, filed publicly at www.sec.gov (or any successor website thereto) or posted on the Company’s intranet (or other shared electronic medium controlled by the Company to which the Participant has access).

(j) Deferrals. To the extent permitted by applicable law, the Board, in its sole discretion, may determine that the delivery of Common Stock or the payment of cash, upon the exercise, vesting or settlement of all or a portion of any Stock Award may be deferred and may establish programs and procedures for deferral elections to be made by Participants. Deferrals by Participants will be made in accordance with Section 409A of the Code. Consistent with Section 409A of the Code, the Board may provide for distributions while a Participant is still an employee or otherwise providing services to the Company or an Affiliate. The Board is authorized to make deferrals of Stock Awards and determine when, and in what annual percentages, Participants may receive payments, including lump sum payments, following the Participant’s termination of Continuous Service, and implement such other terms and conditions consistent with the provisions of the Plan and in accordance with applicable law.

(k) Compliance with Section 409A of the Code. Unless otherwise expressly provided for in a Stock Award Agreement, the Plan and Stock Award Agreements will be interpreted to the greatest extent possible in a manner that makes the Plan and the Stock Awards granted hereunder exempt from Section 409A of the Code, and, to the extent not so exempt, in compliance with Section 409A of the Code. To the extent that the Board determines that any Stock Award granted hereunder is not exempt from and is therefore subject to Section 409A of the Code, the Stock Award Agreement evidencing such Stock Award will incorporate the terms and conditions necessary to avoid the consequences specified in Section 409A(a)(1) of the Code, and, to the extent applicable, the Plan and Stock Award Agreements will be interpreted in accordance with the requirements of Section 409A of the Code. Notwithstanding anything to the contrary in this Plan (and unless the Stock Award Agreement specifically provides otherwise), if the shares of Common Stock are publicly traded and a Participant holding a Stock Award that constitutes “deferred compensation” under Section 409A of the Code is a “specified employee” for purposes of Section 409A of the Code, no distribution or payment of any amount will be made upon a “separation from service” before a date that is six months following the date of such Participant’s “separation from service” (as defined in Section 409A of the Code without regard to alternative definitions thereunder) or, if earlier, the date of the Participant’s death.

(l) Clawback/Recovery. All Stock Awards granted under the Plan will be subject to recoupment in accordance with any clawback policy that the Company is required to adopt pursuant to the listing standards of any national securities exchange or association on which the Company’s securities are listed or as is otherwise required by the Dodd-Frank Wall Street Reform and Consumer Protection Act or other applicable law. In addition, the Board may impose such other clawback, recovery or recoupment provisions in a Stock Award Agreement as the Board determines necessary or appropriate, including but not limited to a reacquisition right in respect of previously acquired shares of Common Stock or other cash or property upon the occurrence of Cause. No recovery of compensation under such a clawback policy will be an event giving rise to a right to resign for “good reason” or “constructive termination” (or similar term) under any agreement with the Company or an Affiliate.

9. ADJUSTMENTS UPON CHANGES IN COMMON STOCK; OTHER CORPORATE EVENTS.

(a) Capitalization Adjustments. In the event of a Capitalization Adjustment, the Board will appropriately and proportionately adjust: (i) the class(es) and maximum number of securities subject to the Plan pursuant to Section 3(a), (ii) the class(es) and maximum number of securities that may be issued pursuant to the exercise of Incentive Stock Options pursuant to Section 3(c), and (iii) the class(es) and number of securities and price per share of stock subject to outstanding Stock Awards. The Board will make such adjustments, and its determination will be final, binding and conclusive.

(b) Dissolution or Liquidation. Except as otherwise provided in the Stock Award Agreement, in the event of a dissolution or liquidation of the Company, all outstanding Stock Awards (other than Stock Awards consisting of vested and outstanding shares of Common Stock not subject to a forfeiture condition or the Company's right of repurchase) will terminate immediately prior to the completion of such dissolution or liquidation, and the shares of Common Stock subject to the Company's repurchase rights or subject to a forfeiture condition may be repurchased or reacquired by the Company notwithstanding the fact that the holder of such Stock Award is providing Continuous Service, *provided, however*, that the Board may, in its sole discretion, cause some or all Stock Awards to become fully vested, exercisable and/or no longer subject to repurchase or forfeiture (to the extent such Stock Awards have not previously expired or terminated) before the dissolution or liquidation is completed but contingent on its completion.

(c) Corporate Transactions. The following provisions will apply to Stock Awards in the event of a Transaction unless otherwise provided in the Stock Award Agreement or any other written agreement between the Company or any Affiliate and the Participant or unless otherwise expressly provided by the Board at the time of grant of a Stock Award. In the event of a Transaction, then, notwithstanding any other provision of the Plan, the Board may take one or more of the following actions with respect to Stock Awards, contingent upon the closing or completion of the Transaction:

(i) arrange for the surviving corporation or acquiring corporation (or the surviving or acquiring corporation's parent company) to assume or continue the Stock Award or to substitute a similar stock award for the Stock Award (including, but not limited to, an award to acquire the same consideration paid to the stockholders of the Company pursuant to the Transaction);

(ii) arrange for the assignment of any reacquisition or repurchase rights held by the Company in respect of Common Stock issued pursuant to the Stock Award to the surviving corporation or acquiring corporation (or the surviving or acquiring corporation's parent company);

(iii) accelerate the vesting, in whole or in part, of the Stock Award (and, if applicable, the time at which the Stock Award may be exercised) to a date prior to the effective time of such Transaction as the Board determines (or, if the Board does not determine such a date, to the date that is five (5) days prior to the effective date of the Transaction), with such Stock Award terminating if not exercised (if applicable) at or prior to the effective time of the Transaction; *provided, however*, that the Board may require Participants to complete and deliver to the Company a notice of exercise before the effective date of a Transaction, which exercise is contingent upon the effectiveness of such Transaction;

(iv) arrange for the lapse, in whole or in part, of any reacquisition or repurchase rights held by the Company with respect to the Stock Award;

(v) cancel or arrange for the cancellation of the Stock Award, to the extent not vested or not exercised prior to the effective time of the Transaction, in exchange for such cash consideration, if any, as the Board, in its sole discretion, may consider appropriate; and

(vi) make a payment, in such form as may be determined by the Board equal to the excess, if any, of (A) the value of the property the Participant would have received upon the exercise of the Stock Award immediately prior to the effective time of the Transaction, over (B) any exercise price payable by such holder in connection with such exercise. For clarity, this payment may be zero (\$0) if the value of the property is equal to or less than the exercise price. Payments under this provision may be delayed to the same extent that payment of consideration to the holders of the Company's Common Stock in connection with the Transaction is delayed as a result of escrows, earn outs, holdbacks or any other contingencies.

The Board need not take the same action or actions with respect to all Stock Awards or portions thereof or with respect to all Participants. The Board may take different actions with respect to the vested and unvested portions of a Stock Award.

(d)Change in Control. A Stock Award may be subject to additional acceleration of vesting and exercisability upon or after a Change in Control as may be provided in the Stock Award Agreement for such Stock Award or as may be provided in any other written agreement between the Company or any Affiliate and the Participant, but in the absence of such provision, no such acceleration will occur.

10. TERMINATION OR SUSPENSION OF THE PLAN.

(a) The Board may suspend or terminate the Plan at any time. No Incentive Stock Option will be granted after the tenth anniversary of the earlier of (i) the date the Plan is adopted by the Board, or (ii) the date the Plan is approved by the stockholders of the Company. No Stock Awards may be granted under the Plan while the Plan is suspended or after it is terminated.

(b)No Impairment of Rights. Suspension or termination of the Plan will not materially impair rights and obligations under any Stock Award granted while the Plan is in effect except with the written consent of the affected Participant or as otherwise permitted in the Plan.

11. EFFECTIVE DATE OF PLAN.

This Plan will become effective on the Effective Date.

12. CHOICE OF LAW.

The laws of the State of Delaware will govern all questions concerning the construction, validity and interpretation of this Plan, without regard to that state's conflict of laws rules.

13. DEFINITIONS. As used in the Plan, the following definitions will apply to the capitalized terms indicated below:

(a) “Affiliate” means, at the time of determination, any “parent” or “subsidiary” of the Company as such terms are defined in Rule 405. The Board will have the authority to determine the time or times at which “parent” or “subsidiary” status is determined within the foregoing definition.

(b) “Board” means the Board of Directors of the Company.

(c) “Capitalization Adjustment” means any change that is made in, or other events that occur with respect to, the Common Stock subject to the Plan or subject to any Stock Award after the Effective Date without the receipt of consideration by the Company through merger, consolidation, reorganization, recapitalization, reincorporation, stock dividend, dividend in property other than cash, large nonrecurring cash dividend, stock split, reverse stock split, liquidating dividend, combination of shares, exchange of shares, change in corporate structure or any similar equity restructuring transaction, as that term is used in Statement of Financial Accounting Standards Board Accounting Standards Codification Topic 718 (or any successor thereto). Notwithstanding the foregoing, the conversion of any convertible securities of the Company will not be treated as a Capitalization Adjustment.

(d) “Cause” will have the meaning ascribed to such term in any written agreement between the Participant and the Company defining such term and, in the absence of such agreement, such term means, with respect to a Participant, the occurrence of any of the following events: (i) such Participant’s commission of any felony or any crime involving fraud, dishonesty or moral turpitude under the laws of the United States or any state thereof; (ii) such Participant’s attempted commission of, or participation in, a fraud or act of dishonesty against the Company; (iii) such Participant’s intentional, material violation of any contract or agreement between the Participant and the Company or of any statutory duty owed to the Company; (iv) such Participant’s unauthorized use or disclosure of the Company’s confidential information or trade secrets; or (v) such Participant’s gross misconduct. The determination that a termination of the Participant’s Continuous Service is either for Cause or without Cause will be made by the Company, in its sole discretion. Any determination by the Company that the Continuous Service of a Participant was terminated with or without Cause for the purposes of outstanding Awards held by such Participant will have no effect upon any determination of the rights or obligations of the Company or such Participant for any other purpose.

(e) “Change in Control” means the occurrence, in a single transaction or in a series of related transactions, of any one or more of the following events:

(i) any Exchange Act Person becomes the Owner, directly or indirectly, of securities of the Company representing more than fifty percent (50%) of the combined voting power of the Company’s then outstanding securities other than by virtue of a merger, consolidation or similar transaction. Notwithstanding the foregoing, a Change in Control will not be deemed to occur (A) on account of the acquisition of securities of the Company directly from the Company, (B) on account of the acquisition of securities of the Company by an investor, any affiliate thereof or any other Exchange Act Person that acquires the Company’s securities in a transaction or series of

related transactions the primary purpose of which is to obtain financing for the Company through the issuance of equity securities, or (C) solely because the level of Ownership held by any Exchange Act Person (the “**Subject Person**”) exceeds the designated percentage threshold of the outstanding voting securities as a result of a repurchase or other acquisition of voting securities by the Company reducing the number of shares outstanding, provided that if a Change in Control would occur (but for the operation of this sentence) as a result of the acquisition of voting securities by the Company, and after such share acquisition, the Subject Person becomes the Owner of any additional voting securities that, assuming the repurchase or other acquisition had not occurred, increases the percentage of the then outstanding voting securities Owned by the Subject Person over the designated percentage threshold, then a Change in Control will be deemed to occur;

(ii) there is consummated a merger, consolidation or similar transaction involving (directly or indirectly) the Company and, immediately after the consummation of such merger, consolidation or similar transaction, the stockholders of the Company immediately prior thereto do not Own, directly or indirectly, either (A) outstanding voting securities representing more than fifty percent (50%) of the combined outstanding voting power of the surviving Entity in such merger, consolidation or similar transaction or (B) more than fifty percent (50%) of the combined outstanding voting power of the parent of the surviving Entity in such merger, consolidation or similar transaction, in each case in substantially the same proportions as their Ownership of the outstanding voting securities of the Company immediately prior to such transaction;

(iii) the stockholders of the Company approve or the Board approves a plan of complete dissolution or liquidation of the Company, or a complete dissolution or liquidation of the Company will otherwise occur, except for a liquidation into a parent corporation;

(iv) there is consummated a sale, lease, exclusive license or other disposition of all or substantially all of the consolidated assets of the Company and its Subsidiaries, other than a sale, lease, license or other disposition of all or substantially all of the consolidated assets of the Company and its Subsidiaries to an Entity, more than fifty percent (50%) of the combined voting power of the voting securities of which are Owned by stockholders of the Company in substantially the same proportions as their Ownership of the outstanding voting securities of the Company immediately prior to such sale, lease, license or other disposition; or

(v) individuals who, on the date the Plan is adopted by the Board, are members of the Board (the “**Incumbent Board**”) cease for any reason to constitute at least a majority of the members of the Board; *provided, however*, that if the appointment or election (or nomination for election) of any new Board member was approved or recommended by a majority vote of the members of the Incumbent Board then still in office, such new member will, for purposes of this Plan, be considered as a member of the Incumbent Board.

Notwithstanding the foregoing definition or any other provision of this Plan, (A) the term Change in Control will not include a sale of assets, merger or other transaction effected exclusively for the purpose of changing the domicile of the Company, and (B) the definition of Change in Control (or any analogous term) in an individual written agreement between the Company or any Affiliate and the Participant will supersede the foregoing definition with respect to Awards subject to such agreement; *provided, however*, that if no definition of Change in Control or any analogous term is set forth in such an individual written agreement, the foregoing definition will apply.

(f) “**Code**” means the Internal Revenue Code of 1986, as amended, including any applicable regulations and guidance thereunder.

(g) “**Committee**” means a committee of one or more Directors to whom authority has been delegated by the Board in accordance with Section 2(c).

(h) “**Common Stock**” means the common stock of the Company.

(i) “**Company**” means MannKind Corporation, a Delaware corporation.

(j) “**Consultant**” means any person, including an advisor, who is (i) engaged by the Company or an Affiliate to render consulting or advisory services and is compensated for such services, or (ii) serving as a member of the board of directors of an Affiliate and is compensated for such services. However, service solely as a Director, or payment of a fee for such service, will not cause a Director to be considered a “Consultant” for purposes of the Plan. Notwithstanding the foregoing, a person is treated as a Consultant under this Plan only if a Form S-8 Registration Statement under the Securities Act is available to register either the offer or the sale of the Company’s securities to such person.

(k) “**Continuous Service**” means that the Participant’s service with the Company or an Affiliate, whether as an Employee, Director or Consultant, is not interrupted or terminated. A change in the capacity in which the Participant renders service to the Company or an Affiliate as an Employee, Director or Consultant or a change in the Entity for which the Participant renders such service, provided that there is no interruption or termination of the Participant’s service with the Company or an Affiliate, will not terminate a Participant’s Continuous Service; *provided, however*, that if the Entity for which a Participant is rendering services ceases to qualify as an Affiliate, as determined by the Board, in its sole discretion, such Participant’s Continuous Service will be considered to have terminated on the date such Entity ceases to qualify as an Affiliate. For example, a change in status from an Employee of the Company to a Consultant of an Affiliate or to a Director will not constitute an interruption of Continuous Service. To the extent permitted by law, the Board or the chief executive officer of the Company, in that party’s sole discretion, may determine whether Continuous Service will be considered interrupted in the case of (i) any leave of absence approved by the Board or chief executive officer, including sick leave, military leave or any other personal leave, or (ii) transfers between the Company, an Affiliate, or their successors. Notwithstanding the foregoing, a leave of absence will be treated as Continuous Service for purposes of vesting in a Stock Award only to such extent as may be provided in the Company’s or Affiliate’s leave of absence policy, in the written terms of any leave of absence agreement or policy applicable to the Participant, or as otherwise required by law.

(l) “**Corporate Transaction**” means the consummation, in a single transaction or in a series of related transactions, of any one or more of the following events:

- (i) a sale, lease or other disposition of all or substantially all of the assets of the Company;
- (ii) a sale or other disposition of at least ninety percent (90%) of the outstanding securities of the Company;

(iii) a merger, consolidation or similar transaction in which the Company is not the surviving corporation; or

(iv) a reverse merger, consolidation or similar transaction in which the Company is the surviving corporation but the shares of Common Stock outstanding immediately preceding the merger, consolidation or similar transaction are converted by virtue of the merger, consolidation or similar transaction into other property, whether in the form of securities, cash or otherwise.

Notwithstanding the foregoing definition or any other provision of this Plan, the term Corporate Transaction will not include a sale of assets, merger or other transaction effected exclusively for the purpose of changing the domicile of the Company.

(m) “**Director**” means a member of the Board.

(n) “**Disability**” means, with respect to a Participant, the inability of such Participant to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment that can be expected to result in death or that has lasted or can be expected to last for a continuous period of not less than 12 months, as provided in Sections 22(e)(3) and 409A(a)(2)(c)(i) of the Code, and will be determined by the Board on the basis of such medical evidence as the Board deems warranted under the circumstances.

(o) “**Effective Date**” means the effective date of this Plan document, which is the date of the annual meeting of stockholders of the Company held in 2018, provided this Plan is approved by the Company’s stockholders at such meeting.

(p) “**Employee**” means any person employed by the Company or an Affiliate. However, service solely as a Director, or payment of a fee for such services, will not cause a Director to be considered an “Employee” for purposes of the Plan.

(q) “**Entity**” means a corporation, partnership, limited liability company or other entity.

(r) “**Exchange Act**” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

(s) “**Exchange Act Person**” means any natural person, Entity or “group” (within the meaning of Section 13(d) or 14(d) of the Exchange Act), except that “Exchange Act Person” will not include (i) the Company or any Subsidiary of the Company, (ii) any employee benefit plan of the Company or any Subsidiary of the Company or any trustee or other fiduciary holding securities under an employee benefit plan of the Company or any Subsidiary of the Company, (iii) an underwriter temporarily holding securities pursuant to an offering of such securities, (iv) an Entity Owned, directly or indirectly, by the stockholders of the Company in substantially the same proportions as their Ownership of stock of the Company; or (v) any natural person, Entity or “group” (within the meaning of Section 13(d) or 14(d) of the Exchange Act) that, as of the Effective Date, is the Owner, directly or indirectly, of securities of the Company representing more than fifty percent (50%) of the combined voting power of the Company’s then outstanding securities.

(t) “**Fair Market Value**” means, as of any date, the value of the Common Stock determined as follows:

(i) If the Common Stock is listed on any established stock exchange or traded on any established market, the Fair Market Value of a share of Common Stock will be, unless otherwise determined by the Board, the closing sales price for such stock as quoted on such exchange or market (or the exchange or market with the greatest volume of trading in the Common Stock) on the date of determination, as reported in a source the Board deems reliable.

(ii) Unless otherwise provided by the Board, if there is no closing sales price for the Common Stock on the date of determination, then the Fair Market Value will be the closing selling price on the last preceding date for which such quotation exists.

(iii) In the absence of such markets for the Common Stock, the Fair Market Value will be determined by the Board in good faith and in a manner that complies with Sections 409A and 422 of the Code.

(u) “**Full Value Award**” means a Stock Award that is not an Option or SAR with respect to which the exercise or strike price is at least 100% of the Fair Market Value of the Common Stock subject to the Option or SAR on the date of grant.

(v) “**Incentive Stock Option**” means an option granted pursuant to Section 5 that is intended to be, and that qualifies as, an “incentive stock option” within the meaning of Section 422 of the Code.

(w) “**Non-Employee Director**” means a Director who either (i) is not a current employee or officer of the Company or an Affiliate, does not receive compensation, either directly or indirectly, from the Company or an Affiliate for services rendered as a consultant or in any capacity other than as a Director (except for an amount as to which disclosure would not be required under Item 404(a) of Regulation S-K promulgated pursuant to the Securities Act (“**Regulation S-K**”)), does not possess an interest in any other transaction for which disclosure would be required under Item 404(a) of Regulation S-K, and is not engaged in a business relationship for which disclosure would be required pursuant to Item 404(b) of Regulation S-K; or (ii) is otherwise considered a “non-employee director” for purposes of Rule 16b-3.

(x) “**Nonstatutory Stock Option**” means any option granted pursuant to Section 5 that does not qualify as an Incentive Stock Option.

(y) “**Officer**” means a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act.

(z) “**Option**” means an Incentive Stock Option or a Nonstatutory Stock Option to purchase shares of Common Stock granted pursuant to the Plan.

(aa) “**Option Agreement**” means a written agreement between the Company and an Optionholder evidencing the terms and conditions of an Option grant. Each Option Agreement will be subject to the terms and conditions of the Plan.

(bb)“*Optionholder*” means a person to whom an Option is granted pursuant to the Plan or, if applicable, such other person who holds an outstanding Option.

(cc)“*Other Stock Award*” means an award based in whole or in part by reference to the Common Stock which is granted pursuant to the terms and conditions of Section 6(d).

(dd)“*Other Stock Award Agreement*” means a written agreement between the Company and a holder of an Other Stock Award evidencing the terms and conditions of an Other Stock Award grant. Each Other Stock Award Agreement will be subject to the terms and conditions of the Plan.

(ee)“*Own,*” “*Owned,*” “*Owner,*” “*Ownership*” A person or Entity will be deemed to “Own,” to have “Owned,” to be the “Owner” of, or to have acquired “Ownership” of securities if such person or Entity, directly or indirectly, through any contract, arrangement, understanding, relationship or otherwise, has or shares voting power, which includes the power to vote or to direct the voting, with respect to such securities.

(ff)“*Participant*” means a person to whom a Stock Award is granted pursuant to the Plan or, if applicable, such other person who holds an outstanding Stock Award.

(gg)“*Performance Criteria*” means the one or more criteria that the Board shall select for purposes of establishing the Performance Goals for a Performance Period. The Performance Criteria that shall be used to establish such Performance Goals may be based on any one of, or combination of, the following: (i) earnings (including earnings per share and net earnings); (ii) earnings before interest, taxes and depreciation; (iii) earnings before interest, taxes, depreciation and amortization; (iv) total stockholder return; (v) return on equity or average stockholder’s equity; (vi) return on assets, investment, or capital employed; (vii) stock price; (viii) margin (including gross margin); (ix) income (before or after taxes); (x) operating income; (xi) operating income after taxes; (xii) pre-tax profit; (xiii) operating cash flow; (xiv) sales or revenue targets; (xv) increases in revenue or product revenue; (xvi) expenses and cost reduction goals; (xvii) improvement in or attainment of working capital levels; (xviii) economic value added (or an equivalent metric); (xix) market share; (xx) cash flow; (xxi) cash flow per share; (xxii) share price performance; (xxiii) debt reduction; (xxiv) implementation or completion of projects or processes; (xxv) customer satisfaction; (xxvi) stockholders’ equity; (xxvii) capital expenditures; (xxviii) debt levels; (xxix) operating profit or net operating profit; (xxx) workforce diversity; (xxxi) growth of net income or operating income; (xxxii) billings; and (xxxiv) other measures of performance selected by the Board. Partial achievement of the specified criteria may result in the payment or vesting corresponding to the degree of achievement as specified in the Stock Award Agreement. The Board shall, in its sole discretion, define the manner of calculating the Performance Criteria it selects to use for such Performance Period.

(hh)“*Performance Goals*” means, for a Performance Period, the one or more goals established by the Board for the Performance Period based upon the Performance Criteria. Performance Goals may be based on a Company-wide basis, with respect to one or more business units, divisions, Affiliates, or business segments, and in either absolute terms or relative to the performance of one or more comparable companies or the performance of one or more relevant indices. The Board is authorized at any time in its sole discretion, to adjust or modify the

calculation of a Performance Goal for such Performance Period in order to prevent the dilution or enlargement of the rights of Participants, (a) in the event of, or in anticipation of, any unusual or extraordinary corporate item, transaction, event or development; (b) in recognition of, or in anticipation of, any other unusual or nonrecurring events affecting the Company, or the financial statements of the Company in response to, or in anticipation of, changes in applicable laws, regulations, accounting principles, or business conditions; or (c) in view of the Board's assessment of the business strategy of the Company, performance of comparable organizations, economic and business conditions, and any other circumstances deemed relevant. Specifically, the Board is authorized to make adjustment in the method of calculating attainment of Performance Goals and objectives for a Performance Period as follows: (i) to exclude the dilutive effects of acquisitions or joint ventures; (ii) to assume that any business divested by the Company achieved performance objectives at targeted levels during the balance of a Performance Period following such divestiture; and (iii) to exclude the effect of any change in the outstanding shares of common stock of the Company by reason of any stock dividend or split, stock repurchase, reorganization, recapitalization, merger, consolidation, spin-off, combination or exchange of shares or other similar corporate change, or any distributions to common stockholders other than regular cash dividends. In addition, the Board is authorized to make adjustment in the method of calculating attainment of Performance Goals and objectives for a Performance Period as follows: (i) to exclude restructuring and/or other nonrecurring charges; (ii) to exclude exchange rate effects, as applicable, for non-U.S. dollar denominated net sales and operating earnings; (iii) to exclude the effects of changes to generally accepted accounting standards required by the Financial Accounting Standards Board; (iv) to exclude the effects of any items that are "unusual" in nature or occur "infrequently" as determined under generally accepted accounting principles; (v) to exclude the effects to any statutory adjustments to corporate tax rates; and (vi) to make other appropriate adjustments selected by the Board.

(ii) "Performance Period" means the period of time selected by the Board over which the attainment of one or more Performance Goals will be measured for the purpose of determining a Participant's right to and the payment of a Performance Stock Award. Performance Periods may be of varying and overlapping duration, at the sole discretion of the Board.

(jj) "Performance Stock Award" means a Stock Award granted under the terms and conditions of Section 6(c)(i).

(kk) "Plan" means this MannKind Corporation 2018 Equity Incentive Plan.

(ll) "Restricted Stock Award" means an award of shares of Common Stock which is granted pursuant to the terms and conditions of Section 6(a).

(mm) "Restricted Stock Award Agreement" means a written agreement between the Company and a holder of a Restricted Stock Award evidencing the terms and conditions of a Restricted Stock Award grant. Each Restricted Stock Award Agreement will be subject to the terms and conditions of the Plan.

(nn) "Restricted Stock Unit Award" means a right to receive shares of Common Stock which is granted pursuant to the terms and conditions of Section 6(b).

(oo)“*Restricted Stock Unit Award Agreement*” means a written agreement between the Company and a holder of a Restricted Stock Unit Award evidencing the terms and conditions of a Restricted Stock Unit Award grant. Each Restricted Stock Unit Award Agreement will be subject to the terms and conditions of the Plan.

(pp)“*Retirement*” means a Participant’s voluntary termination of Continuous Service after the Participant attains age fifty-five (55).

(qq)“*Rule 16b-3*” means Rule 16b-3 promulgated under the Exchange Act or any successor to Rule 16b-3, as in effect from time to time.

(rr)“*Rule 405*” means Rule 405 promulgated under the Securities Act.

(ss)“*Securities Act*” means the Securities Act of 1933, as amended.

(tt)“*Stock Appreciation Right*” or “*SAR*” means a right to receive the appreciation on Common Stock that is granted pursuant to the terms and conditions of Section 5.

(uu)“*Stock Appreciation Right Agreement*” means a written agreement between the Company and a holder of a Stock Appreciation Right evidencing the terms and conditions of a Stock Appreciation Right grant. Each Stock Appreciation Right Agreement will be subject to the terms and conditions of the Plan.

(vv)“*Stock Award*” means any right to receive Common Stock granted under the Plan, including an Incentive Stock Option, a Nonstatutory Stock Option, a Stock Appreciation Right, a Restricted Stock Award, a Restricted Stock Unit Award, a Performance Stock Award or any Other Stock Award.

(ww)“*Stock Award Agreement*” means a written agreement between the Company and a Participant evidencing the terms and conditions of a Stock Award grant. Each Stock Award Agreement will be subject to the terms and conditions of the Plan.

(xx)“*Subsidiary*” means, with respect to the Company, (i) any corporation of which more than 50% of the outstanding capital stock having ordinary voting power to elect a majority of the board of directors of such corporation (irrespective of whether, at the time, stock of any other class or classes of such corporation will have or might have voting power by reason of the happening of any contingency) is at the time, directly or indirectly, Owned by the Company, and (ii) any partnership, limited liability company or other entity in which the Company has a direct or indirect interest (whether in the form of voting or participation in profits or capital contribution) of more than 50%.

(yy)“*Ten Percent Stockholder*” means a person who Owns (or is deemed to Own pursuant to Section 424(d) of the Code) stock possessing more than 10% of the total combined voting power of all classes of stock of the Company or any Affiliate.

(zz)“*Transaction*” means a Corporate Transaction or a Change in Control.

MANNKIND CORPORATION

2004 EMPLOYEE STOCK PURCHASE PLAN

ADOPTED BY THE BOARD OF DIRECTORS MARCH 23, 2004

APPROVED BY STOCKHOLDERS MARCH 23, 2004

AMENDED BY THE BOARD OF DIRECTORS FEBRUARY 21, 2018

AMENDED PLAN APPROVED BY THE STOCKHOLDERS MAY 16, 2018

AMENDED BY THE BOARD OF DIRECTORS MARCH 17, 2023

AMENDED PLAN APPROVED BY THE STOCKHOLDERS MAY 25, 2023

1. PURPOSE.

(a) The purpose of the Plan is to provide a means by which Employees of the Company and certain designated Related Corporations may be given an opportunity to purchase shares of the Common Stock of the Company.

(b) The Company, by means of the Plan, seeks to retain the services of such Employees, to secure and retain the services of new Employees and to provide incentives for such persons to exert maximum efforts for the success of the Company and its Related Corporations.

(c) The Company intends that the Purchase Rights be considered options issued under an Employee Stock Purchase Plan.

2. DEFINITIONS.

As used in the Plan and any Offering, unless otherwise specified, the following terms have the meanings set forth below:

(a) **“Board”** means the Board of Directors of the Company.

(b) **“Code”** means the Internal Revenue Code of 1986, as amended.

(c) **“Committee”** means a committee appointed by the Board in accordance with Section 3(c) of the Plan.

(d) **“Common Stock”** means the common stock of the Company.

(e) **“Company”** means MannKind Corporation, a Delaware corporation.

(f) **“Contributions”** means the payroll deductions and other additional payments that a Participant contributes to fund the exercise of a Purchase Right. A Participant may make payments not through payroll deductions only if specifically provided for in the Offering, and then only if the Participant has not already had the maximum permitted amount withheld through payroll deductions during the Offering.

(g) “Corporate Transaction” means the occurrence, in a single transaction or in a series of related transactions, of any one or more of the following events:

- (i)** a sale, lease, license or other disposition of all or substantially all of the consolidated assets of the Company;
- (ii)** a sale or other disposition of at least fifty percent (50%) of the outstanding securities of the Company;
- (iii)** a merger, consolidation or similar transaction following which the Company is not the surviving corporation; or
- (iv)** a merger, consolidation or similar transaction following which the Company is the surviving corporation but the shares of Common Stock outstanding immediately preceding the merger, consolidation or similar transaction are converted or exchanged by virtue of the merger, consolidation or similar transaction into other property, whether in the form of securities, cash or otherwise.

(h) “Director” means a member of the Board.

(i) “Eligible Employee” means an Employee who meets the requirements set forth in the Offering for eligibility to participate in the Offering, provided that such Employee also meets the requirements for eligibility to participate set forth in the Plan.

(j) “Employee” means any person, including Officers and Directors, who is employed for purposes of Section 423(b)(4) of the Code by the Company or a Related Corporation. Neither service as a Director nor payment of a director’s fee shall be sufficient to make an individual an Employee of the Company or a Related Corporation.

(k) “Employee Stock Purchase Plan” means a plan that grants Purchase Rights intended to be options issued under an “employee stock purchase plan,” as that term is defined in Section 423(b) of the Code.

(l) “Exchange Act” means the Securities Exchange Act of 1934, as amended.

(m) “Fair Market Value” means the value of a security, as determined in good faith by the Board. If the security is listed on any established stock exchange or traded on the Nasdaq National Market or the Nasdaq SmallCap Market, the Fair Market Value of the security, unless otherwise determined by the Board, shall be the closing sales price (rounded up where necessary to the nearest whole cent) for such security (or the closing bid, if no sales were reported) as quoted on such exchange or market (or the exchange or market with the greatest volume of trading in the relevant security of the Company) on the Trading Day prior to the relevant determination date, as reported in *The Wall Street Journal* or such other source as the Board deems reliable.

(n) “Offering” means the grant of Purchase Rights to purchase shares of Common Stock under the Plan to Eligible Employees.

(o) “Offering Date” means a date selected by the Board for an Offering to commence.

(p) “Officer” means a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act and the rules and regulations promulgated thereunder.

(q) “Participant” means an Eligible Employee who holds an outstanding Purchase Right granted pursuant to the Plan.

(r) “Plan” means this MannKind Corporation 2004 Employee Stock Purchase Plan.

(s) “Purchase Date” means one or more dates during an Offering established by the Board on which Purchase Rights shall be exercised and as of which purchases of shares of Common Stock shall be carried out in accordance with such Offering.

(t) “Purchase Period” means a period of time specified within an Offering beginning on the Offering Date or on the next day following a Purchase Date within an Offering and ending on a Purchase Date. An Offering may consist of one or more Purchase Periods.

(u) “Purchase Right” means an option to purchase shares of Common Stock granted pursuant to the Plan.

(v) “Related Corporation” means any parent corporation or subsidiary corporation, whether now or hereafter existing, as those terms are defined in Sections 424(e) and (f), respectively, of the Code.

(w) “Securities Act” means the Securities Act of 1933, as amended.

(x) “Trading Day” means any day on which the exchange(s) or market(s) on which shares of Common Stock are listed, whether it be an established stock exchange, the Nasdaq National Market, the Nasdaq SmallCap Market or otherwise, is open for trading.

3. ADMINISTRATION.

(a) The Board shall administer the Plan unless and until the Board delegates administration to a Committee, as provided in Section 3(c). Whether or not the Board has delegated administration, the Board shall have the final power to determine all questions of policy and expediency that may arise in the administration of the Plan.

(b) The Board (or the Committee) shall have the power, subject to, and within the limitations of, the express provisions of the Plan:

(i) To determine when and how Purchase Rights to purchase shares of Common Stock shall be granted and the provisions of each Offering of such Purchase Rights (which need not be identical).

(ii) To designate from time to time which Related Corporations of the Company shall be eligible to participate in the Plan.

(iii) To construe and interpret the Plan and Purchase Rights, and to establish, amend and revoke rules and regulations for the administration of the Plan. The Board, in the exercise of

this power, may correct any defect, omission or inconsistency in the Plan, in a manner and to the extent it shall deem necessary or expedient to make the Plan fully effective.

(iv) To amend the Plan as provided in Section 15.

(v) Generally, to exercise such powers and to perform such acts as it deems necessary or expedient to promote the best interests of the Company and its Related Corporations and to carry out the intent that the Plan be treated as an Employee Stock Purchase Plan.

(vi) To adopt such procedures and sub-plans as are necessary or appropriate to permit participation in the Plan by Employees who are foreign nationals or employed outside the United States.

(c) The Board may delegate administration of the Plan to a Committee of the Board composed of one (1) or more members of the Board. If administration is delegated to a Committee, the Committee shall have, in connection with the administration of the Plan, the powers theretofore possessed by the Board, subject, however, to such resolutions, not inconsistent with the provisions of the Plan, as may be adopted from time to time by the Board. The Board may abolish the Committee at any time and revest in the Board the administration of the Plan. If administration is delegated to a Committee, references to the Board in this Plan and in the Offering document shall thereafter be deemed to be to the Board or the Committee, as the case may be.

(d) All determinations, interpretations and constructions made by the Board in good faith shall not be subject to review by any person and shall be final, binding and conclusive on all persons.

4. SHARES OF COMMON STOCK SUBJECT TO THE PLAN.

Subject to the provisions of Section 14(a) relating to adjustments upon changes in Common Stock, the stock that may be sold pursuant to Purchase Rights granted under the Plan shall not exceed in the aggregate seven million six hundred eighty-six thousand one hundred forty (7,686,140) shares of Common Stock.

5. GRANT OF PURCHASE RIGHTS; OFFERING.

(a) The Board may from time to time grant or provide for the grant of Purchase Rights to purchase shares of Common Stock under the Plan to Eligible Employees in an Offering (consisting of one or more Purchase Periods) on an Offering Date or Offering Dates selected by the Board. Each Offering shall be in such form and shall contain such terms and conditions as the Board shall deem appropriate, which shall comply with the requirement of Section 423(b)(5) of the Code that all Employees granted Purchase Rights shall have the same rights and privileges. The terms and conditions of an Offering shall be incorporated by reference into the Plan and treated as part of the Plan. The provisions of separate Offerings need not be identical, but each Offering shall include (through incorporation of the provisions of this Plan by reference in the document comprising the Offering or otherwise) the period during which the Offering shall be effective, which period shall not exceed twenty-seven (27) months beginning with the Offering Date, and the substance of the provisions contained in Sections 6 through 9, inclusive.

(b) If a Participant has more than one Purchase Right outstanding under the Plan, unless he or she otherwise indicates in agreements or notices delivered hereunder: (i) each agreement or notice delivered by that Participant shall be deemed to apply to all of his or her Purchase Rights under the Plan, and (ii) a Purchase Right with a lower exercise price (or an earlier-granted Purchase Right, if different Purchase Rights have identical exercise prices) shall be exercised to the fullest possible extent before a Purchase Right with a higher exercise price (or a later-granted Purchase Right if different Purchase Rights have identical exercise prices) shall be exercised.

6. ELIGIBILITY.

(a) Purchase Rights may be granted only to Employees of the Company or, as the Board may designate as provided in Section 3(b), to Employees of a Related Corporation. Except as provided in Section 6(b), an Employee shall not be eligible to be granted Purchase Rights under the Plan unless, on the Offering Date, such Employee has been in the employ of the Company or the Related Corporation, as the case may be, for such continuous period preceding such Offering Date as the Board may require, but in no event shall the required period of continuous employment be greater than two (2) years. In addition, the Board may provide that no Employee shall be eligible to be granted Purchase Rights under the Plan unless, on the Offering Date, such Employee's customary employment with the Company or the Related Corporation is more than twenty (20) hours per week and/or more than five (5) months per calendar year.

(b) The Board may provide that each person who, during the course of an Offering, first becomes an Eligible Employee shall, on a date or dates specified in the Offering which coincides with the day on which such person becomes an Eligible Employee or which occurs thereafter, receive a Purchase Right under that Offering, which Purchase Right shall thereafter be deemed to be a part of that Offering. Such Purchase Right shall have the same characteristics as any Purchase Rights originally granted under that Offering, as described herein, except that:

(i) the date on which such Purchase Right is granted shall be the "Offering Date" of such Purchase Right for all purposes, including determination of the exercise price of such Purchase Right;

(ii) the period of the Offering with respect to such Purchase Right shall begin on its Offering Date and end coincident with the end of such Offering; and

(iii) the Board may provide that if such person first becomes an Eligible Employee within a specified period of time before the end of the Offering, he or she shall not receive any Purchase Right under that Offering.

(c) No Employee shall be eligible for the grant of any Purchase Rights under the Plan if, immediately after any such Purchase Rights are granted, such Employee owns stock possessing five percent (5%) or more of the total combined voting power or value of all classes of stock of the Company or of any Related Corporation. For purposes of this Section 6(c), the rules of Section 424(d) of the Code shall apply in determining the stock ownership of any Employee, and stock which such Employee may purchase under all outstanding Purchase Rights and options shall be treated as stock owned by such Employee.

(d)As specified by Section 423(b)(8) of the Code, an Eligible Employee may be granted Purchase Rights under the Plan only if such Purchase Rights, together with any other rights granted under all Employee Stock Purchase Plans of the Company and any Related Corporations, do not permit such Eligible Employee's rights to purchase stock of the Company or any Related Corporation to accrue at a rate which exceeds twenty five thousand dollars (\$25,000) of Fair Market Value of such stock (determined at the time such rights are granted, and which, with respect to the Plan, shall be determined as of their respective Offering Dates) for each calendar year in which such rights are outstanding at any time.

(e)Officers of the Company and any designated Related Corporation, if they are otherwise Eligible Employees, shall be eligible to participate in Offerings under the Plan. Notwithstanding the foregoing, the Board may provide in an Offering that Employees who are highly compensated Employees within the meaning of Section 423(b)(4)(D) of the Code shall not be eligible to participate.

7. PURCHASE RIGHTS; PURCHASE PRICE.

(a)On each Offering Date, each Eligible Employee, pursuant to an Offering made under the Plan, shall be granted a Purchase Right to purchase up to that number of shares of Common Stock purchasable either with a percentage or with a maximum dollar amount, as designated by the Board, but in either case not exceeding twenty percent (20%), of such Employee's Earnings (as defined by the Board in each Offering) during the period that begins on the Offering Date (or such later date as the Board determines for a particular Offering) and ends on the date stated in the Offering, which date shall be no later than the end of the Offering.

(b)The Board shall establish one (1) or more Purchase Dates during an Offering as of which Purchase Rights granted pursuant to that Offering shall be exercised and purchases of shares of Common Stock shall be carried out in accordance with such Offering.

(c)In connection with each Offering made under the Plan, the Board may specify a maximum number of shares of Common Stock that may be purchased by any Participant on any Purchase Date during such Offering. In connection with each Offering made under the Plan, the Board may specify a maximum aggregate number of shares of Common Stock that may be purchased by all Participants pursuant to such Offering. In addition, in connection with each Offering that contains more than one Purchase Date, the Board may specify a maximum aggregate number of shares of Common Stock that may be purchased by all Participants on any Purchase Date under the Offering. If the aggregate purchase of shares of Common Stock issuable upon exercise of Purchase Rights granted under the Offering would exceed any such maximum aggregate number, then, in the absence of any Board action otherwise, a pro rata allocation of the shares of Common Stock available shall be made in as nearly a uniform manner as shall be practicable and equitable.

(d)The purchase price of shares of Common Stock acquired pursuant to Purchase Rights shall be not less than the lesser of:

(i) an amount equal to eighty-five percent (85%) of the Fair Market Value of the shares of Common Stock on the Offering Date; or

(ii) an amount equal to eighty-five percent (85%) of the Fair Market Value of the shares of Common Stock on the applicable Purchase Date.

8. PARTICIPATION; WITHDRAWAL; TERMINATION.

(a) A Participant may elect to authorize payroll deductions pursuant to an Offering under the Plan by completing and delivering to the Company, within the time specified in the Offering, an enrollment form (in such form as the Company may provide). Each such enrollment form shall authorize an amount of Contributions expressed as a percentage of the submitting Participant's Earnings (as defined in each Offering) during the Offering (not to exceed the maximum percentage specified by the Board). Each Participant's Contributions shall remain the property of the Participant at all times prior to the purchase of Common Stock, but such Contributions may be commingled with the assets of the Company and used for general corporate purposes except where applicable law requires that Contributions be deposited with an independent third party. To the extent provided in the Offering, a Participant may begin making Contributions after the beginning of the Offering. To the extent provided in the Offering, a Participant may thereafter reduce (including to zero) or increase his or her Contributions. To the extent specifically provided in the Offering, in addition to making Contributions by payroll deductions, a Participant may make Contributions through the payment by cash or check prior to each Purchase Date of the Offering.

(b) During an Offering, a Participant may cease making Contributions and withdraw from the Offering by delivering to the Company a notice of withdrawal in such form as the Company may provide. Such withdrawal may be elected at any time prior to the end of the Offering, except as provided otherwise in the Offering. Upon such withdrawal from the Offering by a Participant, the Company shall distribute to such Participant all of his or her accumulated Contributions (reduced to the extent, if any, such Contributions have been used to acquire shares of Common Stock for the Participant) under the Offering, and such Participant's Purchase Right in that Offering shall thereupon terminate. A Participant's withdrawal from an Offering shall have no effect upon such Participant's eligibility to participate in any other Offerings under the Plan, but such Participant shall be required to deliver a new enrollment form in order to participate in subsequent Offerings.

(c) Purchase Rights granted pursuant to any Offering under the Plan shall terminate immediately upon a Participant ceasing to be an Employee for any reason or for no reason (subject to any post-employment participation period required by law) or other lack of eligibility. The Company shall distribute to such terminated or otherwise ineligible Employee all of his or her accumulated Contributions (reduced to the extent, if any, such Contributions have been used to acquire shares of Common Stock for the terminated or otherwise ineligible Employee) under the Offering.

(d) Purchase Rights shall not be transferable by a Participant otherwise than by will, the laws of descent and distribution, or a beneficiary designation as provided in Section 13. During a Participant's lifetime, Purchase Rights shall be exercisable only by such Participant.

(e) Unless otherwise specified in an Offering, the Company shall have no obligation to pay interest on Contributions.

9. EXERCISE.

(a) On each Purchase Date during an Offering, each Participant's accumulated Contributions shall be applied to the purchase of shares of Common Stock up to the maximum number of shares of Common Stock permitted pursuant to the terms of the Plan and the applicable Offering, at the purchase price specified in the Offering. No fractional shares shall be issued upon the exercise of Purchase Rights unless specifically provided for in the Offering.

(b) If any amount of accumulated Contributions remains in a Participant's account after the purchase of shares of Common Stock and such remaining amount is less than the amount required to purchase one share of Common Stock on the final Purchase Date of an Offering, then such remaining amount shall be held in such Participant's account for the purchase of shares of Common Stock under the next Offering under the Plan, unless such Participant withdraws from such next Offering, as provided in Section 8(b), or is not eligible to participate in such Offering, as provided in Section 6, in which case such amount shall be distributed to such Participant after the final Purchase Date, without interest. If the amount of Contributions remaining in a Participant's account after the purchase of shares of Common Stock is at least equal to the amount required to purchase one (1) whole share of Common Stock on the final Purchase Date of the Offering, then such remaining amount shall be distributed in full to such Participant at the end of the Offering.

(c) No Purchase Rights may be exercised to any extent unless the shares of Common Stock to be issued upon such exercise under the Plan are covered by an effective registration statement pursuant to the Securities Act and the Plan is in material compliance with all laws applicable to the Plan. If on a Purchase Date during any Offering hereunder the shares of Common Stock are not so registered or the Plan is not in such compliance, no Purchase Rights or any Offering shall be exercised on such Purchase Date, and the Purchase Date shall be delayed until the shares of Common Stock are subject to such an effective registration statement and the Plan is in such compliance, except that the Purchase Date shall not be delayed more than twelve (12) months and the Purchase Date shall in no event be more than twenty-seven (27) months from the Offering Date. If, on the Purchase Date under any Offering hereunder, as delayed to the maximum extent permissible, the shares of Common Stock are not registered and the Plan is not in such compliance, no Purchase Rights or any Offering shall be exercised and all Contributions accumulated during the Offering (reduced to the extent, if any, such Contributions have been used to acquire shares of Common Stock) shall be distributed to the Participants.

10. COVENANTS OF THE COMPANY.

The Company shall seek to obtain from each federal, state, foreign or other regulatory commission or agency having jurisdiction over the Plan such authority as may be required to issue and sell shares of Common Stock upon exercise of the Purchase Rights. If, after commercially reasonable efforts, the Company is unable to obtain from any such regulatory commission or agency the authority that counsel for the Company deems necessary for the lawful issuance and sale of shares of Common Stock under the Plan, the Company shall be relieved from any liability for failure to issue and sell shares of Common Stock upon exercise of such Purchase Rights unless and until such authority is obtained.

11. USE OF PROCEEDS FROM SHARES OF COMMON STOCK.

Proceeds from the sale of shares of Common Stock pursuant to Purchase Rights shall constitute general funds of the Company.

12. RIGHTS AS A STOCKHOLDER.

A Participant shall not be deemed to be the holder of, or to have any of the rights of a holder with respect to, shares of Common Stock subject to Purchase Rights unless and until the Participant's shares of Common Stock acquired upon exercise of Purchase Rights are recorded in the books of the Company (or its transfer agent).

13. DESIGNATION OF BENEFICIARY.

(a) A Participant may file a written designation of a beneficiary who is to receive any shares of Common Stock and/or cash, if any, from the Participant's account under the Plan in the event of such Participant's death subsequent to the end of an Offering but prior to delivery to the Participant of such shares of Common Stock or cash. In addition, a Participant may file a written designation of a beneficiary who is to receive any cash from the Participant's account under the Plan in the event of such Participant's death during an Offering. Any such designation shall be on a form provided by or otherwise acceptable to the Company.

(b) The Participant may change such designation of beneficiary at any time by written notice to the Company. In the event of the death of a Participant and in the absence of a beneficiary validly designated under the Plan who is living at the time of such Participant's death, the Company shall deliver such shares of Common Stock and/or cash to the executor or administrator of the estate of the Participant, or if no such executor or administrator has been appointed (to the knowledge of the Company), the Company, in its sole discretion, may deliver such shares of Common Stock and/or cash to the spouse or to any one or more dependents or relatives of the Participant, or if no spouse, dependent or relative is known to the Company, then to such other person as the Company may designate.

14. ADJUSTMENTS UPON CHANGES IN SECURITIES; CORPORATE TRANSACTIONS.

(a) If any change is made in the shares of Common Stock, subject to the Plan, or subject to any Purchase Right, without the receipt of consideration by the Company (through merger, consolidation, reorganization, recapitalization, reincorporation, stock dividend, dividend in property other than cash, stock split, liquidating dividend, combination of shares, exchange of shares, change in corporate structure or other transaction not involving the receipt of consideration by the Company), the Plan shall be appropriately adjusted in the type(s), class(es) and maximum number of shares of Common Stock subject to the Plan pursuant to Section 4(a), and the outstanding Purchase Rights shall be appropriately adjusted in the type(s), class(es), number of shares and purchase limits of such outstanding Purchase Rights. The Board shall make such adjustments, and its determination shall be final, binding and conclusive. (Notwithstanding the foregoing, the conversion of any convertible securities of the Company shall not be treated as a "transaction not involving the receipt of consideration by the Company.")

(b)In the event of a Corporate Transaction, then: (i) any surviving or acquiring corporation may continue or assume Purchase Rights outstanding under the Plan or may substitute similar rights (including a right to acquire the same consideration paid to stockholders in the Corporate Transaction) for those outstanding under the Plan, or (ii) if any surviving or acquiring corporation does not continue or assume such Purchase Rights or does not substitute similar rights for Purchase Rights outstanding under the Plan, then, the Participants' accumulated Contributions shall be used to purchase shares of Common Stock within ten (10) business days prior to the Corporate Transaction under the ongoing Offering, and the Participants' Purchase Rights under the ongoing Offering shall terminate immediately after such purchase.

15. AMENDMENT OF THE PLAN.

(a)The Board at any time, and from time to time, may amend the Plan. However, except as provided in Section 14 relating to adjustments upon changes in securities and except as to amendments solely to benefit the administration of the Plan, to take account of a change in legislation or to obtain or maintain favorable tax, exchange control or regulatory treatment for Participants or the Company or any Related Corporation, no amendment shall be effective unless approved by the stockholders of the Company to the extent stockholder approval is necessary for the Plan to satisfy the requirements of Section 423 of the Code or other applicable laws or regulations.

(b)It is expressly contemplated that the Board may amend the Plan in any respect the Board deems necessary or advisable to provide Employees with the maximum benefits provided or to be provided under the provisions of the Code and the regulations promulgated thereunder relating to Employee Stock Purchase Plans or to bring the Plan and/or Purchase Rights into compliance therewith.

(c)The rights and obligations under any Purchase Rights granted before amendment of the Plan shall not be impaired by any amendment of the Plan except: (i) with the consent of the person to whom such Purchase Rights were granted, or (ii) as necessary to comply with any laws or governmental regulations (including, without limitation, the provisions of the Code and the regulations promulgated thereunder relating to Employee Stock Purchase Plans).

16. TERMINATION OR SUSPENSION OF THE PLAN.

(a)The Board in its discretion may suspend or terminate the Plan at any time. Unless sooner terminated, the Plan shall terminate at the time that all of the shares of Common Stock reserved for issuance under the Plan, as increased and/or adjusted from time to time, have been issued under the terms of the Plan. No Purchase Rights may be granted under the Plan while the Plan is suspended or after it is terminated.

(b)Any benefits, privileges, entitlements and obligations under any Purchase Rights while the Plan is in effect shall not be impaired by suspension or termination of the Plan except (i) as expressly provided in the Plan or with the consent of the person to whom such Purchase Rights were granted, (ii) as necessary to comply with any laws, regulations, or listing requirements, or (iii) as necessary to ensure that the Plan and/or Purchase Rights comply with the requirements of Section 423 of the Code.

17. EFFECTIVE DATE OF PLAN.

The Plan shall become effective as determined by the Board, but no Purchase Rights shall be exercised unless and until the Plan has been approved by the stockholders of the Company within twelve (12) months before or after the date the Plan is adopted by the Board.

18. MISCELLANEOUS PROVISIONS.

(a) The Plan and Offering do not constitute an employment contract. Nothing in the Plan or in the Offering shall in any way alter the at will nature of a Participant's employment or be deemed to create in any way whatsoever any obligation on the part of any Participant to continue in the employ of the Company or a Related Corporation, or on the part of the Company or a Related Corporation to continue the employment of a Participant.

(b) The provisions of the Plan shall be governed by the laws of the State of California without resort to that state's conflicts of laws rules.

CERTIFICATION OF CHIEF EXECUTIVE OFFICER

PURSUANT TO RULE 13a-14(a) OR 15d-14(a) OF THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED

I, Michael E. Castagna, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2023 of MannKind Corporation;
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.

/s/ Michael E. Castagna

Michael E. Castagna
Chief Executive Officer and Director

Date: August 7, 2023

CERTIFICATION OF CHIEF FINANCIAL OFFICER

PURSUANT TO RULE 13a-14(a) OR 15d-14(a) OF THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED

I, Steven B. Binder, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2023 of MannKind Corporation;
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.

/s/ Steven B. Binder

Steven B. Binder
Chief Financial Officer

Date: August 7, 2023

CERTIFICATION OF
CHIEF EXECUTIVE OFFICER
PURSUANT TO
RULE 13a-14(b) OR 15d-14(b) OF THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED, AND SECTION 1350 OF
CHAPTER 63 OF TITLE 18 OF THE UNITED STATES CODE (18 U.S.C. § 1350)¹

In connection with the filing of the quarterly report of MannKind Corporation (the “Company”) on Form 10-Q for the quarterly period ended June 30, 2023, as filed with the Securities and Exchange Commission on or about the date hereof, to which this certification is attached as Exhibit 32.1 (the “Report”) and pursuant to the requirement set forth in Rule 13a-14(b) or Rule 15d-14(b) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350), Michael E. Castagna, Chief Executive Officer of MannKind Corporation (the “Company”), hereby certifies that, to the best of his knowledge:

1. The Report fully complies with the requirements of Section 13(a) or Section 15(d) of the Exchange Act, and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

In Witness Whereof, the undersigned has set his hand hereto as of the 7th day of August, 2023.

/s/ Michael E. Castagna

Michael E. Castagna
Chief Executive Officer

¹ This certification is being furnished solely to accompany this quarterly report on Form 10-Q pursuant to 18 U.S.C. Section 1350, and is not deemed filed for purposes of Section 18 of the Exchange Act or the Securities Act of 1933, as amended, and is not incorporated by reference into any filing of the Company, whether made before or after the date hereof, regardless of any general incorporation language contained in such filing.

CERTIFICATION OF
CHIEF FINANCIAL OFFICER
PURSUANT TO
RULE 13a-14(b) OR 15d-14(b) OF THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED, AND SECTION 1350 OF
CHAPTER 63 OF TITLE 18 OF THE UNITED STATES CODE (18 U.S.C. § 1350)¹

In connection with the filing of the quarterly report of MannKind Corporation (the “Company”) on Form 10-Q for the quarterly period ended June 30, 2023, as filed with the Securities and Exchange Commission on or about the date hereof, to which this certification is attached as Exhibit 32.2 (the “Report”) and pursuant to the requirement set forth in Rule 13a-14(b) or Rule 15d-14(b) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350), Steven B. Binder, Chief Financial Officer of MannKind Corporation (the “Company”), hereby certifies that, to the best of his knowledge:

1. The Report fully complies with the requirements of Section 13(a) or Section 15(d) of the Exchange Act, and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

In Witness Whereof, the undersigned has set his hand hereto as of the 7th day of August, 2023.

/s/ Steven B. Binder

Steven B. Binder
Chief Financial Officer

¹ This certification is being furnished solely to accompany this quarterly report on Form 10-Q pursuant to 18 U.S.C. Section 1350, and is not deemed filed for purposes of Section 18 of the Exchange Act or the Securities Act of 1933, as amended, and is not incorporated by reference into any filing of the Company, whether made before or after the date hereof, regardless of any general incorporation language contained in such filing.
